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M85010583

ORNL--6157

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1984
BIBLIOGRAPHY OF ATOMIC AND MOLECULAR PROCESSES

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As a part of the work of:
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of the U.S. Department of Energy

Date Published - April 1985

Prepared by the
OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37831
operated by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
Under contract No. DE-AC05-840R21400

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ABSTRACT

This annotated bibliography includes papers on atomic and molecular processes published during 1984. Sources include scientific journals, conference proceedings, and books. Each entry is designated by one or more of the 114 categories of atomic and molecular processes used by the Controlled Fusion Atomic Data Center, Oak Ridge National Laboratory to classify data. Also indicated is whether the work was experimental or theoretical, what energy range was covered, what reactants were investigated, and the country of origin of the first author. Following the bibliographical listing, the entries are indexed according to the categories and according to reactants within each subcategory.

INTRODUCTION

This annotated bibliography on atomic and molecular processes reported in open literature during 1984 has been compiled as a part of the activities of the Controlled Fusion Atomic Data Center. Each entry is labeled by one or more of the 10 major categories and 114 subcategories of atomic and molecular processes given on page 2. Grouping according to specific categories is found in the reactants index. Each entry indicates whether the work was experimental (E) or theoretical (T), what energy range was covered, and what reactants were investigated. The classification scheme relates principally to atomic collisions and in particular does not specifically contain atomic structure information (energy levels or wavelength). Structure data are compiled by the National Bureau of Standards and information on atomic structure may be solicited from W. L. Wiese, NBS, Rm. A267, Bldg. 221, Washington, DC 20234.

The following remarks are offered to facilitate the use of the bibliography:

1. Sequencing of reactants in the index follows the order N, N^* (excited state), N^+, N_2, N^-, NO, Na, Ne, etc.

2. Many papers do not refer to a particular collision system. Reactants in these cases are listed as undefined, denoted as Undef. Review papers are labeled Review rather than listing all reactants discussed in the paper. The abbreviation Seq, preceded by an atom, indicates all members of the isoelectronic sequence for that particular atom. PERT symbolizes "periodic table"; this notation is used when reactions involving a large number of the elements are covered by a publication. All of these codes are used in a general sense to avoid handling thousands of additional reactants at every stage in the production of these bibliographies.

3. The country listed at the end of each bibliographic entry is derived from the address of the first author given in the original publication.

Beginning in 1982 the Data Center adopted a revised categorization scheme in which some categories have been dropped and molecular reactants have been severely limited. This reduced categorization scheme reflects more precisely magnetic fusion interests but is still quite broad. Molecular species covered include H_2, H_3, HeH, N_2, O_2, CO, CO_2, OH, H_2O, CH_2, CH_3, CH_4, their ions and dissociated fragments.

ATOMIC COLLISIONS BIBLIOGRAPHY CATEGORIZATIONS LIST

Controlled Fusion Atomic Data Center, ORNL

A. HEAVY PARTICLE — HEAVY PARTICLE INTERACTIONS

1. General
2. Elastic Scattering Collisions
3. Excitation
4. Dissociation
5. Fluorescence
6. Electron Capture
7. Ionization
8. Stripping
9. Recombination or Mutual Neutralization Leading to Neutral Products (ion-ion)
11. Collisional De-Excitation
12. Collisional Line Broadening
14. Heavy Particle Interchange (must involve some form of hydrogen or helium)
15. Electron Detachment from Negative Ions into Continuum
17. Interaction Potentials
18. Angular Scattering
20. Attenuation [illegible]

B. INTERACTIONS OF ATOMIC PARTICLES WITH FIELDS

1. Interaction of Individual Atoms or Molecules with External Fields
2. Collisions in Presence of [illegible] or Time Varying Fields

C. PARTICLE PENETRATION IN MACROSCOPIC MATTER (IONS, NEUTRALS, AND ELECTRONS)

1. General
2. Energy Loss and Stopping Power
4. Particle Range
5. Multiple Scattering
6. Charge State Population
7. Excited State Population

D. PARTICLE INTERACTIONS WITH SOLID SURFACES

1. General
2. Sputtering by Electrons, Neutrons, and Heavy Particles (only total removal coefficients)
3. Sputtered Particle Charge and Quantum (Excited) State Distribution
4. Secondary Electron Ejection by Heavy Particle and Electrons
5. Photoelectric Ejection of Electrons (coefficients only)
6. Reflection of Electrons from Surfaces (coefficients only)
7. Reflection of Heavy Particles from Surfaces (total reflection coefficients only)
8. Charge and Quantum State Distributions of Reflected Heavy Particles
9. De-Excitation, Neutralization, Ionization, or Dissociation of Particles Interacting with Surfaces
11. Sticking Coefficients, Thermal Energies and Adsorption
12. Electromagnetic Radiation Induced by Electron or Heavy Particle Impact on Surfaces
13. Desorption of Gases from Surfaces
17. Electron-, Ion-, and Photon-Induced Chemical Changes to Surfaces
19. Trapping and Reemission of Hydrogen (all forms) and Helium

E. ELECTRON-PARTICLE INTERACTION

1. General
2. Elastic Collisions
3. Excitation
4. Dissociation
5. Ionization
6. Recombination (electron-ion)
7. Collisional De-Excitation
8. Collisional Line Broadening
9. Negative Ion Formation
11. Free-Free Transitions (Bremsstrahlung)
13. Electron Detachment from Negative Ions
16. Fluorescence
17. Angular Scattering
19. Momentum Transfer

H. PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS (hν < 100 keV)

1. General
2. Total Absorption
3. Elastic Scattering
4. Excitation
5. Dissociation
6. Ionization
7. Photodetachment
8. Fluorescence
11. Free-Free Absorption or Inverse Bremsstrahlung

J. DATA COMPILATION

1. Heavy Particle
2. Electrons
3. Photons
4. Particles on Surfaces and Solids
5. Transport
6. Structure

K. REVIEWS AND BOOKS

1. Heavy Particle
2. Electrons
3. Photons
4. Particles on Surfaces and Solids
5. Transport
6. Structure
7. General
8. Use of Atomic Data for Plasma Studies

L. BIBLIOGRAPHIES

1. Heavy Particle
2. Electrons
3. Photons
4. Particles on Surfaces and Solids
5. Transport
6. Structure

ABBREVIATIONS:

Li Seq — sequence (Li)

PERT — periodic table

Undef — undefined

No molecules except H_2, H_3, HeH, N_2, O_2, CO, CO_2, OH, H_2O, CH_2, CH_3, CH_4, and their ions

H or "hydrogen" also includes D and T

COUNTRY CODE:

1.	United States	25.	Brazil
2.	United Kingdom	26.	Australia
3.	Soviet Union	27.	East Germany
4.	Japan	28.	Sweden
5.	West Germany	29.	Greece
6.	France	30.	South Africa
7.	Canada	31.	Taiwan
8.	Mexico	32.	Argentina
9.	The Netherlands	33.	People's Republic of China
10.	Denmark	34.	Saudi Arabia
11.	Finland	35.	Algeria
12.	Norway	36.	People's Republic of Singapore
13.	Switzerland	37.	Malaysia
14.	India	38.	Nigeria
15.	Israel	39.	Egypt
16.	Italy	40.	Jordan
17.	Czechoslovakia	41.	New Zealand
18.	Yugoslavia	42.	Chile
19.	Romania	43.	Turkey
20.	Poland	44.	Bulgaria
21.	Austria	45.	Pakistan
22.	Hungary	46.	Portugal
23.	Belgium		
24.	Spain		

Controlled Fusion Atomic Data Center

Ref. No.	Reactants	Energy Range	Reference
01763 T	B30: hν + Co^{2+}; hν + Ni^{2+}	Undef	Bansen, J. E.; Baassen, A.J.J.; Dylings, P.H.M. Calculations of transition probabilities for forbidden line in the $3d^7$ ground configurations of Co III and Ni IV. Astrophys. J., Part 1 277, 435 (1984) The Netherlands
01764 E	E03: e + D_2	20-500 eV	Becker, K.; McConkey, J. W. Absolute cross sections for B_2 Lyman and Werner band excitation by controlled electron impact. Can. J. Phys. 62, 1 (1984) Canada
01765 E-T	E02: e + Li E19: e + Li	5-200 eV	Tayal, S. S.; Tripathi, A. N. Total cross sections for electron-lithium scattering. Can. J. Phys. 62, 198 (1984) India
01766 E-T	A36: H^+ + Be^+	53-139 keV	Datta, S.; Mandal, C. R.; Mukherjee, S. C. Charge transfer in H^+ - Be^+ (1s) collisions. Can. J. Phys. 62, 337 (1984) India
01767 T	E36: e + C^{3+}; e + C^{4+}	1[illegible] K	Summers, H. P. Recombination. Comments At. Mol. Phys. 14, 147 (1984) United Kingdom
01768 E	E05: e + Ag	3.33-13[illegible] keV	Genz, H. Inner-shell ionization by relativistic electron impact. Comments At. Mol. Phys. 14, 173 (1984) West Germany
01769 E-T	E33: e + Sn; e + Sn; e + Ta; e + W; e + Pt; e + Au; e + Pb	Threshold-33 keV	Shima, K.; Okada, H.; Suzuki, E.; Tsubota, T.; Mikumo, T. Le x-ray production efficiency from Z = 50-82 thick target elements by electron impacts from threshold energy to 33 keV. J. Appl. Phys. 54, 1232 (1983) Japan
01770 E	D07: He^+ + Al; Be^+ + Si; He^+ + Al_2O_3; He^+ + Al + Si	0.6-2.3 keV	MacDonald, J. R.; Davies, J. A.; Jackman, T. E.; Feldman, L. C. How well does ^4He backscattering from low-Z nuclei obey the Rutherford formula? J. Appl. Phys. 54, 1833 (1983) Canada
01771 T	E33: e + Be^+	Threshold-5 keV	Ganas, P. S.; Gately, L. P. Excitation of Be^+ by electron impact. J. Appl. Phys. 54, 2767 (1983) United States
01772 T	E33: e + Kr^{24+}	1-3x[illegible] K	Feldman, U.; Bhatia, A. K.; Suckewer, S. Short wavelength laser calculations for electron pumping in neon-like krypton (Kr XXVII). J. Appl. Phys. 54, 2188 (1983) United States
01773 E-T	D32: U^+ + U; U + U D33: U^+ + U; U + U D37: U^+ + U; U + U D38: U^+ + U; U + U	2.1-9 keV	Robinson, M. T. Computer simulation of the self-sputtering of uranium J. Appl. Phys. 54, 2653 (1983) United States
01774 E-T	D32: Ne^+ + Si; Ne^+ + Mo; Ar^+ + Si; Ar^+ + Mo; Kr^+ + Si; Kr^+ + Mo; Xe^+ + Si; Xe^+ + Mo	0.2-20 keV	Zalm, P. C. Energy dependence of the sputtering yield of silicon bombarded with neon, argon, krypton, and xenon ions. J. Appl. Phys. 54, 2660 (1983) The Netherlands
01775 E	C32: H^+ + GaAlAs C36: H^+ + GaAlAs	990-1020 keV	Bond, A. M.; Narayanthal, P.; Pollak, F. H.; Woodall, J. M. Direct measurement of proton straggling in GaAlAs for nuclear profiling. J. Appl. Phys. 55, 3433 (1984) United States
01776 P	C36: S^+ + Si	40-600 keV	Wilson, R. G. Depth distributions of sulfur implanted into silicon as a function of ion energy, ion fluence, and anneal temperature. J. Appl. Phys. 55, 3493 (1984) United States
01777 T	A16: O + H_2 A17: O + H_2	Undef	Donaldson, D. J.; Wright, J. S. Singlet-triplet surface crossings and low-temperature rate enhancement for $O(^3P)$ + H_2 + CH + H. J. Chem. Phys. 83, 225 (1984) Canada
01778 T	A17: F + H_2	Undef	Truhlar, D. G.; Garrett, B. C.; Blais, N. C. Two new potential energy surfaces for the F + H_2 reaction. J. Chem. Phys. 83, 232 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
01779 E	A14: $F + D_2$	3.8–4.5 kcal/mol	Walker, R. E.; Blais, N. C.; Truhlar, D. G. Dependence of reaction attributes, including differential cross sections and resonance features, on changes in the potential energy surface for the $F + D_2$ reaction. J. Chem. Phys. 80, 246 (1984) United States
01780 T	A17: H_2	Undef	Cima, J. A.; Harris, R. A. An electron gas treatment of the potential curve and polarizability tensor of the lowest $^3\Sigma$ [illegible] state of H_2. J. Chem. Phys. 80, 329 (1984) United States
01781 T	A17: $Li^+ + He$; $Li^+ + Ne$; $Na^+ + He$; $Na^+ + Ne$; $K^+ + He$; $K^+ + Ne$; $Rb^+ + He$; $Rb^+ + Ne$; $Cs^+ + He$; $Cs^+ + Ne$; $Cl^- + He$; $Cl^- + Ne$; $Br^- + He$; $Br^- + Ne$	Undef	Viehland, L. A.; Mason, E. A. Repulsive interactions of closed-shell ions with He and Ne atoms: comparison of beam and transport measurements. J. Chem. Phys. 80, 416 (1984) United States
01782 E	A37: $Ne^* + Cl_2$; $Ne^* + Cl_2$; $Ar^* + O_2$; $Kr^* + O_2$	30–1000 eV	Alvarino, J. M.; Hepp, C.; Kreiensen, M.; Staudenmayer, B.; Vecchiocattivi, F.; Kempter, V. The competition of Penning ionization and ion pair formation in fast collisions of metastable rare gas atoms with O_2 and Cl_2 molecules. J. Chem. Phys. 80, 765 (1984) West Germany
01783 T	A36: $H_2^+ + H_2$	36–833 eV	Lee, C. Y.; DePristo, A. E. Semiclassical investigation of vibrational state and molecular orientation effects in electron transfer reactions for the H_2^+–H_2 collision. J. Chem. Phys. 80, 1116 (1984) United States
01784 T	A17: $He + He$; $Ar + Ar$; $Kr + Kr$; [illegible] $+ Xe$; $Rn + Rn$	Undef	Cannamaria, R. C.; Castro, E. A.; Fernandez, F. M. Interaction energies between noble gas atoms from a trial density function in the Thomas-Fermi-Amaldi-Dirac formulation. J. Chem. Phys. 80, 1179 (1984) Argentina
01785 T	A14: $H + O_2$	28–90 kcal/mol	Kleinermanns, K.; Schinke, R. Dynamics of $H + O_2 \rightarrow OH + O$ at high collision energies. J. Chem. Phys. 80, 1443 (1984) West Germany
01786 T	A36: Undef A07: Undef A08: Undef	Undef	Boyd, R. K.; Kingston, E. E.; Brenton, A. G.; Beynon, J. H. Angle-dependence of ion kinetic energy spectra obtained by using mass spectrometers. I. Theoretical consequences of conservation laws for collisions. Proc. R. Soc. London Ser. A 392, 59 (1984) Canada
01787 E	A06: $Ar^+ + He$; $Ar^+ + N_2$; $Ar^+ + Ar$; $Ar^+ + Kr$ A37: $Ar^+ + He$; $Ar^+ + N_2$; $Ar^+ + Ar$; $Ar^+ + Kr$ A38: $Ar^+ + He$; $Ar^+ + N_2$; $Ar^+ + Ar$; $Ar^+ + Kr$	6 keV	Boyd, R. K.; Kingston, E. E.; Brenton, A. G.; Beynon, J. H. Angle-dependence of ion kinetic energy spectra obtained by using mass spectrometers. II. Experimental considerations and preliminary results on non-fragmenting systems. Proc. R. Soc. London Ser. A 392, 89 (1984) Canada
01788 E	A36: $He^{2+} + H_2$; $He^{2+} + He$; $He^{2+} + Ar$ A38: $He^+ + H_2$; $He^+ + He$; $He^+ + Ar$	66–130 MeV	Katayama, I.; Berg, G.P.A.; Hurlimann, W.; Martin, S. A.; Meissburger, J.; Oelert, W.; Rogge, M.; Romer, J.G.M.; Tain, J. L.; Zemlo, L.; Gaul, G. High-energy electron capture and stripping in gas targets. J. Phys. B 17, L23 (1984) West Germany
01789 T	E32: $e + N_2$; $e + CO$ E17: $e + N_2$; $e + CO$	50–400 eV	Jain, A.; Freitas, L.C.G.; Mu-Tao, L.; Tayal, S. S. Elastic scattering of intermediate and high energy electrons with N_2 and CO molecules. J. Phys. B 17, L29 (1984) United Kingdom
01790 T	E33: $e + O^{6+}$; $e + Mg^{10+}$; $e + Ca^{18+}$; $e + Fe^{24+}$	Undef	Steenman-Clark, L.; Faucher, P. The effect of resonances on the forbidden line of He-like ions. J. Phys. B 17, 73 (1984) France
01791 E	A36: $h\nu + Kr$	5–75 eV	Derenbach, H.; Schmidt, V. Angular distribution of Kr 4s → [illegible] photoelectrons. J. Phys. B 17, 83 (1984) West Germany
01792 E	A35: $N^+ + Au$ A37: $N^+ + Au$ A18: $N^+ + Au$	3–18.2 MeV	Palinkas, J.; Sarkadi, L.; Schlenk, B.; Torok, I.; Kalman, G.; Bauer, C.; Brankoff, K.; Grambole, D.; Heiser, C.; Rudolph, W.; Thomas, H. J. Study of the L-shell ionisation of gold by 3.3–18.2 MeV nitrogen-ion bombardment. J. Phys. B 17, 131 (1984) Hungary

Ref. No.	Reactants	Energy Range	Reference
01793 T	A02: $H^+ + H$ A10: $H^+ + H$	100–2500 MeV	Saha, B. Proton-hydrogen elastic scattering at high energies. J. Phys. B 17, 231 (1984) India
01794 E	A03: $Fe^{26+} + He$; $Fe^{26+} + H_2$; $Fe^{26+} + Ne$; $Fe^{26+} + Ar$ A06: $Fe^{26+} + He$; $Fe^{26+} + H_2$; $Fe^{26+} + Ne$; $Fe^{26+} + Ar$	400 MeV	Jolly, A.; Schmut, K.; Chetioui, A.; Rozet, J. P.; Stephan, C.; Lube, L. J. Total charge transfer cross sections for 400 MeV bare Fe^{26+} ions colliding with He, H_2, Ne and Ar targets. J. Phys. B 17, 235 (1984) France
01795 E	E03: $e + He^*$ E17: $e + He^*$	15–30 eV	Muller-Fiedler, R.; Schlemmer, P.; Jung, K.; Hotop, H.; Ehrhardt, H. Inelastic differential electron scattering from metastable $He(2^3S)$ atoms. J. Phys. B 17, 259 (1984) West Germany
01796 T	A03: $O^{7+} + He$	Undef	Bell, F. The alignment of hydrogen-like fast projectile ions after excitation by ion-atom collisions. J. Phys. B 17, L65 (1984) West Germany
01797 E	A03: $Ne^{2+} + Xe$ A06: $Ne^{2+} + Xe$ A07: $Ne^{2+} + Xe$	400 eV	Huber, B. A.; Kahlert, H. J. On the importance of metastable $Ne^{2+}(^1D_2)$ ions in charge-changing Ne^{2+}-Xe collisions. J. Phys. B 17, L69 (1984) West Germany
01798 T	E03: Undef	Undef	Rau, A.R.P. Direct excitation of states of high l by electron impact. J. Phys. B 17, L75 (1984) India
01799 E	E07: $e + Kr^*$; $e + Xe^*$	0–0.2 eV	Blagoev, A. B.; Mishonov, T. M.; Popov, T. K. Superelastic collisions between slow electrons and excited Kr and Xe atoms. Possible reaction mechanism for rare-gas atoms. J. Phys. B 17, 435 (1984) Bulgaria
01800 P	H06: $h\nu + F$	71–64 nm	Ruscic, B.; Greene, J. P.; Berkowitz, J. Photoionisation of atomic fluorine. J. Phys. B 17, L79 (1984) United States
01801 T	A16: $H^- + H^+$	1–100 keV	Fussen, D.; Claeys, W. Electron detachment in H^+-H^- collisions. J. Phys. B 17, L89 (1984) Belgium
01802 E	A06: $S^{15+} + He$; $S^{13+} + He$; $Kr^{7+} + He$; $Kr^{8+} + He$; $Kr^{9+} + He$; $Kr^{10+} + He$; $Kr^{11+} + He$; $Kr^{12+} + He$; $Kr^{13+} + He$; $Kr^{14+} + He$; $Kr^{15+} + He$; $Kr^{16+} + He$; $Kr^{17+} + He$; $Kr^{18+} + He$; $Kr^{19+} + He$; $Kr^{20+} + He$; $Kr^{21+} + He$; $Kr^{22+} + He$; $Kr^{23+} + He$; $Kr^{24+} + He$; $Kr^{25+} + He$	7–25 keV	Iwai, T.; Kaneko, Y.; Kimura, M.; Kobayashi, N.; Matsumoto, A.; Ohtani, S.; Okuno, K.; Takagi, S.; Tawara, H.; Tsurubuchi, S. The dependence on R(sub c) of cross sections for one-electron capture by S^{15+}, S^{13+} and Kr(sup q)+ (q = 7-25) ions from He atoms. J. Phys. B 17, L95 (1984) Japan
01803 E	H04: $h\nu + Ta$; $h\nu + Au$; $h\nu + Pb$; $h\nu + Bi$ H06: $h\nu + Ta$; $h\nu + Au$; $h\nu + Pb$; $h\nu + Bi$	17–60 keV	Garg, M. L.; Singh, J.; Verma, H. R.; Singh, N.; Mangal, P. C.; Trehan, P. N. Relative intensity measurements of L-shell x-rays for Ta, Au, Pb, and Bi in the energy range 17-60 keV. J. Phys. B 17, 577 (1984) India
01804 T	A03: $U + Ca$; $U + Sn$; $U + U$; $Pb + Sn$; $Pb + Xe$; $Pb + Pb$	3.6–8.5 MeV/amu	de Reus, T.M.J.; Reinhardt, J.; Muller, B.; Greiner, W.; Soff, G.; Muller, U. The influence of electron-electron interaction on inner-shell excitation processes in heavy-ion collisions. J. Phys. B 17, 615 (1984) West Germany
01805 T	A06: $H^+ + Ne$; $H^+ + C$	0.4–1.5 MeV	Rivarola, R. D.; Salin, A. K-shell one-electron capture in asymmetric collisions at intermediate and high energies. J. Phys. B 17, 659 (1984) Argentina
01806 P	A06: $He^{2+} + He$; $He^{2+} + Ne$; $He^{2+} + Ar$	0.5–3.0 MeV	Sase, M.; Kikuchi, A.; Yagishita, A.; Sakai, Y. Single- and double-electron capture cross sections for He^{2+} in He, Ne and Ar. J. Phys. B 17, 671 (1984) Japan
01807 P	H02: $h\nu + Ba$; $h\nu + Hg$	Undef	Keski-Rahkonen, O.; Materlik, G.; Sonntag, B.; Tulkki, J. The L-level x-ray absorption spectra of atomic barium and mercury. J. Phys. B 17, L121 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
31808 E	A36: $N^{7+} + He$; $N^{7+} + H_2$ A37: $N^{7+} + He$; $N^{7+} + H_2$	4.5 keV/amu	Bordenave-Montesquieu, A.; Benoit-Cattin, P.; Gleizes, A.; Marrakchi, A. I.; Dousson, S.; Hitz, D. Autoionisation of N^{5+}(nl n'l') with n = 2,3,4 and n' greater than or equal to n measured by electron spectrometry in collisions of N^{7+} with He and H_2, at 4.5 keV amu^{-1}. J. Phys. B 17, L127 (1984) France
31809 E	A16: $H^- + CO_2$	250-1000 eV	Tuan, V. N.; Esaulov, V.; Gauyacq, J. P. Charge exchange to a shape resonance in H^--CO_2 collisions: evidence of a non-Franck-Condon behaviour. J. Phys. B 17, L133 (1984) France
31810 E	A03: $Ar^{6+} + He$; $Ar^{6+} + Ar$ A36: $Ar^{6+} + He$; $Ar^{6+} + Ar$	100-1000 eV	Nielsen, E. H.; Andersen, L. H.; Barany, A.; Cederquist, H.; Hvelplund, P.; Knudsen, H.; MacAdam, K. B.; Sorensen, J. Energy-gain spectroscopy measurements of single-electron capture by Ar^{6+} in He and Ar. J. Phys. B 17, L139 (1984) Denmark
31811 E	E33: $e + C^{4+}$; $e + Mg^{10+}$	10^4-10^7 K	Tayal, S. S.; Kingston, A. E. Electron impact excitation of the ground state of C V and Mg XI to the 2^3S and 2^3P^o states. J. Phys. B 17, L145 (1984) United Kingdom
31812 E	A32: $Na^+ + Na$ A33: $Na^+ + Na$	25-57 eV	Von Busch, F.; Hormes, J.; Liesen, D. A study of low-energy differential ion-atom scattering: III. Na^+-Na. J. Phys. B 17, 763 (1984) West Germany
31813 E	A34: $H_2 + H_2$; $H_2^+ + H_2$; $H_3^+ + H_2$ A36: $H_2 + H_2$; $H_2^+ + H_2$; $H_3^+ + H_2$	2.5-100 keV	Williams, I. D.; Geddes, J.; Gilbody, H. B. Collisional destruction of fast H_2, H_2^+ and H_3^+ in H_2. J. Phys. B 17, 811 (1984) United Kingdom
31814 E	A07: $H^+ + Ar$; $H_2^+ + Ar$; $He^+ + Ar$	0.8-3 MeV	Berenyi, D.; Cserny, I.; Kadar, I.; Kover, A.; Ricz, S.; Sarkadi, L.; Varga, D.; Vegh, J. Ion-induced L_3-subshell alignment of argon. J. Phys. B 17, 829 (1984) Hungary
31815 T	A03: $He^{2+} + H$ A36: $He^{2+} + H$	19-50 keV/amu	Morrison, H. G.; Opik, U. Attempts to improve the accuracy, and results on He^{2+}-H collisions. J. Phys. B 17, 857 (1984) United Kingdom
31816 E	A36: $C^{4+} + CH_4$; $C^{4+} + C$; $C^{5+} + C$ A38: $C^{4+} + CH_4$; $C^{5+} + CH_4$; $C^{4+} + C$; $C^{5+} + C$ C36: $C^{4+} + C$; $C^{5+} + C$; $C^{6+} + C$	36 MeV	Woods, C. J.; Sofield, C. J.; Cowern, N.B.E.; Murrell, M.; Draper, J. Comparison of charge-changing cross sections in gaseous and solid targets. J. Phys. B 17, 867 (1984) United Kingdom
31817 E	E33: e + He; e + Ne; e + Ar; e + Kr; e + Xe E17: e + He; e + Ne; e + Ar; e + Kr; e + Xe	12-200 eV	Shpenik, O. B.; Zavilopulo, A. N.; Snegursky, A. V.; Fabrikant, I. I. Excitation of metastable levels of noble-gas atoms in crossed electron and gas dynamical atomic beams. J. Phys. B 17, 887 (1984) Soviet Union
31818 T	E33: $e + H_2^+$	0-1 Ry	Tennyson, J.; Noble, C. J.; Salvini, S. Low-energy e-H_2^+ collisions using the R-matrix method. J. Phys. B 17, 905 (1984) United Kingdom
31819 T	H06: $h\nu + Si^+$	75-54 nm	Taylor, K. T.; Zeippen, C. J.; Le Dourneuf, M. The photoionisation of the $Si^+(^2P^o)$ ground state: a combined application of the R-matrix and quantum defect theories. J. Phys. B 17, L157 (1984) United Kingdom
31820 T	A36: $H^+ + H$	10-50 MeV	Crothers, D.S.F.; McCann, J. F. A second-order continuum distorted-wave theory of charge transfer at high energy. J. Phys. B 17, L177 (1984) United Kingdom
31821 E	E35: $e + CO_2$ E17: $e + CO_2$	500-1000 eV	Iga, I.; Nogueira, J. C.; Mu-Tao, L. Elastic scattering of electrons from CO_2 in the intermediate energy range. J. Phys. B 17, L185 (1984) Brazil
31822 T	E72: e + Cs E03: e + Cs	0-3 eV	Scott, N. S.; Bartschat, K.; Burke, P. G.; Eissner, W. B.; Nagy, O. Low-energy scattering of electrons by caesium atoms. J. Phys. B 17, L191 (1984) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
01823 T	H06: $h\nu + Rb^*$; $h\nu + Sr^{+*}$	0-10 Ry	Aymar, M.; Robaux, O.; Wane, S. Central-field calculations of photoionisation cross sections of excited states of Rb and Sr^+ and analysis of photoionisation cross sections of excited alkali atoms using quantum defect theory. J. Phys. B 17, 993 (1984) France
01824 T	H06: $h\nu + H_2$	15-65 eV	Richards, J. A.; Larkins, F. P. Molecular photoionisation calculations with numerical continuum wavefunctions: application to the hydrogen molecule. J. Phys. B 17, 1015 (1984) Australia
01825 E	A03: Ne^+ + Ne	70-2000 eV	Montmagnon, J. L.; Gauyacq, J. P. Oscillatory total cross sections in the $(Ne-Ne)^+$ collision system: II. Optical study of direct excitation of five Ne $(2p^5 3p)$ levels between 70 eV and 2 keV. J. Phys. B 17, 1343 (1984) France
01826 T	A06: H^+ + Li	0.5-116 keV	Ermolaev, A. M. Charge transfer in collisions between protons and lithium atoms. J. Phys. B 17, 1369 (1984) United Kingdom
01827 T	A33: He^{2+} + Li A36: He^{2+} + Li	1.9-1600 keV	Ermolaev, A. M.; Bransden, B. H. Charge transfer in He^{2+} + Li collisions. J. Phys. B 17, 1383 (1984) United Kingdom
01828 T	B37: Rb^+ + Rb		Bivona, S.; Spagnolo, B.; Ferrante, G. Charge transfer in the presence of a magnetic field. J. Phys. B 17, 1093 (1984) Italy
01829 E	E32: e + Hg; e + Xe E17: e + Hg; e + Xe	18-360 eV	Mollenkamp, R.; Wubker, W.; Berger, O.; Jost, K.; Kessler, J. Elastic scattering of polarised electrons from mercury and xenon to obtain the complete information on the scattering process. J. Phys. B 17, 1137 (1984) West Germany
01830 T	E33: e + He^+	50-1000 eV	Gien, T. T. 1s-2s excitation of He^+ by electron impact in modified Glauber approximation. J. Phys. B 17, 1123 (1984) Canada
01831 E	A33: N^{5+} + He; N^{5+} + H_2 A36: N^{5+} + He; N^{5+} + H_2 A37: N^{5+} + He; N^{5+} + H_2	4.2 keV/amu	Bordenave-Montesquieu, A.; Benoit-Cattin, P.; Gleizes, A.; Marrakchi, A. I.; Dousson, S.; Hitz, D. Two-electron capture into autoionising configurations $N^{3+}(1snln'l')$ with n = 2,3,4 and n' greater than or equal to n, observed by electron spectroscopy in collisions of $N^{5+}(1s)$ with He and H_2, at 4.2 keV amu^{-1}. J. Phys. B 17, L223 (1984) France
01832 E	A06: H^+ + Cs; D + Cs A16: H^- + Cs C36: H^+ + Cs	400 eV	Anderson, L. W.; Kaplan, S. N.; Pyle, R. V.; Ruby, L.; Schlachter, A. S.; Stearns, J. W. Spin-dependent charge transfer in a polarised target. J. Phys. B 17, L229 (1984) United States
01833 T	E33: e + H	1.44-4 Ry	Collins, L. A.; Schneider, B. I. Electronic excitation of atoms and molecules by electron impact in a linear algebraic, separable potential approach. J. Phys. B 17, L235 (1984) United States
01834 T	B31: H		Forster, H.; Strupat, W.; Rosner, W.; Wunner, G.; Ruder, H.; Herold, H. Hydrogen atoms in arbitrary magnetic fields: II. Bound-bound transitions. J. Phys. B 17, 1301 (1984) West Germany
01835 T	H06: $h\nu$ + He	60-120 eV	Scott, P.; Burke, P. G. Analysis of the photoionisation of an atom in a ^1S(sup e) state leaving an ion in a $^2P^o$ state. Application to helium. J. Phys. B 17, 1321 (1984) United Kingdom
01836 E-T	A03: Kr + Kr; Kr + Xe A07: Kr + Kr; Kr + Xe	0.7-3.6 MeV	Shanker, R.; Wille, U.; Bilau, B.; Hippler, R.; McMurray, W. R.; Lutz, H. O. 4f sigma excitation in slow Kr-Kr and Kr-Xe collisions. J. Phys. B 17, 1353 (1984) West Germany
01837 E	A33: C^{4+} + H; C^{3+} + H A36: C^{4+} + H; C^{3+} + H	3.6-18 keV	McCullough, R. W.; Wilkie, F. G.; Gilbody, H. B. State-selective electron capture by slow C^{4+} and C^{3+} ions in atomic hydrogen. J. Phys. B 17, 1373 (1984) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
31E38 T	E03: e + O^{6+}	3.1-63x13^3 E	Tayal, S. S.; Kingston, A. E. Electron impact excitation of the ground state of O VII to the n = 2 and 3 states. J. Phys. B 17, 1383 (1984) United Kingdom
C1E39 E	E03: e + He; e + Be; e + Ar E05: e + He; e + Be; e + Ar	20-5000 eV	Grosswendt, B. Statistical fluctuations of the ionization yield of low-energy electrons in He, Be and Ar. J. Phys. B 17, 1391 (1984) West Germany
31E40 E	E05: e + Xe^+; e + Xe^{2+}; e + Xe^{3+}; e + Xe^{4+}	83-633 eV	Achenbach, C.; Muller, A.; Salzborn, E.; Becker, R. Single ionization of multiply charged xenon ions by electron impact. J. Phys. B 17, 1035 (1984) West Germany
31E41 E	E05: e + Xe^+; e + Xe^{2+}; e + Xe^{3+}; e + Xe^{4+}	83-733 eV	Muller, A.; Achenbach, C.; Salzborn, E.; Becker, R. Multiple ionization of multiply charged xenon ions by electron impact. J. Phys. B 17, 1027 (1984) West Germany
31E42 E	H30: hν + CO_2	16-18.7 eV	Bomberg, B.; Veenhuizen, H.; Mattsson, L.; Ockell, K. E.; Karlsson, L.; Siegbahn, K. High-resolution angle-resolved photoelectron spectrum of the B $^2\Sigma$ (out o)$^+$ state in CO_2^+. J. Phys. B 17, L259 (1984) Sweden
31E43 E	E03: e + He	53-83 eV	Keijers, J.F.M.; Van Eck, J.; Heideman, H.G.M. Orbital angular momentum transfer in the excitation of the 2^1P state of helium by electrons. J. Phys. B 17, L265 (1984) The Netherlands
31E44 E	E06: hν + Br	100-90 nm	Buscic, E.; Greene, J. P.; Berkowitz, J. Photoionization of atomic bromine. J. Phys. B 17, 1533 (1984) United Kingdom
31E45 T	E06: hν + H_2	3-4 keV	Levin, V. G.; Beudatchin, V. G.; Pavlitchenkov, A. V.; Smirnov, B. P. A study of the electron correlations in the H_2 molecule using the double photoionization process (gamma, 2e). J. Phys. B 17, 1525 (1984) Soviet Union
31E46 T	H05: hν + HeH^+ H06: hν + HeH^+	130-32 nm	Bose, D.; Barua, A. B. Photodissociation of HeH^+ molecular ion. J. Phys. B 17, 1537 (1984) India
31E47 E	A03: H + O; H + O_2; H^+ + O; H^+ + O_2 A06: H^+ + C; H^+ + C_2; H + C; H + O_2; H^+ + C_2; H^+ + C A08: H + O; H^+ + O A11: H^+ + C; H^+ + C_2 A16: H^- + C; H^- + C_2	2.5-25 keV	Williams, I. D., Geddes, J.; Gilbody, H. B. Electron capture, loss and excitation in collisions of H^0, H(1s), H(2s) and H^- in atomic oxygen. J. Phys. B 17, 1547 (1984) United Kingdom
31E48 E	A03: Li + He	5 keV	Beltzke, H. P.; Andersen, T. Complete determination of scattering amplitudes for a collisionally excited D state: Li(2s - 3d) excitation in Li-He collisions. J. Phys. B 17, 1559 (1984) Denmark
C1E49 T	A06: Fe^{20+} + Ar; Fe^{20+} + Kr; Fe^{20+} + Zr; Fe^{20+} + Ag; Fe^{20+} + Sn	400 MeV	Bohrer, K.; Chetioui, A.; Bozet, J. P.; Jolly, A.; Stephan, C. K-K transfer cross sections in near-symmetric Fe^{20+} ion-atom collisions at intermediate velocity. J. Phys. B 17, 1575 (1984) France
31E50 E	D12: H^+ + Sb; P^+ + Te; H^+ + Mo; H^+ + Ta; H^+ + W; H^+ + Pt; H^+ + Bi	1.5-3.8 MeV	Brzezinski, J.; Fajek, M.; Brzezinski, E.; Piasecka, J.; Csatyaski, G. M. Proton-induced L-shell x-ray production cross sections and their ratios. J. Phys. B 17, 1565 (1984) Poland
31E51 E	A11: Ne^{9+} + He; Ne^{9+} + H_2	113 MeV	Ishihara, T. Collisional quenching of 4p states of 110 MeV H-like Ne ions in gaseous targets. J. Phys. B 17, 1599 (1984) Japan
31E52 E	A39: H^+ + P^-	5-2300 eV	Szucs, S.; Berenera, R.; Teran, M.; Brouillard, F. Experimental study of the mutual neutralization of H^+ and H^- between 5 and 2300 eV. J. Phys. B 17, 1613 (1984) Belgium

Ref. No.	Reactants	Energy Range	Reference
31E53 T	A06: Li^{3+} + F; Li^{3+} + H^0	3.13-18 keV	Cosaubon, J. I.; Piacentini, R. D. Charge exchange by fully stripped lithium ions on metastable and ground-state hydrogen atoms at low energies. J. Phys. B 17, 1623 (1984) Argentina
31E54 E	A06: Li^0 + Li^+ A07: Li^0 + Li^+	53-240 keV	Datta, H. P.; Angel, G. C.; Dunn, K. F.; Gilbody, H. B. Charge transfer and ionisation in collisions between Li^0 ions. J. Phys. B 17, 1631 (1984) United Kingdom
31E55 T	E02: e + He; e + Xe E07: e + He; e + Xe	10-150 eV	Fritsche, L.; Noffke, J.; Gollisch, H. A new local exchange potential for low-energy electron scattering by atoms based on first principles. J. Phys. B 17, 1637 (1984) West Germany
31E56 T	E05: e + Ar	1233 eV	Bitrey, J.; Aron, K.; Morrison, I. The (e, 2e) spectrum of argon. J. Phys. B 17, 1655 (1984) Australia
31E57 E	A11: Rb^0 + He; Rb^0 + Ne; Rb^0 + Ar; Rb^0 + Kr; Rb^0 + Xe; Cs^0 + He; Cs^0 + Ne; Cs^0 + Ar; Cs^0 + Kr; Cs^0 + Xe A12: Rb^0 + He; Rb^0 + Ne; Rb^0 + Ar; Rb^0 + Kr; Rb^0 + Xe; Cs^0 + He; Cs^0 + Ne; Cs^0 + Ar; Cs^0 + Kr; Cs^0 + Xe	340 K	Lukaszewski, K.; Jachowska, I. Level-crossing study of depolarizing collisions in $6^2P_{3/2}$ state of rubidium and $7^2P_{3/2}$ state of cesium. Opt. Commun. 46, 85 (1983) Poland
31E58 T	A02: Ar + Ar A17: Ar + Ar	500-4000 m/s	Beson, E. A.; Van der Meijdenberg, C.J.N. On the direct inversion of total scattering cross sections in the glory region. Physica A 117, 139 (1983) The Netherlands
31E59 T	A02: Ar + Ar A17: Ar + Ar	4.5-40 km/s	Beson, E. A.; Bermann, R. H.; Van den Meijdenberg, C.J.N. On the direct inversion of total scattering cross sections beyond the glory region. Physica A 117, 163 (1983) The Netherlands
31E60 E-T	A03: Ne^0 + Ar; Ne^{7+} + Ar A07: Ne^0 + Ar; Ne^{7+} + Ar	233-733 keV	Shanker, R. Ar L-shell excitation in slow Ne + Ar collisions in terms of the statistical model. Physica B+C 123, 257 (1984) West Germany
31E61 E-T	B02: hν + Cr; hν + Mn; hν + Fe; hν + CO; hν + Ni; hν + Cu; hν + Zn; hν + Se; hν + Br; hν + Sr; hν + Mo; hν + Ag; hν + Cd; hν + In; hν + Sn; hν + Sb; hν + Te; hν + I; hν + Ba; hν + U; hν + Hg; hν + Pb; hν + Bi; hν + Th; hν + U	30-280 keV	Nageswara Rao, A. S.; Perumalle, A.; Krishna Rao, G. Photon cross section measurements in compounds and elements in the energy range 33-663 keV. Physica B+C 124, 96 (1984) India
31E62 E-T	A07: H^0 + C; H^0 + O; H^0 + Mg; H^0 + Al; H^0 + Fe; H^0 + CO; H^0 + Cu; H^0 + Zn	$10-2\times10^3$ keV	Shrivastava, S. K.; Kumar, A.; Roy, B. N. Proton impact K-shell ionisation of atoms in binary encounter approximation. Physica B+C 124, 127 (1984) India
31E63 E	C06: Si + Fe; Si + C; Si + Mg; Si + Al; Si + Ti; Si + Bi; Si + Cu; Si + Ag; Si + Sn; Si + Sm; Si + Yb; Si + Au; Si + Pb; Si + Pt; Si + Cr; Si + Fe; Si + Zr; Si + Mo; Si + KCl; Si + Ge; Si + Se; Si + Te; Cl + Be; Cl + C; Cl + Mg; Cl + Al; Cl + Ti; Cl + Ni; Cl + Cu; Cl + Ag; Cl + Sn; Cl + Sm; Cl + Yb; Cl + Au; Cl + Pb; Cl + Bi; Cl + Cr; Cl + Fe; Cl + Zr; Cl + Mo; Cl + KCl; Cl + Ge; Cl + Se; Cl + Te	33-113 MeV	Shima, K.; Ishihara, T.; Mono, T.; Miyoshi, T.; Umata, K.; Mikumo, T. Z oscillation of beam charge states of fast Si and Cl ions after passage through thin foils. Phys. Lett. A 98, 126 (1983) Japan
31E64 E	A23: He^0 + Ne; He^0 + Ar	43-333 MeV	Sheldon, J. B.; Hardy, K. A. Velocity dependent total scattering cross sections for metastable helium on He, Ne, and Ar. Phys. Lett. A 98, 332 (1983) United States
31E65 T	A06: He^{2+} + He	5-33 keV/amu	Stich, H.; Ludde, H. J.; Dreizler, R. M. Time-dependent Hartree-Fock description of one and two electron capture in collisions of $(He-He)^{4+}$. Phys. Lett. A 99, 41 (1983) West Germany

Ref. No.	Reactants	Energy Range	Reference
01E66 E-T	C02: U + C; U + Mg; U + Ti; U + V; U + Cu; U + Ni; U + Zr; U + Mo; U + Ag; U + Sn; U + Hf; U + Au; U + Pb; Pb + C; Pb + Mg; Pb + Ti; Pb + V; Pb + Cu; Pb + Ni; Pb + Zr; Pb + Mo; Pb + Ag; Pb + Sn; Pb + Hf; Pb + Au; Pb + Pb; U + C; U + Mg; U + Ti; U + V; U + Cu; U + Ni; U + Zr; U + Mo; U + Ag; U + Sn; U + Hf; U + Au; U + Pb; Xe + C; Xe + Mg; Xe + Ti; Xe + V; Xe + Cu; Xe + Ni; Xe + Zr; Xe + Mo; Xe + Ag; Xe + Sn; Xe + Hf; Xe + Au; Xe + Pb; Kr + C; Kr + Mg; Kr + Ti; Kr + V; Kr + Cu; Kr + Ni; Kr + Zr; Kr + Mo; Kr + Ag; Kr + Sn; Kr + Hf; Kr + Au; Kr + Pb	0.5-10 MeV/u	Geissel, H.; Laichter, Y.; Schneider, W.F.W.; Armbruster, P. Ca the effective charges from stopping powers of 0.5-10 MeV/u heavy ions. Phys. Lett. A 99, 77 (1983) West Germany
01E67 T	C32: e + Xe	15-4000 eV	Dayashankar; Unnikrishnan, K. Ionization-yield fluctuations in xenon due to energy degradation of electrons. Phys. Lett. A 95, 81 (1983) India
01E68 E	A07: Xe* + Xe* A1*: Xe* + Xe*	Thermal	Blagoev, A. B.; Nikiforov, T. N.; Popov, T. K. Interactions between metastable Xe atoms in the afterglow plasma. Phys. Lett. A 99, 221 (1983) Bulgaria
01E69 E	A15: D_2^* + Ar HC2: hν + D_2 + Ar	1-4 μm	McLeary, H. Collision-induced fluorescence in D_2: Ar mixtures. Phys. Lett. A 99, 363 (1983) Australia
01E70 T	E05: e + H E17: e + H	250 eV	Byron, F. W., Jr.; Joachain, C. J.; Piraux, B. Triple differential cross sections for the ionization of atomic hydrogen by fast electrons. Phys. Lett. A 99, 427 (1983) United States
01E71 E-T	A06: Mg* + Sr; Mg* + Ba	50-1000 eV	Panev, G. S. Total charge-transfer cross sections in collisions of Mg+ ions with Sr and Ba atoms. Phys. Lett. A 101, 91 (1984) Bulgaria
01E72 T	E03: e + Mg^{++}	Thermal	Ganas, P. S.; Gately, L. P. Excitation of Mg III by electron impact. Phys. Lett. A 101, 124 (1984) United States
01E73 T	E02: e + He*; e + He^{++} E08: e + He*; e + He^{++}	3-400 Ry	Banon, J.; Koenig, H.; Nguyen, H. Line broadening by electrons in hot plasmas. Phys. Lett. A 101, 134 (1984) France
01E74 E	A03: C^{3+} + Li; C^{4+} + Li; C^{5+} + Li; C^{4+} + Li; C^{5+} + Li A06: C^{3+} + Li; C^{4+} + Li; C^{5+} + Li; C^{4+} + Li; C^{5+} + Li	1.5-6.8 keV/u	Brezmik, A.; Winter, H.; Dijkkamp, D.; Boellaard, A.; de Haar, P. J.; Drentje, A. G. Absolute emission cross sections for detection of plasma impurity ions with active neutral lithium beam diagnostics. Phys. Lett. A 101, 139 (1984) Austria
01E75 E	A08: He + He; He + Ne; He + Ar; He + Kr; He + Xe; He^* + Be; He* + Ne; He^* + Ar; He* + Kr; He* + Xe	0.8-1.5 MeV	Nanamori, T.; Haruyama, Y.; Kido, T.; Fukuzawa, F. Single and double electron-loss cross sections of metastable- and ground-state neutral helium. Phys. Lett. A 101, 391 (1984) Japan
01E76 E	E03: e + Cd^+ E17: e + Cd^+	75 eV	Chutjian, A. Experimental electron energy-loss spectra and cross sections for the $5^2S - 5^2P^o$ transition in Cd II. Phys. Rev. A 29, 68 (1984) United States
01E77 E	A07: H^+ + He; H^+ + Ne; H^+ + Ar; H^+ + Kr; He^+ + He; He^+ + Ne; He^+ + Ar; He^+ + Kr	10-4000 keV	DuBois, R. D.; Toburen, L. H.; Rudd, M. E. Multiple ionization of rare gases by H^+ and He^+ impact. Phys. Rev. A 29, 70 (1984) United States
01E78 E	A03: He^+ + H_2; He^+ + D_2	1.5 keV	Goldberger, A. L.; Jaecks, D. H.; Natarajan, M.; Tornari, I. Isotope effects in inelastic 1.5-keV He^+-(H_2,D_2) collisions. Phys. Rev. A 29, 77 (1984) United States
01E79 E	A06: Ar^+ + He; Ar^+ + Ne	6-15 MeV	Newcomb, J.; Dillingham, T. R.; Hall, J.; Varghese, S. L.; Fegmiller, F. L.; Richard, P. Electron capture by metastable projectiles on He and Ne. Phys. Rev. A 29, 82 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
01888 T	E02: $e + H_2$	40 eV	Ritchie, B. Use of two-potential theory in electron-molecule scattering: application to wide-angle $e-H_2$ scattering at 40 eV. Phys. Rev. A 29, 92 (1984) United States
01889 T	E04: $e + H_2^*$ E09: $e + H_2^*$	0.2-5.0 eV	Ladenburg, J. P. Dissociative attachment to rovibrationally excited H_2. Phys. Rev. A 29, 136 (1984) United States
01882 E	E03: $e + Cd$	10-200 eV	Goto, T.; Hane, K.; Hattori, S. Emission cross sections for spectral lines transiting from the Cd II $4d^9 5s5p$ states and high-lying $4d^{10}nl$ states excited by single-electron impact on Cd atoms. Phys. Rev. A 29, 111 (1984) Japan
01883 E	D04: $He^+ + Mg$; $He^+ + Al$; $He^+ + Si$	3.0-5.0 keV	Zampieri, G.; Meier, F.; Baragiola, R. Formation of autoionizing states of He in collisions with surfaces. Phys. Rev. A 29, 116 (1984) Argentina
01884 E	H02: $h\nu + Ba$	39000-2222 A°	Kelly, J. F. Observations of induced transitions in the uv absorption spectrum of Ba. Phys. Rev. A 29, 184 (1984) United States
01885 T	H03: $h\nu + Al$; $h\nu + Pt$	0.15-8833 keV	Parker, J. C.; Pratt, R. H. Validity of common assumptions for anomalous scattering. Phys. Rev. A 29, 152 (1984) United States
01886 T	H07: $h\nu + H^-$	5-25 a.u.	Watanabe, S.; Fano, U.; Greene, C. H. Spin correlations in photodetachment. Phys. Rev. A 29, 177 (1984) France
01887 T	H06: $h\nu + H_2$	0.65-0.73 a.u.	Bai Dastidar, K.; Lambropoulos, P. Theory of two-photon autoionization of H_2. Phys. Rev. A 29, 181 (1984) United States
01888 E	H06: $h\nu + Ne$; $h\nu + Ar$	866-874 eV	Kotrin, P. H.; Southworth, S.; Truesdale, C. H.; Lindle, D. H.; Becker, U.; Shirley, D. A. Threshold measurements of the K-shell photoelectron satellites in Ne and Ar. Phys. Rev. A 29, 196 (1984) United States
01889 E	A03: $Na^* + Xe$ A11: $Na^* + Xe$	300 K	McIntire, J. P.; McMillian, G. H.; Smith, K. A.; Dunning, F. H.; Stebbings, R. F. State-changing in Na(ns,np)-Xe collisions. Phys. Rev. A 29, 361 (1984) United States
01890 T	H07: Undef		Shakeshaft, R. Electron scattering from a potential in a radiation field: II. Phys. Rev. A 29, 383 (1984) United States
01891 T	E03: $e + H_2$	0-10 eV	Feldt, A. N.; Morrison, M. A. Scaled adiabatic-nuclear-rotation theory for near-threshold rotational excitation in electron-molecule scattering. Phys. Rev. A 29, 401 (1984) United States
01892 T	E05: $e + He$	0-0.5 keV	Klar, H.; Jung, K.; Ehrhardt, H. Electron-impact ionization of helium by fast electrons at small momentum transfer: a quantum-defect analysis of experimental data. Phys. Rev. A 29, 435 (1984) West Germany
01893 T	A03: $O^{2+} + He$ A06: $C^{2+} + H$; $C^{2+} + He$	0-5 keV/amu	Bienstock, S.; Hail, T. G.; Dalgarno, A. Distorted-wave theory of heavy-particle collisions at intermediate energies. Phys. Rev. A 29, 503 (1984) United States
01894 T	E11: $e + Hg$	0-6 eV	Coulter, P. H.; Bian, S. H.; Ritchie, B. Polarization effects in one-photon free-free absorption. Phys. Rev. A 29, 569 (1984) United States
01895 E	A16: $H^- + He$; $H^- + Ne$; $H^- + Ar$	0.4-1.5 MeV	Macek, J.; Rosendez, M. G.; Duncan, M. H. Target dependence of doubly differential electron-detachment cross sections. Phys. Rev. A 29, 516 (1984) United States
01896 E	A02: $H^* + H$ A10: $H^* + H$	25-63 keV	Bille, E.; Faecher, J. L.; Redd, E.; Kvale, T. J.; Seely, E. G.; Blankenship, D. H.; Olson, R. E.; Park, J. T. Elastic differential cross sections for small-angle scattering of 25-, 40-, and 63-keV protons by atomic hydrogen. Phys. Rev. A 29, 521 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
01897 T	A06: H^+ + He; Li^{3+} + He; Be^{4+} + He; B^{5+} + He; C^{6+} + He	$1-10^3$ keV/amu	Suzuki, H.; Kajikawa, Y.; Toshima, N.; Ryufuku, H.; Watanabe, T. Electron-capture cross sections from He in collisions with bare nuclear ions. Phys. Rev. A 29, 525 (1984) Japan
01898 T	A33: He^{2+} + H; Li^{3+} + H; Be^{4+} + H; B^{5+} + H; C^{6+} + H A36: He^{2+} + H; Li^{3+} + H; Be^{4+} + H; B^{5+} + H; C^{6+} + H	$10^{-1}-10^2$ keV	Suzuki, H.; Toshima, N.; Watanabe, T.; Ryufuku, H. Exponential distorted-wave approximation for charge transfer in collisions of multicharged ions with atomic hydrogen. Phys. Rev. A 29, 529 (1984) Japan
01899 T	A31: Undef	Undef	Tomoda, T. Semiclassical approach to the theory of atomic excitation processes associated with heavy-ion collisions. Phys. Rev. A 29, 536 (1984) West Germany
01900 T	A16: Undef	Undef	Wang, T. S.; Delos, J. B. Electron detachment in negative-ion collisions: I. Time-dependent theory and models for a propagator. Phys. Rev. A 29, 542 (1984) United States
01901 T	A16: Undef	Undef	Wang, T. S.; Delos, J. B. Electron detachment in negative-ion collisions: II. The dynamical complex potential. Phys. Rev. A 29, 552 (1984) United States
01902 E	E33: e + Ba E05: e + Ba	50-120 eV	Wendt, H. H.; Karstensen, F. Absolute cross sections for excited Ba III states produced by single-electron impact from Ba I. Phys. Rev. A 29, 562 (1984) West Germany
01903 T	A33: H^+ + H A36: H^+ + H	1-30 keV	Winter, T. G.; Lin, C. D. Triple-center treatment of electron transfer and excitation in p-H collisions. Phys. Rev. A 29, 567 (1984) West Germany
01904 E	B31: H^*; He^* C07: H^+ + C; H_2^+ + C; He^+ + C; HeH^+ + C; Ne^+ + C; Si^{++} + C	C07: 0.5-125 MeV	Kanter, E. P.; Schneider, D.; Vager, Z.; Gemmell, D. S.; Zabransky, B. J.; Yuan-zhuang, G.; Arcuni, P.; Koch, P. M.; Mariani, D. R.; Van de Water, W. Ionization of fast foil-excited ion beams in electromagnetic fields. Phys. Rev. A 29, 583 (1984) United States
01905 T	A33: H_2 + He	77-292 K	Birnbaum, G.; Chu, S. I.; Dalgarno, A.; Frommhold, L.; Wright, E. L. Theory of collision-induced translation-rotation spectra: H_2-He. Phys. Rev. A 29, 595 (1984) United States
01906 T	A06: Undef A18: Undef	Undef	Shakeshaft, R.; Spruch, L. Angular-distribution peak at 60° in electron capture from a heavy atom by a fast light ion. Phys. Rev. A 29, 605 (1984) United States
01907 E	A33: H^+ + K; H^+ + Na A36: H^+ + K; H^+ + Na	0.5-2.5 keV	Berkowitz, J. K.; Zorn, J. C. Charge transfer into the metastable 2S level of hydrogen by protons colliding with K and Na. Phys. Rev. A 29, 611 (1984) United States
01908 E	A33: Rb^* + Rb	300 K	Parker, J. B.; Schuessler, H. A.; Hill, R. H., Jr.; Zollars, B. G. Fine-structure-changing collision cross sections within the low-lying n ^2D states of rubidium induced by ground-state rubidium atoms. Phys. Rev. A 29, 617 (1984) United States
01909 E	E03: e + H_2	15-350 eV	Ajello, J. M.; Shemansky, D.; Kwok, T. L.; Yung, Y. L. Studies of extreme-ultraviolet emission from Rydberg series of H_2 by electron impact. Phys. Rev. A 29, 636 (1984) United States
01910 E	B01: H		Chu, M. C.; Friedrich, H. Narrow near-threshold resonances of the hydrogen atom in strong magnetic fields. Phys. Rev. A 29, 675 (1984) United States
01911 T	E36: e + O^{5+}; e + Ar^{15+}; e + Fe^{23+}; e + Mo^{39+}	0.07-0.6 keV	McLaughlin, D. J.; Hahn, Y. Dielectronic-recombination rate coefficients for the lithium isoelectronic sequence. Phys. Rev. A 29, 712 (1984) United States
01912 E	A33: Li^* + Li; Li^* + He; Li^* + Ar	850-930 K	Dubreuil, B.; Chaleard, C. 4^2D - 4^2F excitation transfer in Li induced by collisions with Li, He, and Ar ground-state atoms. Phys. Rev. A 29, 958 (1984) France

Ref. No.	Reactants	Energy Range	Reference
31513 T	E35: e + He E37: e + He	20-337 eV	Lahmam-Bennani, A. Dimensional correction to the impulse approximation for high-energy binary (e, 2e) collisions in He. Phys. Rev. A 29, 962 (1984) France
31514 E	H36: hν + Mg	1833-1233 Å	Preses, J. M.; Burkhardt, C. E.; Garver, W. E.; Leventhal, J. J. Photoionization of magnesium near threshold. Phys. Rev. A 29, 985 (1984) United States
31515 E-T	H36: hν + Mg	Undef	Schonhense, G.; Heinzmann, U. Evidence of strong interchannel coupling in Mg 5d photoionization of "experimental" transition matrix elements. Phys. Rev. A 29, 987 (1984) West Germany
31516 E	A36: Kr^{q+} + Kr; Kr^{q+} + Xe A38: Kr^{q+} + Kr; Kr^{q+} + Xe	3.25-3.3 MeV	Antar, A. A.; Kessel, Q. C. Differential measurements of ionization and inelastic energy losses in 3.25-3.3-MeV collisions of Kr ions with Kr and Xe targets. Phys. Rev. A 29, 1272 (1984) United States
31517 E	A33: H^{0} + Mg A36: H^{0} + Mg A37: H^{0} + Mg	30-80 keV	LaBois, R. L.; Giese, J. P.; Cocke, C. L. Contribution of electron capture to 2p-vacancy production in p-Mg collisions. Phys. Rev. A 29, 1379 (1984) United States
31518 E	A36: H + Ba A38: H + Ba C06: H^{-} + Ba	1-25 keV	Swald, A. B.; Hiern, R. E.; Allen, J. S.; Andersson, L. L.; Lin, C. C. Charge-changing cross sections for 1-25-keV H(1s) incident on a Ba-vapor target. Phys. Rev. A 29, 1363 (1984) United States
31519 E	A36: Be^{2+} + He; Be^{3+} + He; Be^{4+} + He; Be^{5+} + He; Be^{6+} + He; Be^{7+} + He; Be^{8+} + He; Ar^{2+} + He; Ar^{3+} + He; Ar^{4+} + He; Ar^{5+} + He; Ar^{6+} + He; Ar^{7+} + He; Ar^{8+} + He; Kr^{2+} + He; Kr^{3+} + He; Kr^{4+} + He; Kr^{5+} + He; Kr^{6+} + He; Kr^{7+} + He; Kr^{8+} + He; Kr^{9+} + He; Kr^{10+} + He; Kr^{11+} + He; Kr^{12+} + He; Xe^{2+} + He; Xe^{3+} + He; Xe^{4+} + He; Xe^{5+} + He; Xe^{6+} + He; Xe^{7+} + He; Xe^{8+} + He; Xe^{9+} + He; Xe^{10+} + He; Xe^{11+} + He; Xe^{12+} + He; Xe^{13+} + He; Xe^{14+} + He A37: Be^{2+} + He; Be^{3+} + He; Be^{4+} + He; Be^{5+} + He; Be^{6+} + He; Be^{7+} + He; Be^{8+} + He; Ar^{2+} + He; Ar^{3+} + He; Ar^{4+} + He; Ar^{5+} + He; Ar^{6+} + He; Ar^{7+} + He; Ar^{8+} + He; Kr^{2+} + He; Kr^{3+} + He; Kr^{4+} + He; Kr^{5+} + He; Kr^{6+} + He; Kr^{7+} + He; Kr^{8+} + He; Kr^{9+} + He; Kr^{10+} + He; Kr^{11+} + He; Kr^{12+} + He; Xe^{2+} + He; Xe^{3+} + He; Xe^{4+} + He; Xe^{5+} + He; Xe^{6+} + He; Xe^{7+} + He; Xe^{8+} + He; Xe^{9+} + He; Xe^{10+} + He; Xe^{11+} + He; Xe^{12+} + He; Xe^{13+} + He; Xe^{14+} + He	0.5-14 keV	Justiniano, E.; Cocke, C. L.; Gray, T. J.; Dubois, R. D.; Cao, C.; Waggoner, B.; Schuch, R.; Scheidt-Bocking, H.; Ingwersen, P. Total cross sections for electron capture and transfer ionization by highly stripped, slow Be, Ar, Kr, and Xe projectiles on helium. Phys. Rev. A 29, 1288 (1984) United States
31520 T	C02: H^{0} + PERT C05: H^{0} + PERT	Undef	Peek, J. M.; Fitchford, L. C.; Shipsey, E. J. Method for predicting stopping and straggling mean excitation energies. Phys. Rev. A 29, 1256 (1984) United States
31521 E	C06: CH^{+} + C	3.25 MeV	Plesser, I.; Kanter, E. P.; Vager, Z. Post-foil interaction in the foil-induced dissociation of 3.25-MeV CH^{+}. Phys. Rev. A 29, 1101 (1984) United States
31522 T	E02: e + H_2; e + H_2 H03: hν + H_2; hν + H_2	Undef	Thakkar, A. J.; Tripathi, A. N.; Smith, V. H., Jr. Molecular x-ray- and electron-scattering intensities. Phys. Rev. A 29, 1108 (1984) Canada
31523 E	A33: H^{0} + H_2; F^{9+} + F_2 A36: H^{0} + H_2; F^{9+} + F_2	89 keV	Smize, H. J.; Lundeen, S. R.; Pipkin, F. M. Measurement of excited-state charge exchange reactions. Phys. Rev. A 29, 1114 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
31924 T	A73: F + H_2 A10: F + H_2 A18: F + H_2	0.35-0.3 eV	Ramons, B. R.; Klein, C. R.; Sack Salk, S. R. Variation of direct-process contribution with collision energy in reactive scattering. Phys. Rev. A 29, 1131 (1984) United States
31925 T	A33: F + H_2 A10: F + H_2 A18: F + H_2	0.35-0.3 eV	Sack Salk, S. R.; Ramons, R. R.; Klein, C. R. Role of angular momentum match in state-to-state reactive scattering and product rotational state distributions. Phys. Rev. A 29, 1135 (1984) United States
31926 T	A32: F^0 + Ti; F^0 + Cu A37: F^0 + Ti; F^0 + Cu	43-2333 keV	Sheth, C. V. Relativistic corrections in K-shell ionization cross sections. Phys. Rev. A 29, 1151 (1984) Zambia
31927 T	H34: Undef	Undef	Rice, P. T.; Eberly, J. H. Multiple-laser excitation of multilevel atoms. Phys. Rev. A 29, 1164 (1984) United States
31928 E	H36: 2hν + Na; 3hν + Na	Undef	Chmeorge, R.; Diedrich, F.; Leuchs, G.; Elliott, D. S.; Walther, H. Influence of the dynamic Stark effect on photoelectron angular distributions in multiphoton ionization. Phys. Rev. A 29, 1181 (1984) West Germany
31929 T	B07: Undef	Undef	Bhaley, M. R.; Light, J. C. Rotating-frame transformations: a new approximation for multiphoton absorption and dissociation in laser fields. Phys. Rev. A 29, 1188 (1984) United States
31930 E	A11: Ne^0 + Ne	333 K	Ermadenberger, J. R. Lifetimes and collision cross sections in the $2p^5 3s$ and $2p^5 3d$ states of Neon. Phys. Rev. A 29, 1208 (1984) United States
31931 T	H36: hν + H; hν + H_2^+	0-1.0 a.u.	Le Rouzo, H.; Raseev, G. Finite-volume variational method: first application to direct molecular photoionization. Phys. Rev. A 29, 1218 (1984) United States
31932 T	Z05: Undef H06: Undef	Undef	Roshas, P. A.; Lively, M. L. Photon- and electron-impact ionization and ejected-electron angular distributions from molecules including retardation effects: nonrelativistic theory. Phys. Rev. A 29, 1224 (1984) United States
31933 E	A06: F^{6+} + He; F^{7+} + He; F^{8+} + He; Ne^{7+} + He; Ne^{8+} + He; Ne^{9+} + He	6-9 keV	Tawara, H.; Iwai, T.; Kaneko, Y.; Kimura, M.; Kobayashi, N.; Matsumoto, A.; Ohtani, S.; Okuno, K.; Takagi, S.; Tsurubuchi, S. Energy-spectroscopic studies of electron-capture processes of low-energy, highly stripped F and Ne ions in collisions with Ne atoms. Phys. Rev. A 29, 1229 (1984) Japan
31934 T	A03: H^+ + H A06: H^+ + H	30-500 keV	Chen, F. T.; Lieber, M. Influence of the linear Stark effect on electron exchange in the eikonal calculations. Phys. Rev. A 29, 1233 (1984) United States
31935 T	A11: Na^0 + Xe A18: Na^0 + Xe	0.04-0.66 eV	DeVries, P. L. Calculation of total differential cross section: $Na(^2P)$ + Xe. Phys. Rev. A 29, 1235 (1984) United States
31936 T	E33: e + Li	3-2000 eV	Tayal, S. S.; Tripathi, A. N. Generalized oscillator strengths and excitation cross sections for forbidden transitions in lithium. Phys. Rev. A 29, 1238 (1984) India
01937 E	A16: F^- + He; F^- + Ne; F^- + Ar; F^- + Kr; F^- + Xe	25-125 keV	Bird, R.; Rahman, F. Double-electron detachment from F^- ions in rare-gas collisions. Phys. Rev. A 29, 1241 (1984) Canada
31938 E	E33: e + Fe^{7+}; e + Fe^{8+}; e + Fe^{16+}	102-16f eV	Wang, J. S.; Datla, R. U.; Grieb, H. R. Collisional-excitation-rate coefficients for iron ions Fe VIII, Fe IX, and Fe XI. Phys. Rev. A 29, 1255 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
01939 T	R06: $h\nu + Cs^0$	0-2.5 Ry	Beerman, A. L.; Bunch, S. T. Photoionization of the Cs 6d excited state. Phys. Rev. A 29, 1590 (1984) United States
31940 T	R36: $h\nu + H_2$; $h\nu + N_2$; $h\nu$ + NO; $h\nu + CO_2$	3.3-50 eV	Collins, L. A.; Schneider, B. I. Molecular photoionization in the linear algebraic approach: H_2, N_2, NO, and CO_2. Phys. Rev. A 29, 1695 (1984) United States
31941 E	F13: $e + H_2$	10-440 eV	Filippelli, A. R.; Chang, S.; Lin, C. C. Electron-impact excitation of the B $^1\Sigma(sub\ u)^+$ and $c^3_u\ ^1\Sigma(sub\ u)^+$ Rydberg states of H_2. Phys. Rev. A 29, 1739 (1984) United States
31942 E-T	Y06: $e + Xe^{++}$; $e + Xe^{3+}$; $e + Xe^{++}$; $e + Xe^{++}$; $e + Xe^{6+}$	23-2000 eV	Griffin, D. C.; Bottcher, C.; Pindzola, M. S.; Younger, S. M.; Gregory, D. C.; Crandall, D. H. Electron-impact ionization in the xenon isonuclear sequence. Phys. Rev. A 29, 1727 (1984) United States
31943 T	K32: $e + H_2$; $e + H_2$	3-10 eV	Kadial, M. T.; Burrows, B. H. Parameter-free model of the correlation-polarization potential for electron-molecule collisions. Phys. Rev. A 29, 1742 (1984) United States
01944 E-T	P05: $e + Ar^{++}$; $e + Kr^{++}$; $e + Xe^{++}$; $e + Xe^{++}$; $e + Xe^{2+}$; $e + Xe^{3+}$	50-1800 eV	Pindzola, M. S.; Griffin, D. C.; Bottcher, C.; Crandall, D. H.; Phaneuf, R. A.; Gregory, D. C. Electron-impact double ionization of rare-gas ions. Phys. Rev. A 29, 1749 (1984) United States
31945 T	C32: $H^+ + PERT$	3-1500 keV	Sabin, J. R.; Oddershede, J. Electronic stopping powers for low projectile velocities. Phys. Rev. A 29, 1755 (1984) Denmark
31946 E	C30: $F^{6+} + PERT$; $F^{9+} + PERT$	29-138 MeV	Shima, K.; Ishihara, T.; Aiyoshi, T.; Momoi, T.; Mikumo, T. Equilibrium charge states of swift F ions after passage through thin foils: projectile-velocity dependence and target-atomic-number dependence. Phys. Rev. A 29, 1763 (1984) Japan
01947 T	E03: Undef	Undef	Parker, G. A.; Hiller, T. H.; Mahgerefteh, M.; Golden, D. E. Theory of angular-correlation experiments in electron scattering, including fine structure. Phys. Rev. A 29, 1770 (1984) United States
01948 E	E02: $e + Ne$ E17: $e + Ne$ E19: $e + Ne$	5-100 eV	Register, D. F.; Trajmar, S. Differential, integral, and momentum-transfer cross sections for elastic electron scattering by neon: 5 to 100 eV. Phys. Rev. A 29, 1785 (1984) United States
31949 E	E03: $e + Ne$ E17: $e + Ne$	25-100 eV	Register, D. F.; Trajmar, S.; Steffensen, G.; Cartwright, D. C. Electron-impact-excitation cross sections for electronic levels in neon for incident energies between 25 and 100 eV. Phys. Rev. A 29, 1793 (1984) United States
31950 T	E03: $e + Ne$ E17: $e + Ne$	20-120 eV	Machado, L. E.; Leal, E. P.; Csanak, G. Electron-impact excitation of some low-lying levels of neon. Phys. Rev. A 29, 1811 (1984) United States
31951 E	C37: $H^+ + C$; $H_2^+ + C$; $H_3^+ + C$	2.315-1.1 MeV	Boudinet-Robinet, T.; Dumont, P. D. Population of 2p and 3p terms in hydrogen excited by H^+, H_2^+, and H_3^+ ions passing through thin carbon foils. Phys. Rev. A 29, 1825 (1984) Belgium
31952 E	A11: $Ag^0 + He$	333 K	Soltanolkotabi, M.; Gupta, B. Measurement of the collisional depolarization cross section of the silver $5^2P_{3/2}$ state by helium. Phys. Rev. A 29, 1832 (1984) United States
31953 T	C32: $H^+ + C$; $H^+ + Al$	50-200 keV	Jakas, M. M.; Lantschner, G. H.; Eckardt, J. C.; Ponce, V. H. Study on the angular dependence of the average energy loss for ions in solids. Phys. Rev. A 29, 1838 (1984) Argentina
01954 E	A01: $He^0 + He$	0.06-0.16 eV	Krenos, J. Electronic energy transfer in $He^*(2^1S) + He$ collisions: propensity for odd-J levels of $He^*(5s,5s',4d)$. Phys. Rev. A 29, 1844 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
01955 T	A03: He^+ + H	10-4000 keV	Singhal, R. P. Excitation of the projectile helium ion impacting on hydrogen. Phys. Rev. A 29, 1853 (1984) India
01956 T	R36: hν + NO	Undef	Smith, M. E.; Lucchese, R. R.; McKoy, V. Schwinger variational principle applied to long-range potentials. Phys. Rev. A 29, 1857 (1984) United States
01957 T	E02: e + He^-; e + Li; e + Be^+; e + B^{2+}	Undef	Davis, B. F.; Chung, K. T. Saddle-point complex-rotation method for the $(1s2s2s)^4S$ resonance in He^-, Li I, Be II, and B III. Phys. Rev. A 29, 1878 (1984) United States
01958 E	R36: hν + He	59-67 eV	Morgan, H. D.; Ederer, D. L. Photoionization cross section of helium for photon energies 59-67 eV: the (sp,2n +)$^1P^o$ Rydberg series of autoionizing resonances. Phys. Rev. A 29, 1901 (1984) United States
01959 E	A03: Ar^{16+} + Xe; Ar^{18+} + Xe; Ar^{17+} + Xe A36: Ar^{16+} + Xe; Ar^{18+} + Xe; Ar^{17+} + Xe A37: Ar^{16+} + Xe; Ar^{18+} + Xe; Ar^{17+} + Xe	160-180 MeV	Tanis, J. A.; Bernstein, E. M.; Stockli, M. P.; Graham, W. G.; Berkner, K. H.; Markevich, D. J.; McFarland, R. H.; Pyle, R. V.; Stearns, J. W.; Willis, J. L. Correlations between charge-changing interactions and projectile K Alpha x-ray emission in Ar + Xe collisions. Phys. Rev. A 29, 2232 (1984) United States
01960 T	E03: e + H_2	0.04-10 eV	Sur, S.; Ghosh, A. S. Rotational excitation of hydrogen molecules by electron and positron impact. Phys. Rev. A 29, 2236 (1984) India
01961 T	A36: B^{3+} + H	0.3-5000 eV	Bienstock, S.; Dalgarno, A.; Heil, T. G. Charge transfer of B^{3+} ions in collisions with atomic hydrogen. Phys. Rev. A 29, 2239 (1984) United States
01962 T	E02: e + H	0-9.5 eV	Christensen-Dalsgaard, B. L. Combined hyperspherical and close-coupling description of two-electron wave functions: application to e^--H elastic-scattering phase shifts. Phys. Rev. A 29, 2242 (1984) United States
01963 T	R06: hν + He; hν + Li^+	2-10 Ry	Daskhan, M.; Ghosh, A. S. Photoionization of He and Li^+. Phys. Rev. A 29, 2251 (1984) India
01964 T	A36: Undef	Undef	Spruch, L.; Shakeshaft, R. Simple heuristic derivation of some charge-transfer probabilities at asymptotically high incident velocities. Phys. Rev. A 29, 2283 (1984) United States
01965 T	E05: e + H	1-4 Ry	Callaway, J.; Oza, D. H. Total and ionization cross sections in a simplified model of electron-hydrogen scattering. Phys. Rev. A 29, 2416 (1984) United States
01966 T	R07: Undef	Undef	Engelking, P. C.; Herrick, D. R. Effects of rotational doubling on the anomalous photodetachment thresholds resulting from electron-dipole interaction. Phys. Rev. A 29, 2425 (1984) United States
01967 T	E05: e + He; e + Ne; e + Ar	100-6000 eV	Miller, J. H.; Manson, S. T. Differential cross sections for ionization of helium, neon, and argon by fast electrons. Phys. Rev. A 29, 2435 (1984) United States
01968 E	A07: H^+ + Cu; H^+ + Mo; H^+ + Ag; O^+ + Cu; O^+ + Zr; O^+ + Ag; O^+ + Pb	0.6-10 MeV	Morenzoni, E.; Anholt, R.; Andriamonje, S. A.; Meyerhof, W. E. Angular dependence of K-shell ionization in ion-atom collisions. Phys. Rev. A 29, 2442 (1984) United States
01969 T	A36: He^{2+} + H; He^{2+} + He; He^{2+} + Li; He^{2+} + Be; He^{2+} + B; He^{2+} + C; He^{2+} + Ne; He^{2+} + Na; He^{2+} + Mg; He^{2+} + Ar; He^{2+} + K; He^{2+} + Ca; He^{2+} + Cs; Li^{3+} + H; Li^{3+} + He; Li^{3+} + Li; Li^{3+} + Be; Li^{3+} + B; Li^{3+} + C; Li^{3+} + Ne; Li^{3+} + Na; Li^{3+} + Mg; Li^{3+} + Ar; Li^{3+} + K; Li^{3+} + Ca; Li^{3+} + Cs	10^7-10^8 cm/sec	Stollberg, M. T.; Lee, H. W. Charge transfer in low-energy collisions of He^{2+} and Li^{3+} with various neutral atoms. Phys. Rev. A 29, 2448 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
01570 E	A36: H^+ + Li; He^+ + Li; He^{2+} + Li	0.257-8.2 keV	Varghese, S. L.; Waggoner, W.; Cocke, C. L. Electron capture from lithium by protons and helium ions. Phys. Rev. A 29, 2453 (1984) United States
01571 E	A36: Ne^{2+} + Li; Ne^{3+} + Li; Ne^{4+} + Li; Ne^{5+} + Li; Ne^{6+} + Li; Ne^{7+} + Li; Ne^{8+} + Li; Ne^{9+} + Li; Ne^{10+} + Li; Ar^{2+} + Li; Ar^{3+} + Li; Ar^{4+} + Li; Ar^{5+} + Li; Ar^{6+} + Li; Ar^{7+} + Li; Ar^{8+} + Li; Ar^{9+} + Li; Ar^{10+} + Li; Kr^{2+} + Li; Kr^{3+} + Li; Kr^{4+} + Li; Kr^{5+} + Li; Kr^{6+} + Li; Kr^{7+} + Li; Kr^{8+} + Li; Kr^{9+} + Li; Kr^{10+} + Li; Xe^{2+} + Li; Xe^{3+} + Li; Xe^{4+} + Li; Xe^{5+} + Li; Xe^{6+} + Li; Xe^{7+} + Li; Xe^{8+} + Li; Xe^{9+} + Li; Xe^{10+} + Li	0.2-13 keV	Waggoner, W.; Cocke, C. L.; Varghese, S. L.; Stockli, M. Experimental cross sections for electron capture from lithium by slow, highly charged, rare-gas projectiles. Phys. Rev. A 29, 2457 (1984) United States
01572 E	A36: H^+ + H^*	0.01-10 eV	Janev, R. K.; Joachain, C. J.; Nedeljkovic, N. N. Resonant electron transfer in slow collisions of protons with Rydberg hydrogen atoms. Phys. Rev. A 29, 2463 (1984) United Kingdom
01573 T	B37: Sr^* + Ca		Yagisawa, H.; Yagisawa, K. New approach to the multistate problem and its application to the laser-induced transition process: $Sr(5s5p\,^1P^0)$ + $Ca(4s^2\,^1S)$ + h bar Omega - $Sr(5s^2\,^1S)$ + $Ca(4s^2\,^1S)$. Phys. Rev. A 29, 2475 (1984) Japan
01574 T	E02: e + N_2	0-8 eV	Berman, M.; Domcke, W. Projection-operator calculations for shape resonances: a new method based on the many-body optical-potential approach. Phys. Rev. A 29, 2485 (1984) West Germany
01575 T	E02: e + H_2 E03: e + H_2	0-10 eV	Gibson, T. L.; Morrison, M. A. Ab initio nonadiabatic polarization potentials for electron-molecule scattering: the e-H_2 system. Phys. Rev. A 29, 2497 (1984) United States
01576 T	A33: Na + He; F + Xe; F + H^+	0.14-14 eV	Lee, H. W.; George, T. F. Analytic solutions to two-state collision problems for the case of exponential coupling. Phys. Rev. A 29, 2539 (1984) United States
01577 T	E33: e + H_2 E17: e + H_2	0.04-13 eV	Morrison, M. A.; Feldt, A. N.; Austin, D. Adiabatic approximations for the nuclear excitation of molecules by low-energy electron impact: rotational excitation of H_2. Phys. Rev. A 29, 2518 (1984) United States
01578 E	H36: hν + Cs	Undef	Petite, G.; Fabre, F.; Agostini, P.; Crance, M.; Aymar, M. Nonresonant multiphoton ionization of cesium in strong fields: angular distributions and above-threshold ionization. Phys. Rev. A 29, 2677 (1984) France
01579 T	A03: He^+ + H_2 A18: He^+ + H_2	Undef	Seck Salk, S. H.; Emmons, R. W. Preferential angular momentum transfer in state-to-state reactive scattering. Phys. Rev. A 29, 2936 (1984) United States
01580 E	E36: e + Ca^+	1-10 eV	Williams, J. F. Dielectronic recombination for Ca^+ via 4s - 4p excitation. Phys. Rev. A 29, 2936 (1984) Australia
01581 E	A36: C^{4+} + He; C^{4+} + Ne; C^{4+} + Ar; C^{4+} + Kr; C^{5+} + He; C^{5+} + Ne; C^{5+} + Ar; C^{5+} + Kr; C^{6+} + He; C^{6+} + Ne; C^{6+} + Ar; C^{6+} + Kr; N^{5+} + He; N^{5+} + Ne; N^{5+} + Ar; N^{5+} + Kr; N^{6+} + He; N^{6+} + Ne; N^{6+} + Ar; N^{6+} + Kr; N^{7+} + He; N^{7+} + Ne; N^{7+} + Ar; N^{7+} + Kr; O^{6+} + He; O^{6+} + Ne; O^{6+} + Ar; O^{6+} + Kr; O^{7+} + He; O^{7+} + Ne; O^{7+} + Ar; O^{7+} + Kr; O^{8+} + He; O^{8+} + Ne; O^{8+} + Ar; O^{8+} + Kr; F^{7+} + He; F^{7+} + Ne; F^{7+} + Ar; F^{7+} + Kr; F^{8+} + He; F^{8+} + Ne; F^{8+} + Ar; F^{8+} + Kr; F^{9+} + He; F^{9+} + Ne; F^{9+} + Ar; F^{9+} + Kr A37: C^{4+} + He; C^{4+} + Ne; C^{4+} + Ar; C^{4+} + Kr; C^{5+} + He; C^{5+} + Ne; C^{5+} + Ar; C^{5+} + Kr; C^{6+} + He; C^{6+} + Ne; C^{6+} + Ar; C^{6+} + Kr; N^{5+} + He; N^{5+} + Ne; N^{5+} + Ar; N^{5+} + Kr; N^{6+} + He; N^{6+} + Ne; N^{6+} + Ar; N^{6+} + Kr; N^{7+} + He; N^{7+} + Ne; N^{7+} + Ar; N^{7+} + Kr;	0.25-3.66 MeV/amu	Dillingham, T. R.; Newcomb, J.; Hall, J.; Pepmiller, P. L.; Richard, P. Projectile K-Auger-electron production by bare, one-, and two-electron ions. Phys. Rev. A 29, 3029 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
	O^{6+} + He; O^{6+} + Ne; O^{6+} + Ar; O^{6+} + Kr; O^{7+} + Ne; O^{7+} + He; O^{7+} + Ar; O^{7+} + Kr; O^{8+} + He; O^{8+} + Ne; O^{8+} + Ar; O^{8+} + Kr; F^{7+} + He; F^{7+} + Ne; F^{7+} + Ar; F^{7+} + Kr; F^{8+} + He; F^{8+} + Ne; F^{8+} + Ar; F^{8+} + Kr; F^{9+} + He; F^{9+} + Ne; F^{9+} + Ar; F^{9+} + Kr		
01582 T	A36: Be^{2+} + H; Be^{3+} + H; B^{5+} + H; C^{6+} + H; B^{3+} + H; C^{4+} + H	0.1-80 keV/amu	Fritsch, W.; Lin, C. D. Atomic-orbital-expansion studies of electron transfer in bare-nucleus Z(Z = 2,4-6; -hydrogen-atom collisions. Phys. Rev. A 29, 3039 (1984) West Germany
01583 E	A36: Cs^{+} + Cs	53-113 keV	Stalder, K. G.; Becker, K. H.; Pyle, R. V. Measurements of inelastic collisions between Cs^{+} ions by a plasma-target technique. Phys. Rev. A 29, 3352 (1984) United States
01584 T	A33: Li^{+} + Na; Li + Na^{+} A36: Li^{+} + Na; Li + Na^{+} A18: Li^{+} + Na; Na^{+} + Li	3.1-5.3 keV	Suzuki, H.; Nakamura, H.; Ishigaro, K. Semiclassical scattering theory based on the dynamical-state representation: applications to the Li^{+} + Na and Li + Na^{+} collisions. Phys. Rev. A 29, 3363 (1984) Japan
01585 T	A37: H^{+} + H	9.5-15 keV	Winter, T. G.; Lin, C. D. Triple-center treatment of ionization in p-H collisions. Phys. Rev. A 29, 3071 (1984) United States
01586 T	E32: e + Ne; e + Ne; e + Ar E17: e + Ne; e + Ne; e + Ar	40-800 eV	Staszewska, G.; Schwenke, D. W.; Truhlar, D. G. Investigation of the shape of the imaginary part of the optical-model potential for electron scattering by rare gases. Phys. Rev. A 29, 3078 (1984) United States
01587 E-T	A33: Xe + Rb	75 C°	Happer, W.; Miron, E.; Schaefer, S.; Schreiber, D.; Van Wijngaarden, W. A.; Zeng, X. Polarization of the nuclear spins of noble-gas atoms by spin exchange with optically pumped alkali-metal atoms. Phys. Rev. A 29, 3092 (1984) United States
01588 T	A07: Undef	Undef	Becker, R. L.; Ford, A. L.; Reading, J. F. Multiple-vacancy production in the independent-Fermi-particle model. Phys. Rev. A 29, 3333 (1984) United States
01589 E	A36: D_2^{+} + Ar; D_2^{+} + H_2 A36: D_2^{+} + Ar; D_2^{+} + H_2 C36: D_2^{+} + Ar; D_2^{+} + H_2	333-633 keV	Abraham, S.; Bir, D.; Kosser, P. Correlations between channel probabilities in collisional dissociation of D_2^{+}. Phys. Rev. A 29, 3122 (1984) Israel
01590 T	E32: e + He E17: e + He	0.1-50 eV	Khan, P.; Datta, S. N.; Bhattacharyya, D.; Ghosh, A. S. Elastic e⁻-He scattering with the use of the model-potential method. Phys. Rev. A 29, 3125 (1984) India
01591 T	E32: e + H E17: e + H	0.05-1.0 keV	Khare, S. P.; Lata, K. Elastic scattering of intermediate-energy electrons and positrons by the hydrogen atom. Phys. Rev. A 29, 3137 (1984) India
01592 E	H36: hν + Cs^{+}	503 nm	Gilbert, S. L.; Boecker, H. C.; Wieman, C. E. Absolute measurement of the photoionization cross section of the excited 7S state of cesium. Phys. Rev. A 29, 3150 (1984) United States
01593 T	H36: 2hν + Sr; 3hν + Sr	17693-17853 cm^{-1}	Xie, T. S.; Lambropoulos, P. Multiphoton autoionization under strong laser radiation: three-photon autoionization of strontium as a test case. Phys. Rev. A 29, 3159 (1984) United States
01594 T	H36: hν + He; hν + Ar; hν + Kr; hν + Xe	3.5-8.3 a.u.	Parpia, F. A.; Johnson, W. R.; Radojevic, V. Application of the relativistic local-density approximation to photoionization of the outer shells of neon, argon, krypton, and xenon. Phys. Rev. A 29, 3173 (1984) United States
01595 T	A02: H^{+} + He A18: H^{+} + He	25-100 keV	Watanabe, T.; Ishihara, T. Elastic proton-helium scattering in the Glauber approximation. Phys. Rev. A 29, 3417 (1984) Japan

Ref. No.	Reactants	Energy Range	Reference
31596 E	C32: $H^+ + N_2$; $H^+ + O_2$; $H^+ + H_2O$	45-2500 keV	Ze, F. J.; Khandelwal, G. S.; Wilson, J. W. Low-energy proton stopping power of N_2, O_2, and water vapor, and deviations from Bragg's rule. Phys. Rev. A 29, 3419 (1984) United States
31597 T	B37: e + H E02: e + H E17: e + H	Undef	Mamitrishnan, K.; Prasad, N. A. Electron-hydrogen scattering in an intense laser field. Phys. Rev. A 29, 3023 (1984) India
31598 T	A37: $H^+ + Li^+$; $H^+ + C^+$; $H^+ + B^+$	3.1-3.8 MeV	McGuire, E. J. Proton ionization of Li^{++}, C^{++}, and B^{++}. Phys. Rev. A 29, 1429 (1984) United States
31599 T	H36: hν + Ba^+; hν + Sr^+; hν + Rb^+; hν + Cs^+	Undef	Pseznae, A. Z. Photoionization of excited atomic states: effects of the initial wave functions. Phys. Rev. A 29, 3431 (1984) United States
32333 E	E33: e + Zr	3-253 eV	F.chenev, A. B.; Smirnov, Y. M. Measurement of electron-impact excitation cross sections for zirconium atoms. J. Appl. Spectrosc. 39, 751 (1983) Soviet Union
02001 E	E03: e + Co	0-250 eV	Kolosov, P. A.; Smirnov, Y. M. Measurement of the electron-impact excitation cross sections of some quartet states of the cobalt atom. J. Appl. Spectrosc. 39, 883 (1983) Soviet Union
02002 E	H02: hν + O_2	210-230 nm	Deshin, V. E.; Zabelinskii, I. E.; Shatalov, O. P. Effective C_2 UV absorption cross sections over a wide temperature range. J. Appl. Spectrosc. 39, 1351 (1984) Soviet Union
02003 E-T	J04: Chemical changes K04: Chemical changes	Undef	Estra, I. P.; Kleinman, I. Chemisorption of oxygen on aluminum surfaces. J. Electron. Spectrosc. Relat. Phenom. 33, 175, (1984) United States
02004 P	J02: Branching ratio J03: Branching ratio	16-83 eV	Brion, C. E.; Thomson, J. P. Compilation of valence shell molecular photoelectron branching ratios as a function of energy. J. Electron. Spectrosc. Relat. Phenom. 33, 267 (1984) Canada
02005 E	J02: Oscillator strengths J03: Oscillator strengths	5-153 eV	Brion, C. E.; Thomson, J. P. Compilation of dipole oscillator strengths (cross sections) for the photoabsorption, photoionization and ionic fragmentation of molecules. J. Electron. Spectrosc. Relat. Phenom. 33, 301 (1984) Canada
02006 E	A12: O_2 + C_2; C_2 + O_2; N_2 + O_2; Air + O_2	240-293 K	Colmont, J. P.; Bonamenteuil, M. Measurements of N_2-, O_2-, and Air-broadened linewidths of ozone in the millimeter region: temperature dependence of the linewidths. J. Mol. Spectrosc. 104, 122 (1984) France
32037 E	C32: O^+ + Al; N^+ + Al	163-883 keV	Zalyshko, S. V. Stopping cross section of $^{14}N^+$ ions in aluminum with energies up to 30 keV/nucleon. Sov. At. Energy 55, 553 (1983) Soviet Union
32038 T	C32: e + C; e + Al; e + Cu C04: e + C; e + Al; e + Cu	1 MeV	Goiko, V. I.; Gorbachev, E. A.; Evstigneev, V. V. Absorption of energy from an intense electron beam by a solid. Sov. J. Plasma Phys. 9, 681 (1983) Soviet Union
32039 T	D18: H + Nb; H + V; H + Ta	Undef	Shirley, A. I.; Hall, C. K. Trapping of hydrogen by metallic substitutional impurities in niobium, vanadium, and tantalum. Acta Metall. 32, 85 (1984) United States
02010 T	D18: H + TiC + Fe	Undef	Lee, H. G.; Lee, J. Y. Hydrogen trapping by TiC particles in iron. Acta Metall. 32, 131 (1984) South Korea
32011 P	A14: HO^- + F_2; DO^- + F_2; HO^- + HD; DO^- + FF; HO^- + D_2O; DO^- + H_2O	299 K	Grabowski, J. J.; DePuy, C. H.; Bierbaum, V. M. Gas-phase hydrogen-deuterium exchange reactions of HO^- and DO^- with weakly acidic neutrals. J. Am. Chem. Soc. 105, 2567 (1983) United States

Ref. No.	Reactants	Energy Range	Reference
02012 E	A14: Fe^{+} + H_2	2-22 eV	Halle, L. F.; Klein, F. S.; Beauchamp, J. L. Properties and reactions of organometallic fragments in the gas phase. Ion beam studies of FeH^{+}. J. Am. Chem. Soc. 106, 2543 (1984) United States
02013 E	A11: N^{*} + O + N; N_2^{*} + O + N	Thermal	Lepage, J.; Bezin, A.; Paulmier, D. Adsorption and recombination of atomic nitrogen - consequences on the kinetics of adsorption of molecular nitrogen on tungsten. J. Chim. Phys. 80, 633 (1983) France
02014 E	D17: O_2 + Nb + Mo	1200 K	Baron, P.; Pesbous, B.; Facia, B.; Weber, R. Interactions of oxygen with niobium-molybdenum alloys at high temperature. J. Chim. Phys. 80, 795 (1983) France
02015 T	A06: H^{+} + H; He^{2+} + H	0.1-5.625 MeV/amu	Fujiwara, K.; Toshima, N. Close-coupling calculation of charge transfer cross sections at high energies. J. Phys. Soc. Jpn. 52, 4118 (1983) Japan
02016 E	A06: Ne^{2+} + He; Ne^{2+} + H_2; Ne^{3+} + He; Ne^{3+} + H_2; Ne^{4+} + He; Ne^{4+} + H_2; Ne^{5+} + He, Ne^{5+} + H_2	3-60 keV	Kusakabe, T.; Nagai, N.; Iwasaki, H.; Horiuchi, T.; Sakisaka, M. Charge transfer cross sections for slow Ne^{z-5+} ions on He and H_2. J. Phys. Soc. Jpn. 52, 4122 (1983) Japan
02017 T	A17: Li^{+} + He	Undef	Yoshida, J.; O-ohata, K. Collisions for Li^{+} + He system. I. Potential curves and non-adiabatic coupling matrix elements. J. Phys. Soc. Jpn. 53, 554 (1984) Japan
02018 E	A06: Kr^{2+} + He; Xe^{2+} + Ar	0.01-2 eV	Koizumi, T.; Okuno, K.; Kaneko, Y. Drift tube study of one-electron capture reactions between double-charged ions and rare gas atoms. J. Phys. Soc. Jpn. 53, 567 (1984) Japan
02019 E	A07: C^{+} + Be; N^{+} + Be; O^{+} + Be; Ne^{+} + Be	0.3-1.3 MeV	Gotoh, A.; Kawatsura, K.; Fujimoto, F.; Komaki, K.; Ozawa, K.; Terasawa, M. Single and double K-shell ionization cross sections of beryllium by C, N, O and Ne ion bombardments. J. Phys. Soc. Jpn. 53, 1321 (1984) Japan
02020 T	A18: He + H_2	Undef	Fuhrt, C. Investigation of time-dependent semiclassical methods for scattering calculations. Mol. Phys. 51, 281 (1984) East Germany
02021 T	A17: N + N	2.0-4.0x10^{3} K	Ling, M.S.H.; Rigby, M. Towards an intermolecular potential for nitrogen. Mol. Phys. 51, 855 (1984) United Kingdom
02022 T	D11: N_2^{*} + C	Thermal	Talbot, J.; Tildesley, D. J.; Steele, W. A. A molecular dynamics simulation of nitrogen adsorbed on graphite. Mol. Phys. 51, 1331 (1984) United Kingdom
02023 T	A04: H + H_2	1-15x10^{3} K	Izotov, Y. I. Collision-induced dissociation of molecular hydrogen in a rarefied gas. Sov. Astron. Lett. 9, 233 (1983) Soviet Union
02024 E-T	B31: Undef K01: Ionization; Excited States K33: Ionization		Delone, N. B.; Krainov, B. P.; Shepelyanskii, D. L. Highly-excited atoms in the electromagnetic field. Sov. Phys.-Usp. 26, 551 (1983) Soviet Union
02025 E	A12: Cs + He; Cs + Ne; Cs + Ar; Cs + Kr	300 K	Siegling, F.; Niemax, K. Low-pressure noble gas broadening of the Cs resonance lines. Z. Naturforsch. A 39, 447 (1984) West Germany
02026 E	A12: Cs + Ar; Cs + Kr	333 K	Siegling, F.; Niemax, K. High-pressure noble gas broadening of the Cs resonance lines. Z. Naturforsch. A 39, 455 (1984) West Germany
02027 T	B31: Undef		Friedmann, H.; Rabinovitch, A.; Thieberger, R. The influence of an electric field on a hydrogen atom confined to boxes of different shapes. Z. Phys. A 316, 1 (1984) Israel
02028 E	A03: $Si^{[illegible]}$ + Ne; $Si^{[illegible]}$ + Ne; $Si^{[illegible]}$ + Ne; $Si^{[illegible]}$ + Ne; $Si^{[illegible]}$ + Ne; $Si^{[illegible]}$ + Ne; $Si^{[illegible]}$ + Ne; $Si^{[illegible]}$ + Ne; $Si^{[illegible]}$ + Ne; $Br^{[illegible]}$ + Kr; $Si^{[illegible]}$ + Al; Ca + Ti; Br + Ni; Br + Rb;	8-156 MeV	Schuch, R.; Hoffmann, R.; Muller, K.; Wiens, F.; Schmidt-Bocking, H.; Specht, H. J. Systematic study of impact parameter dependent K-vacancy probabilities in near symmetric gas- and solid-target collisions systems. Z. Phys. A 316, 5 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
	Br + Y; Er + Ge; Er + Se A07: Si^{2+} + Be; Si^{3+} + Be; Si^{4+} + Be; Si^{5+} + Be; Si^{6+} + Be; Si^{7+} + Be; Si^{8+} + Be; Si^{9+} + Be; Si^{10+} + Be; Kr^{8+} + Kr; Kr^{9+} + Kr; Kr^{10+} + Kr; Kr^{11+} + Kr; Kr^{12+} + Kr; Kr^{13+} + Kr; Kr^{14+} + Kr; Kr^{15+} + Kr; Kr^{16+} + Kr; Kr^{17+} + Kr; Kr^{18+} + Kr; Kr^{19+} + Kr; Kr^{20+} + Kr; Kr^{21+} + Kr; Kr^{22+} + Kr; Kr^{23+} + Kr; Kr^{24+} + Kr; Kr^{25+} + Kr; Kr^{26+} + Kr; Kr^{27+} + Kr; Kr^{28+} + Kr; Si^{2+} + Al; Ca + Ti; Br + Ni; Er + Rh; Br + Y; Er + Ge; Er + Se A10: Si^{2+} + Be; Si^{3+} + Be; Si^{4+} + Be; Si^{5+} + Be; Si^{6+} + Be; Si^{7+} + Be; Si^{8+} + Be; Si^{9+} + Be; Si^{10+} + Be; Kr^{8+} + Kr; Kr^{9+} + Kr; Kr^{10+} + Kr; Kr^{11+} + Kr; Kr^{12+} + Kr; Kr^{13+} + Kr; Kr^{14+} + Kr; Kr^{15+} + Kr; Kr^{16+} + Kr; Kr^{17+} + Kr; Kr^{18+} + Kr; Kr^{19+} + Kr; Kr^{20+} + Kr; Kr^{21+} + Kr; Kr^{22+} + Kr; Kr^{23+} + Kr; Kr^{24+} + Kr; Kr^{25+} + Kr; Kr^{26+} + Kr; Kr^{27+} + Kr; Kr^{28+} + Kr; Si^{2+} + Al; Ca + Ti; Br + Ni; Er + Rh; Br + Y; Er + Ge; Er + Se		
32329 E	E33: e + Hg	4-13 eV	Koch, L.; Heindorff, T.; Reichert, E. Resonances in the electron impact excitation of metastable states of mercury. Z. Phys. A 316, 127 (1984) West Germany
C2C3C T	B01: Ca		Van Leeuwen, K.A.H.; Hogervorst, W. Stark effect, hyperfine structure and isotope shifts in highly excited states of Ba I and Ca I. Z. Phys. A 31t, 149 (1984) The Netherlands
32C31 T	A06: H^+ + Ar A10: H^+ + Ar	0.2-16 MeV	Jakubassa-Amundsen, D. H. On the effect of off-shell wavefunctions on K and L shell charge transfer in fast, asymmetric collisions. Z. Phys. A 316, 161 (1984) West Germany
32C32 E	B02: Sb + Ag	100 keV	Bofer, W. G.; Besocke, K.; Stritzker, B. A search for a thermal spike effect in sputtering. II. Temperature dependence of the yield for heavy atomic and molecular ion bombardment. Appl. Phys. [Germany] A 33, 83 (1983) West Germany
32333 E	D37: He^+ + Ni D10: He^+ + Ni	1-25 keV	Chen, C. K.; Eckstein, W.; Scherzer, B.M.U. Trapping and reflection coefficients for ^3He in Ni at oblique incidence. Appl. Phys. [Germany] A 31, 37 (1983) West Germany
32336 T	D36: Se^+ + Ar_2	50-200 keV	Nagy, I.; Laszlo, J.; Giber, J. Inelastic energy loss in solids. II. Calculation of the number of ejected electrons as the base of the expectation value of the inelastic energy loss. Appl. Phys. [Germany] A 31, 153 (1983) Hungary
32335 -	C02: e + Al; e + Si; e + Cu; e + Ag	1-10 keV	Valkealahti, S.; Nieminen, R. M. Monte-Carlo calculations of keV electron and positron slowing down in solids. Appl. Phys. [Germany] A 32, 95 (1983) Finland
32336 E-T	D13: T_2 + FeTi	673 K	Schlapbach, L.; Riesterer, T. The activation of FeTi for hydrogen absorption. Appl. Phys. [Germany] A 32, 185 (1983) Switzerland
32337 T	D32: H^+ + Ag; D^+ + Zr; He^+ + Zr D33: H^+ + Ag; D^+ + Zr; He^+ + Zr	3.3-15 keV	Falcone, G.; Oliva, A. Energy spectra of atoms sputtered by keV light-ion bombardment. Appl. Phys. [Germany] A 32, 231 (1983) Italy
32338 E	D12: Ar^+ + Ni	9.3 keV	Fedrys, R.; Gabla, L. Photon emission from sputtered nickel atoms as a function of target temperature near the curie point. Appl. Phys. [Germany] A 32, 235 (1983) Poland
32339 T	C02: He^+ + Ni; P^+ + Ni D37: He^+ + Ni; H^+ + Ni	1-10* keV	Hou, M.; Varelas, C. Surface channeling of swift light ion. Measurements and simulation. Appl. Phys. [Germany] A 33, 121 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
02340 T	D32: Xe⁺ + Ag	6–45 keV	Sigmund, P.; Szymonski, M. Temperature-dependent sputtering of metals and insulators. Appl. Phys. [Germany] A 33, 141 (1984) Denmark
02341 E	D32: Ne⁺ + Zr	8 keV	Berres, W.; Bay, H. L. The velocity distribution of sputtered Zr atoms for irradiation at normal and oblique angle of incidence. Appl. Phys. [Germany] A 33, 235 (1984) West Germany
02342 E	D37: D⁺ + C D18: D⁺ + C	3.0–10 keV	Chen, C. K.; Scherzer, B.M.U.; Eckstein, W. Trapping and reflection coefficients for deuterium in graphite at oblique incidence. Appl. Phys. [Germany] A 33, 265 (1984) West Germany
02343 T	D32: He + Ni; H + Ni; Ne + Ni; Ar + Ni	50–10⁵ eV	Biersack, J. P.; Eckstein, W. Sputtering studies with the Monte Carlo program TRIM.SP. Appl. Phys. [Germany] A 34, 73 (1984) West Germany
02344 E	A14: H + H_2O	Thermal	Kleinermanns, K.; Wolfrum, J. H + H_2O reaction dynamics: state distribution for the OH product. Appl. Phys. [Germany] B 34, 5 (1984) West Germany
02345 E	J31: Excitation; Ionization		Sokhi, R. S.; Crumpton, D. Experimental L-shell x-ray production and ionization cross sections for proton impact. At. Data Nucl. Data Tables 30, 49 (1984) United Kingdom
02346 T	J01: Energy loss; Stopping power J02: Energy loss; Stopping power		Sternheimer, R. M.; Berger, M. J.; Seltzer, S. M. Density effect for the ionization loss of charged particles in various substances. At. Data Nucl. Data Tables 30, 261 (1984) United States
02347 T	E32: Scattering		Morrison, M. A. The physics of low-energy electron-molecule collisions: a guide for the perplexed and the uninitiated. Aust. J. Phys. 36, 239 (1983) Australia
02348 E	E35: e + Sn; e + Gd	20–100 keV	Baxter, G. W.; Spicer, B. M. L-shell ionization of Sn and Gd by 20–100 keV electron impact. Aust. J. Phys. 36, 287 (1983) Australia
02349 E	E03: e + CO E19: e + CO	1–4 eV	Haddad, G. N.; Milloy, H. B. Cross sections for electron-carbon monoxide collisions in the range 1–4 eV. Aust. J. Phys. 36, 473 (1983) Australia
02350 T	E31: e + B²⁺	6–5000 eV	Ganas, P. S.; Aryafar, M.; Gately, L. F. Electron impact excitation cross sections for B III. Aust. J. Phys. 36, 659 (1983) United States
02351 T	E32: e + H E03: e + H E17: e + H	54 eV	McCarthy, I. E.; Stelbovics, A. T. Study of approximations for electron-atom direct reactions. Aust. J. Phys. 36, 665 (1983) Australia
02352 E	A36: Cs + O_2; Cs + NO A37: Cs + O_2; Cs + NO	30–3000 eV	Kleyn, A. W.; Los, J. Production of stable and autoionizing O_2^- and NO⁻ ions in Cs-O_2 and CsNO collisions. Chem. Phys. 83, 19 (1984) The Netherlands
02353 T	A17: He + H_2	Undef	Faidarova, I.; Vojtik, J. Diatomics-in-molecules model for Penning ionization in the He(2³S)-H_2 system. Chem. Phys. 83, 225 (1984) Czechoslovakia
02354 T	A06: H_2^+ + Hg	5 keV	Sidis, V.; de Bruijn, D. P. Theory of near-resonant charge exchange in atom-molecule collisions. dissociative NRCE in the H_2^+ + Hg collision. Chem. Phys. 85, 201 (1984) France
02355 T	A11: CO⁺ + He	100–800 K	Jolicard, G.; Billing, G. D. Semiclassical treatment of ro-vibrational relaxation in the large j limit. Application to CO + ⁴He collisions. Chem. Phys. 85, 253 (1984) France
02356 E	A02: Li⁺ + N_2	300–1200 eV	Belisin, A. F.; Bijnaendts Van Resandt, R. W.; Khromov, V. N.; Kleyn, A. W.; Los, J.; Leonas, V. B. Differential cross sections for Li⁺ scattering by N_2 molecules. Chem. Phys. 85, 341 (1984) The Netherlands

Ref. No.	Reactants	Energy Range	Reference
02057 T	D11: CO + Pt	0.14-8.0 eV	Billing, G. D. Inelastic scattering and chemisorption of CO on a Pt(111) surface. Chem. Phys. 86, 349 (1984) Denmark
02058 E	A14: $D + H_2^*$	300 K	Rozenshtein, V. B.; Gershenzon, Y. M.; Ivanov, A. V.; Kucheryavii, S. I. Experimental study of the D + H_2(v = 1) reaction. Chem. Phys. Lett. 105, 423 (1984) Soviet Union
02059 T	A14: $D + H_2^*$	0-0.7 eV	Abusalbi, N.; Kouri, D. J.; Shima, Y.; Baer, M. Integral and state-to-state cross sections for the reaction D + H_2(v sub i) → HD(v sub f) + H: a quantum mechanical study within the infinite order sudden approximation. Chem. Phys. Lett. 105, 472 (1984) United States
02060 E	A11: $H_2^* + H_2^*$	82 K	Teitelbaum, H. A rate constant for the V-V exchange in hydrogen. $2H_2$(v = 1) → H_2(v = 0) + H_2(v = 2). Chem. Phys. Lett. 106, 69 (1984) Canada
02061 E	A11: CO^{**} + He	94-298 K	Katayama, D. H.; Welsh, J. A. The effect of temperature on the collisional deactivation of electronically excited CO^+. Chem. Phys. Lett. 106, 74 (1984) United States
02062 E	A14: $OH^* + O_2$; OH^* + He; OH^* + Ar; $OH^* + H_2$; $OH^* + N_2$; $OH^* + CO_2$; $OH^* + H_2O$; $OH^* + D_2O$; $OH^* + CH_4$; $OH^* + CF_4$	300 K	Finlayson-Pitts, B. J.; Toohey, D. W.; Ezell, M. J. Relative rate constants for removal of vibrationally excited OH($X^2\pi$(sub i) sub v=9 by some small molecules at room temperature. Int. J. Chem. Kinet. 15, 151 (1983) United States
02063 T	A14: $O + CH_4$	400-1100 K	Michael, J. V.; Keil, D. G.; Klemm, R. B. Theoretical rate constant calculations for O(^{3}P) with saturated hydrocarbons. Int. J. Chem. Kinet. 15, 705 (1983) United States
02064 E	A14: H_2 + CN	2700-3500 K	Szekely, A.; Hanson, R. K.; Bowman, C. T. High-temperature determination of the rate coefficient for the reaction H_2 + CN → H + HCN. Int. J. Chem. Kinet. 15, 915 (1983) United States
02065 E	A02: He + Ne^+; He + Ar^+; He + Kr^+; He + Xe^+; Ne + Ne^+; Ar^+ + He; Ar^+ + Ne; Ar^+ + Kr; Ar^+ + Xe; Ar^+ + CO; Ar^+ + N_2; Ar^+ + Ar; Xe^+ + Xe; Kr^+ + Kr; Ne^+ + Ne	30-420 eV	Hamilton, P. A.; Kneustubb, F. F. Integral cross-section measurement for rare gas ion-atom collisions. Int. J. Mass Spectrom. Ion Phys. 157, 329 (1984) United Kingdom
02066 E	D13: hν + H_2 + W	Undef	Drachsel, W.; Nishigaki, S.; Ernst, N.; Block, J. H. Photon induced field desorption of hydrogen H^+, H_2^+, H_3^+ from tungsten. Int. J. Mass Spectrom. Ion Processes 46, 297 (1983) West Germany
02067 E	D13: hν + C + Ti; hν + O + Nb; hν + C + W; hν + CO + Ru; hν + H_2O + Ti	20-110 eV	Stockbauer, R.; Hanson, D. M.; Flodstrom, S. A.; Bertel, E.; Madey, T. E. Photon stimulated desorption of ions: a new probe of surface bonding and structure. Int. J. Mass Spectrom. Ion Processes 47, 51 (1983) United States
02068 E	A33: He^+ + Ar	1-4000 eV	Howorka, F.; Kuen, I.; Federer, B. Excited state formation in the interaction of mass resolved ion beams with molecular and atomic targets (1-4000 eV, 200-800 nm). Int. J. Mass Spectrom. Ion Processes 47, 151 (1983) Austria
02069 E	A02: Ar^{2+} + Xe A33: Ar^{2+} + Xe A36: Ar^{2+} + Xe	540 eV	Hamber, E. Y.; Hasted, J. B. Charge exchange reactions of Ar^{2+} in rare gas atoms. Int. J. Mass Spectrom. Ion Processes 47, 163 (1983) United Kingdom
02070 T	A36: $He^+ + N_2$	Undef	Gerard-Ain, M.; Govers, T. R.; Levy, B.; Millie, P. Theoretical study of the $He^+ + N_2$ → He + N_2^+ (C) reaction. Int. J. Mass Spectrom. Ion Processes 47, 167 (1983) France
02071 E	A11: $N_2^{**} + O_2$; N_2^{**} + NO	0.0-2.0 eV	Kobler, U.; Villinger, H.; Howorka, F.; Lindinger, W. Energy dependences of reactive and quenching collisions of N_2^+ (X, v c) with O_2 and NO. Int. J. Mass Spectrom. Ion Processes 47, 171 (1983) Austria

Ref. No.	Reactants	Energy Range	Reference
02C72 E	A06: $He^+ + H_2$; $He^+ + C_2$; $He^+ + CO$	3.35-15.3 eV	Villinger, H.; Petrell, J. H.; Richter, R.; Saxer, A.; Niccolini, S.; Lindinger, W. Energy dependences of the product distributions in ion-neutral reactions. Int. J. Mass Spectrom. Ion Processes 47, 175 (1983) Austria
02C73 E	E04: $e + H_2O$ E09: $e + H_2O$	5-70 eV	Inoue, H. Negative ion formation by attachment of electrons to radicals studied by ion cyclotron resonance spectrometry. Int. J. Mass Spectrom. Ion Processes 47, 259 (1983) Japan
02C74 E	K04: Surface ionization		Kawano, H.; Page, F. M. Experimental methods and techniques for negative-ion production by surface ionization. Part I. Fundamental aspects of surface ionization. Int. J. Mass Spectrom. Ion Processes 50, 1 (1983) United Kingdom
02C75 E	K04: Surface ionization		Kawano, H.; Hidaka, Y.; Page, F. M. Experimental methods and techniques for negative-ion production by surface ionization. Part II. Instrumentation and operation. Int. J. Mass Spectrom. Ion Processes 50, 35 (1983) United Kingdom
02C76 E	K04: Surface ionization		Kawano, H.; Hidaka, Y.; Suga, M.; Page, F. M. Experimental methods and techniques for negative-ion production by surface ionization. Part III. Compilation and criticism of experimental data on negative surface ionization. Int. J. Mass Spectrom. Ion Processes 50, 77 (1983) United Kingdom
02C77 T	K04: Desorption	Undef	Kreuzer, H. J. Desorption kinetics. Int. J. Mass Spectrom. Ion Processes 53, 273 (1983) Canada
02C78 E	A18: He + He	0.5-1.0 keV	Abraham, M. A.; Peterson, N. C. Differential cross-section measurement for He^0 - He^0 collisions. Int. J. Mass Spectrom. Ion Processes 54, 61 (1983) United States
02C79 E	E03: e + He	20-400 eV	Shaw, M.; Borge, M.J.G.; Campos, J. Experimental excitation cross sections by electron impact of $np^1[(1)/(2)]_c$ (n = 3,4,5) levels of He. J. Chem. Phys. 80, 1882 (1984) Spain
02C80 E	A14: $CO_2^+ + H$	0.06-0.18 eV	Tosi, P.; Iannotta, S.; Bassi, D.; Villinger, H.; Dobler, W.; Lindinger, W. The reaction of CO_2^+ with atomic hydrogen. J. Chem. Phys. 80, 1935 (1984) Italy
02C81 E	H06: $h\nu + CO$; $h\nu + CO_2$	160-680 eV	Truesdale, C. E.; Lindle, D. W.; Kobrin, P. H.; Becker, U. E.; Kerkhoff, H. G.; Heisann, P. A.; Ferrett, T. A.; Shirley, D. A. Core-level photoelectron and Auger shape-resonance phenomena in CO, CO_2, CF_4, and CCS. J. Chem. Phys. 80, 2319 (1984) United States
02C82 E	A06: $Ar^+ + H_2$	1.7-4.0 eV	Friedrich, E.; Trafton, W.; Rockwood, A.; Howard, S.; Petrell, J. H. A crossed beam study of the charge-transfer reaction of Ar^+ with H_2 at low and intermediate energies. J. Chem. Phys. 80, 2537 (1984) United States
02C83 E	A14: $C^+ + H_2$	0.1-2.5 eV	Irwin, K. H.; Armentrout, P. B. Threshold behavior of endothermic reactions: $C^+(^2P) + H_2 \rightarrow CH^+ + H$. J. Chem. Phys. 80, 2978 (1984) United States
02C84 T	A14: $F + D_2$	3.34-3.23 eV	Atabalbi, M.; Shoemaker, C. L.; Kouri, D. J.; Jellinek, J.; Baer, M. Quantum mechanical treatment of the $F + E_2 \rightarrow DF + E$ reaction. J. Chem. Phys. 80, 3210 (1984) United States
02C85 T	A14: $O + H_2$	300-900 K	Broida, M.; Persky, A. Quasiclassical trajectory study of the reaction $O(^3P) + H_2 \rightarrow OH + H$. The effects of the location of the potential energy barrier, vibrational excitation and isotopic substitution on the dynamics. J. Chem. Phys. 80, 3687 (1984) Israel
02C86 T	A17: O_2	Unde	Takada, T.; Prasad, K. P. Tests of using large valence spaces in quasidegenerate many-body perturbation theory: calculations of C_2 potential curves. J. Chem. Phys. 80, 3656 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02087 E	A14: H + D_2	1.3 eV	Marinero, E. E.; Rettner, C. T.; Zare, R. N. H + H_2 reaction dynamics. Determination of the product state distributions at a collision energy of 1.3 eV. J. Chem. Phys. 80, 4142 (1984) United States
02088 T	A06: O^{2+} + He	0.338-8.1 eV	Butler, S. E.; Heil, T. G.; Dalgarno, A. Charge transfer of O^{++} in helium at thermal energies. J. Chem. Phys. 80, 4986 (1984) United States
02089 T	A17: He + Be	Undef	Jordan, K. D.; Siska, P. E. Potential energy curves for the A $^1\Sigma_u^+$ and $C^1\Sigma_g^+$ states of Be_2 obtained by combining scattering, spectroscopy and ab initio theory. J. Chem. Phys. 80, 5027 (1984) United States
02090 T	A17: Mg + Be	Undef	Pouilly, B.; Langsfield, A. B.; Yarkony, D. R. On the Mg(^{3}P)-Be(^{1}S) interaction using SA-MCSCF/ICF-CI wave functions. J. Chem. Phys. 80, 5089 (1984) United States
02091 T	A14: H_2^+ + He	1-4 eV	Joseph, T.; Sathyamurthy, N. Three-dimensional quasiclassical trajectory study of the reaction He + H_2^+ - HeH$^+$ + H on an accurate ab initio potential-energy surface. J. Chem. Phys. 80, 5332 (1984) India
02092 T	A17: H_2 + CO	Undef	Schinke, R.; Meyer, W.; Buck, U.; Bierkesen, G.H.F. A new rigid-rotor H_2-CO potential energy surface from accurate ab initio calculations and rotationally inelastic scattering data. J. Chem. Phys. 80, 5518 (1984) West Germany
02093 T	A17: H_2 + He A18: H_2 + He	27 meV	McCourt, F.R.W.; Fuchs, R. R.; Thakkar, A. J. A comparison of the predictions of various model H_2-He potential energy surfaces with experiment. J. Chem. Phys. 80, 5561 (1984) Canada
02094 E-T	A02: D_2 + Ar A17: D_2 + Ar	85 meV	Buck, U.; Meyer, H.; LeRoy, R. J. Determining the anisotropic interaction potential of D_2Ar from rotationally inelastic cross sections. J. Chem. Phys. 80, 5589 (1984) West Germany
02095 T	A07: H^+ + H_2O; H^+ + CH_4 A18: H^+ + H_2O; H^+ + CH_4	3.5-8.2 keV	Wilson, R. E.; Miller, J. H.; Tolburn, L. R.; Hanson, S. T. Differential cross sections for ionization of methane, ammonia, and water vapor by high velocity ions. J. Chem. Phys. 80, 5631 (1984) United States
02096 E	A11: N_2^+ + O_2; N_2^+ + NO	300 K	Ferguson, E. E.; Adams, N. G.; Smith, D.; Alge, E. Rate coefficients at 300 K for the vibrational energy transfer reactions from N_2(v = 1) to O_2^+(v = 0) and NO$^+$(v = 0). J. Chem. Phys. 80, 6045 (1984) United States
02097 T	A02: He + H_2^+ A03: He + H_2^+ A11: He + H_2^+ A18: He + H_2^+	64 meV	Metropoulos, A. Rotational energy transfer in the He-H_2 collision system. J. Phys. Chem. 88, 1 (1984) United States
02098 T	A03: H + CO; D + CO	1-4 eV	Geiger, L. C.; Schatz, G. C. A quasiclassical trajectory study of collisional excitation in H + CO. J. Phys. Chem. 88, 214 (1984) United States
02099 E	A11: He^+ + H_2; He^+ + O_2	298 K	Fehsenfeld, F. C.; Ferguson, E. E. Bimolecular and 'three-body' quenching of ground (1s) neon atoms by H_2 and O_2. J. Phys. Chem. 88, 1559 (1984) United States
02100 T	A17: H_2 + He	Undef	Fuchs, R. R.; McCourt, F.R.W.; Thakkar, A. J.; Grein, F. Two new anisotropic potential energy surfaces for H_2-He: the use of Hartree-Fock SCF calculations and a combining rule for anisotropic long-range dispersion coefficients. J. Phys. Chem. 88, 2036 (1984) Canada
02101 E	A06: U^{42+} + Cu; U^{92+} + Ta; U^{91+} + Cu; U^{91+} + Ta A07: U^{91+} + Cu; U^{91+} + Ta; U^{90+} + Cu; U^{90+} + Ta C06: U + Cu; U + Ta	437-962 MeV	Gould, H.; Greiner, L.; Lindstrom, P.; Symons, T.J.M.; Crawford, H. Electron capture by U^{91+} and U^{92+} and ionization of U^{90+} and U^{91+}. Phys. Rev. Lett. 52, 180 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02102 E	A06: Au^{69+} + Be A37: Au^{69+} + Be	23 MeV	Andersen, L. H.; Frost, H.; Hvelplund, P.; Knudsen, H.; Katz, S. Correlated two-electron effects in highly charged ion-atom collisions: transfer ionization and transfer excitation in 23-MeV Au^{69+} + Be collisions. Phys. Rev. Lett. 52, 518 (1984) Denmark
02103 E	A38: H + Be A18: H + He	135 keV	Becktech, H.; Vidal, R.; Focke, P.; Demirovsky, I. E.; Gonzalez Lepera, F. Double-differential distributions produced by collisional electron loss into the continuum for the H⁺-Be system. Phys. Rev. Lett. 52, 621 (1984) Argentina
02104 E	A18: CH_3^+ + H_2	13 K	Barlow, S. E.; Dunn, G. H.; Schauer, M. Radiative association of CH_3^+ and H_2 at 13 K. Phys. Rev. Lett. 52, 902 (1984) United States
02105 T	B31: H		Bergeman, T. Relativistically enhanced ionization rates in Stark-effect level crossings in hydrogen. Phys. Rev. Lett. 52, 1685 (1984) United States
02106 E	A36: O^+ + B; CO^+ + B A18: O^+ + B_2; CC^+ + H_2; CH^+ + B; CH^+ + H_2	3.36 eV	Federer, W.; Villinger, H.; Howorka, F.; Lindinger, W.; Tosi, P.; Bassi, D.; Ferguson, E. Reaction of O^+, CC^+, and CH^+ ions with atomic hydrogen. Phys. Rev. Lett. 52, 2064 (1984) Austria
02107 E	A36: H^+ + He; H^+ + Ar; H^+ + Kr; He^+ + He; He^+ + Ar; He^+ + Kr A37: H^+ + He; H^+ + Ar; H^+ + Kr; He^+ + He; He^+ + Ar; He^+ + Kr	15-100 keV	LuBois, H. F. Electron production in collisions between light ions and rare gases: the importance of the charge-transfer and direct-ionization channels. Phys. Rev. Lett. 52, 2348 (1984) United States
02108 E	D03: Ar^+ + MnO; Ar^+ + CaO; Ar^+ + MgO; Ar^+ + BeO; Ar^+ + CoO; Ar^+ + NiO; Ar^+ + CuO; Ar^+ + ZnO; Ar^+ + FeO; Ar^+ + B_2O_3; Ar^+ + Al_2C_3; Ar^+ + Cr_2O_3; Ar^+ + Fe_2C_3; Ar^+ + Y_2C_3; Ar^+ + In_2O_3; Ar^+ + La_2C_3; Ar^+ + Pr_2O_3; Ar^+ + Sm_2C_3; Ar^+ + Bi_2O_3; Ar^+ + SiO_2; Ar^+ + TiO_2; Ar^+ + MnO_2; Ar^+ + GeO_2; Ar^+ + ZeO_2; Ar^+ + SnO_2; Ar^+ + CeO_2	10 keV	Okajima, Y. Formation of NO^+ ions from metal oxides bombarded by 10-keV Ar^+ ions. J. Appl. Phys. 55, 230 (1984) Japan
02109 E-T	D07: H^+ + WO_3; H^+ + W; H^+ + Ti; H^+ + TiC; H^+ + TiE_2; H^+ + Au; H^+ + C	2-50 keV	Morita, K.; Tabata, T. Reflection of keV light ions from compound targets. J. Appl. Phys. 55, 776 (1984) Japan
02110 E-T	D02: Ar^+ + Si; Kr^+ + Si; H^+ + Si; H_2^+ + Si	0.1-15 keV	Zalm, P. C.; Beckers, L. J. Consequences of sputtering with molecular ions. J. Appl. Phys. 56, 223 (1984) The Netherlands
02111 E	A08: Cl^- + He; Cl^- + Ne; Cl^- + Ar; Cl^- + Kr; Cl^- + Xe A16: Cl^- + He; Cl^- + Ne; Cl^- + Ar; Cl^- + Kr; Cl^- + Xe	12.5-122.5 keV	Bird, B.; Bakman, F. Positive ion production in single collisions of Cl^- with rare gas atoms. Can. J. Phys. 62, 544 (1984) Canada
02112 T	A17: Li + F; Li + Cl; Li + Br; Li + I; Na + F; Na + Cl; Na + Br; Na + I; K + F; K + Cl; K + Br; K + I; Rb + F; Rb + Cl; Rb + Br; Rb + I; Cs + F; Cs + Cl; Cs + Br; Cs + I	Undef	Szymanski, J. E.; Matthew, J.A.D. Empirical interionic potentials for alkali halide molecules. Can. J. Phys. 62, 303 (1984) United Kingdom
02113 E-T	D05: hν + Y; hν + Gd; hν + Dy; hν + Er H02: hν + Y; hν + Gd; hν + Dy; hν + Er	31-185 keV	Lingam, S. C.; Babu, K. S.; Reddy, D.V.K. Total and photoelectric cross sections in some rare-earth elements. Can. J. Phys. 62, 688 (1984) India
02114 E-T	K04: Surfaces		Sasaso, H.; Lundqvist, B. I. Surface reaction dynamics. Comments At. Mol. Phys. 14, 229 (1984) Sweden
02115 E-T	K01: Excitation; Ionization		Bille, U.; Hippler, R. Mechanisms for L-shell and M-shell vacancy production in slow ion-atom collisions. Comments At. Mol. Phys. 14, 255 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
02116 E	D08: $Li^0 + H + Cs$	25-433 eV	Geerlings, J.J.C.; Los, J. Li^0 formation by scattering Li^+ ions from oxidated Si(111). Phys. Lett. A 132, 238 (1988) The Netherlands
02117 T	A06: $C^0 + H$; $C^0 + He$; $C^{2+} + H$; $C^{2+} + He$; $C^{3+} + H$; $C^{3+} + He$; $C^{4+} + H$; $C^{4+} + He$; $C^{5+} + H$; $C^{5+} + He$; $C^{6+} + H$; $C^{6+} + He$; $B^0 + H$; $B^0 + He$; $B^{2+} + H$; $B^{2+} + He$; $B^{3+} + H$; $B^{3+} + He$; $B^{4+} + H$; $B^{4+} + He$; $B^{5+} + H$; $B^{5+} + He$; $B^{6+} + H$; $B^{6+} + He$; $O^0 + H$; $O^0 + He$; $O^{2+} + H$; $C^{2+} + He$; $O^{3+} + H$; $O^{3+} + He$; $O^{4+} + H$; $C^{4+} + He$; $O^{5+} + H$; $O^{5+} + He$; $O^{6+} + H$; $C^{6+} + He$; $O^{7+} + H$; $O^{7+} + He$; $O^{8+} + H$; $C^{8+} + He$ A07: $C^0 + H$; $C^0 + He$; $C^{2+} + H$; $C^{2+} + He$; $C^{3+} + H$; $C^{3+} + He$; $C^{4+} + H$; $C^{4+} + He$; $C^{5+} + H$; $C^{5+} + He$; $C^{6+} + H$; $C^{6+} + He$; $B^0 + H$; $B^0 + He$; $B^{2+} + H$; $B^{2+} + He$; $B^{3+} + H$; $B^{3+} + He$; $B^{4+} + H$; $B^{4+} + He$; $B^{5+} + H$; $B^{5+} + He$; $O^0 + H$; $O^0 + He$; $O^{2+} + H$; $C^{2+} + He$; $O^{3+} + H$; $O^{3+} + He$; $O^{4+} + H$; $C^{4+} + He$; $O^{5+} + H$; $O^{5+} + He$; $O^{6+} + H$; $C^{6+} + He$; $O^{7+} + H$; $O^{7+} + He$; $O^{8+} + H$; $C^{8+} + He$	53-133 keV/amu	Janev, R. K.; McDowell, M.R.C. Electron removal from H and He atoms in collisions with C(sup q)+, N(sup q)+ and O(sup q)+ ions. Phys. Lett. A 132, 405 (1988) United Kingdom
02118 T	A23: Undef C02: Undef	Undef	Sayasov, Y. S. Swift ion energy losses in dense plasmas. J. Phys. [Orsay] Colloq. 44, C8-1 (1983) West Germany
02119 E-T	C02: $B^0 + Al$; $B^0 + Al$-Plasma; $H^0 + Au$; $H^0 + Au$-Plasma	1-100 keV	Mehlhorn, T. A.; Peek, J. M.; McGuire, E. J.; Olsen, J. N.; Young, F. C. Current status of calculations and measurements of ion stopping power in ICF plasmas. J. Phys. [Orsay] Colloq. 44, C8-39 (1983) United States
02120 T	C02: $He^{2+} + Au$	0.03-3.15 MeV	Deutsch, C.; Maynard, G.; Minoo, H. Ions stopping in dense and hot matter. J. Phys. [Orsay] Colloq. 44, C8-67 (1983) France
02121 T	A07: $H^0 + Al$ A08: $C + Li$; $Al + C$; $C + Be$; $U + Be$; $Cu + CH_2$ C02: $D^0 + CF_2$; $Al + C$; $Al + Li$; $C + C$; $C + Li$ C06: $C + Li$; $Al + C$; $C + Be$; $U + Be$; $Cu + CH_2$ D12: $H^0 + Al$	1-50 MeV	Nardi, E.; Zinamon, Z. Plasma effects in ion beam target interaction. J. Phys. [Orsay] Colloq. 44, C8-93 (1983) Israel
02122 E-T	C06: $C^{6+} + C$	3 MeV/amu	Covern, N.E.B. Effective charge of energetic heavy ions in gases, solids and plasmas. J. Phys. [Orsay] Colloq. 44, C8-107 (1983) United Kingdom
02123 T	C02: $D^0 + CD_2$	1 MeV	Nardi, E.; Zinamon, Z. Diagnostic techniques for intense particle beam-target interaction using K sub Alpha radiation. J. Phys. [Orsay] Colloq. 44, C8-167 (1983) Israel
02124 E	D12: $e + Au$; $e + Cu$; $e + Al$	4-13 keV	Sewell, D. B.; Hall, I. L.; Love, G.; Partridge, J. E.; Scott, V. D. X-ray studies related to coating thickness measurements. J. Phys. [Orsay] Colloq. 45, C2-33 (1984) United Kingdom
02125 E-T	D12: $e + Al$; $e + Si$; $e + Pb$; $e + Au$; $e + Ir$	6-36 keV	Pyklehost, S. L. An evaluation of x-ray loss due to electron backscatter. J. Phys. [Orsay] Colloq. 45, C2-61 (1984) United States
02126 E-T	A07: $Kr^0 + Kr$; $Be^0 + Be$; $O^0 + C_4$ A12: $Kr^0 + Kr$; $Be^0 + Be$ A17: $Kr^0 + Kr$; $Be^0 + Be$	5-50 keV	Afrosimov, V. V.; Beskhi, G. G.; Tseraev, M. B.; Shergin, A. P. Auger spectroscopy of quasimolecules. Sov. Phys.-JETP 57, 263 (1983) Soviet Union

Ref. No.	Reactants	Energy Range	Reference
02127 E	E05: e + Yb E16: e + Yb	8-500 eV	Kazakov, S. M.; Khristoforov, O. V. Electron spectroscopy of autoionizing states of ytterbium. Sov. Phys.-JETP 57, 253 (1983) Soviet Union
02128 T	B01: H		Braun, P. A. On the theory of the quadratic Zeeman effect for the highly excited states of the hydrogen atom. Sov. Phys.-JETP 57, 492 (1983) Soviet Union
02129 T	B01: H		Alekseev, A. I.; Basharov, A. M.; Beloborodov, V. N. Quantum beats of the coherent radiation emitted by atoms in a magnetic field. Sov. Phys.-JETP 57, 747 (1983) Soviet Union
02130 T	B07: Undef E11: Undef	Undef	Krainov, V. P.; Roshchupkin, S. P. Bremsstrahlung of a slow electron at a Coulomb center in an external electromagnetic field. Sov. Phys.-JETP 57, 754 (1983) Soviet Union
02131 E-T	A33: He+ + Hg A36: He+ + Hg A37: He+ + Hg	Undef	Ostrovsky, V. N. Charge exchange involving ion excitation. Sov. Phys.-JETP 57, 766 (1983) Soviet Union
02132 T	B01: H		Turbiner, A. V. A hydrogen atom in weak electric and magnetic fields. Sov. Phys.-JETP 57, 770 (1983) Soviet Union
02133 T	C02: H+ + Be; H+ + Al	10^{8}-10^{9} cm/sec	Yakovlev, D. G.; Kotel'nikov, S. S. Ion stopping in a degenerate electron gas. Sov. Phys.-JETP 57, 781 (1983) Soviet Union
02134 E-T	A11: H* + He	0.03-0.3 eV	Lebedev, V. S.; Marchenko, V. S. Transitions between highly excited states of an atom when a neutral particle moves near its core. Sov. Phys.-JETP 57, 946 (1983) Soviet Union
02135 E	A37: He* + He*; Ne* + Ne* A38: He* + He*; Ne* + Ne*	14-16 eV	Devdariani, A. Z.; Demidov, V. I.; Kolokolov, N. B.; Rebrov, V. I. Electron spectra from slow collisions of excited noble gas atoms. Sov. Phys.-JETP 57, 563 (1983) Soviet Union
02136 E-T	A36: He + He; He + N_2; He + Ne; He + Ar; He+ + He; He+ + N_2; He+ + Ne; He+ + Ar; He^{2+} + He; He^{2+} + N_2; He^{2+} + Ne; He^{2+} + Ar; He+ + PERT; He^{2+} + PERT A38: He + He; He + N_2; He + Ne; He + Ar; He+ + He; He+ + N_2; He+ + Ne; He+ + Ar	0.8-2x10^{8} cm/sec	Dmitriev, I. S.; Vorob'ev, N. F.; Konovalova, Z. M.; Nikolaev, V. S.; Novozhilova, V. N. Loss and capture of electrons by fast ions and atoms of helium in various media. Sov. Phys.-JETP 57, 1157 (1983) Soviet Union
02137 E-T	A16: H- + He	1-6 eV	Devdariani, A. Z. Detachment of electrons from negative ions in slow collisions with atoms. Sov. Phys.-JETP 57, 1175 (1983) Soviet Union
02138 E	A18: H + CH_2	300 K	Bohland, T.; Temps, F. Direct determination of the rate constant for the reaction CH_2 + H → CH + H_2. Ber. Bunsenges. Phys. Chem. 88, 459 (1984) West Germany
02139 T	E05: e + Zn; e + Cd	5-100 eV	Ta Van, T. The plasma parameters of the positive column helium-metallic vapour lasers: I. The semi-empirical formula of the electron-impact ionization cross-section for the zinc and cadmium atoms. Rev. Phys. Appl. (Paris) 19, 403 (1984) France
02140 E	D11: Rb + Cs	Thermal	Zhiglinskii, A. G.; Izmailov, A. N.; Kuchinskii, V. V.; Presnukhina, I. P.; Sukhomlinov, V. S. Spectral probe determination of metal-atom condensation coefficients in a plasma. Sov. Phys. J. 26, 647 (1983) Soviet Union
02141 E	E02: e + He; e + Ar; e [illegible]	1-10 eV	Sokolov, V. F.; Sokolova, Y. A.; Khalimullina, V. D. Frequency of collisions between electrons and gas and vapor atoms and molecules. Sov. Phys. J. 26, 869 (1983) Soviet Union

Ref. No.	Reactants	Energy Range	Reference
02142 T	E33: $e + S^{2+}$	Undef	Bo, Y. K.; Henry, R.J.W. Oscillator strengths and collision strengths for S III. Astrophys. J., Part 1 282, 816 (1984) United States
02143 T	E36: $h\nu + Al^{+}$; $h\nu + Si^{2+}$; $h\nu + S^{3+}$	Undef	Butler, K.; Mendoza, C.; Zeippen, C. J. Oscillator strengths and photoionization cross-sections for positive ions in the magnesium isoelectronic sequence. Mem. Mot. R. Astron. Soc. 239, 303 (1984) United Kingdom
02144 T	A33: $Ar + H_2$	333-768 K	Pavlov, V. A.; Dubrovskaya, I. N.; Mukhametzyanov, R. E. Cross sections and rate constants of rotational excitation for the Ar-h_2 system. High Temp. 21, 633 (1983) Soviet Union
02145 T	A17: $K^{+} + H_2$; $K^{+} + O_2$; $K^{+} + N_2$; $K^{+} + CO_2$; $K^{+} + CO$; $K^{+} + NO$; $K^{+} + H_2O$; $K^{+} + OH$; $O^{-} + H_2$; $O^{-} + O_2$; $O^{-} + N_2$; $O^{-} + CO_2$; $O^{-} + CO$; $O^{-} + NO$; $O^{-} + H_2O$; $C^{-} + OH$; $OH^{-} + H_2$; $OH^{-} + O_2$; $OH^{-} + N_2$; $OH^{-} + CO_2$; $OH^{-} + CO$; $CH^{-} + NO$; $OH^{-} + H_2O$; $CH^{-} + CH$	300-4000 K	Nazieva, R. R.; Polishchuk, A. Y. Collision integrals for ions and electrons with neutral particles in the combustion products of coals. High Temp. 21, 666 (1983) Soviet Union
02146 T	E32: $e + He$	200 eV	Bratha, C.N.C.; Desai, N. S. e--He elastic scattering in the two-potential BBCB approximation. Indian J. Pure Appl. Phys. 21, 733 (1983) India
02147 E	A03: $Rb^{*} + CO$ A11: $Rb^{*} + CO$	293 K	Fatitjean, I.; Gounand, F.; Fournier, P. R. Depopulation of rubidium Rydberg states of CO molecules: an experimental and theoretical study. Phys. Rev. A 30, 71 (1984) Mexico
02148 E	C32: $H^{+} + Be$; $H^{+} + Al$; $H^{+} + Cu$; $H^{+} + Ag$; $H^{+} + Ta$	7 MeV	Ishiwari, R.; Shiosi, N.; Sakamoto, R. Geometrical effect on the measurement of stopping powers: angle-dependent energy loss of 7-MeV protons in Be, Al, Cu, Ag, and Ta. Phys. Rev. A 30, 82 (1984) Japan
02149 E-T	A06: $H^{+} + H_2$; $H^{+} + He$ A18: $H^{+} + H_2$; $H^{+} + He$	2.82-7.8 MeV	McGuire, J. H.; Stockli, M.; Cocke, C. L.; Horsdal-Pedersen, E.; Sil, N. C. Study of the Thomas peak in electron capture. Phys. Rev. A 30, 89 (1984) United States
02150 T	E32: $e + N_2$	0.02-0.2 Ry	Schneider, B. I.; Collins, L. A. Comparative study of low-energy $^{2}\Pi(sub\ g)^{+}$ and $^{2}\pi(sub\ g)$ scattering in molecular nitrogen. Phys. Rev. A 30, 95 (1984) United States
02151 T	E33: $e + Ca^{18+}$	1.25×10^{3} K	Pradhan, A. K. Resonance and intermediate-coupling effects in electron scattering with highly charged ions. III. Ca^{18+}. Phys. Rev. A 30, 103 (1984) India
02152 E	A03: $F^{2+} + He$; $F^{2+} + He$; $F^{3+} + He$; $F^{3+} + He$; $F^{4+} + He$; $F^{4+} + He$; $F^{5+} + He$; $F^{5+} + He$; $F^{6+} + He$; $F^{6+} + He$; $F^{7+} + He$; $F^{8+} + He$ A30: $F^{2+} + He$; $F^{2+} + He$; $F^{3+} + He$; $F^{3+} + He$; $F^{4+} + He$; $F^{4+} + He$; $F^{5+} + He$; $F^{5+} + He$; $F^{6+} + He$; $F^{6+} + He$; $F^{7+} + He$; $F^{8+} + He$	6-15 MeV	Newcomb, J.; Dillingham, T. R.; Hall, J.; Varghese, S. L.; Fegeiller, F. L.; Richard, P. Charge-state dependence of fluorine-projectile K Auger-electron production. Phys. Rev. A 30, 126 (1984) United States
02153 E	A33: $Rb^{*} + N_2$; $Rb^{*} + Ne$; $Rb^{*} + He$; $Rb^{*} + Ar$; $Rb^{*} + Kr$; $Rb^{*} + Xe$; $Rb^{*} + Rb$ A11: $Rb^{*} + N_2$; $Rb^{*} + Ne$; $Rb^{*} + He$; $Rb^{*} + Ar$; $Rb^{*} + Kr$; $Rb^{*} + Xe$; $Rb^{*} + Rb$	380 K	Supronowicz, J.; Atkinson, J. B.; Krause, L. Fine-structure mixing in $7^{2}D$ and $6^{2}D$ Rb atoms, induced in collisions with ground-state atoms and molecules. Phys. Rev. A 30, 112 (1984) Canada
02154 T	E32: $e + N_2$ E33: $e + N_2$ E35: $e + N_2$ E17: $e + N_2$	40-100 eV	Bhattacharyya, P. K.; Syamal, D. K. Eikonal amplitude for electron-molecule collisions with effective coupled potential: an application to N_2. Phys. Rev. A 30, 126 (1984) India

Ref. No.	Reactants	Energy Range	Reference
32155 E	C36: $C + H_2$; $C + He$; $C^+ + H_2$; $C^+ + He$; $C^{2+} + H_2$; $C^{2+} + He$; $C^{3+} + He$; $H + H_2$; $H + O_2$; $H + He$; $L + Ar$; $H^+ + H_2$; $H^+ + O_2$; $H^+ + He$; $H^+ + Ar$; $H^{2+} + H_2$; $H^{2+} + O_2$; $H^{2+} + He$; $H^{2+} + Ar$; $H^{3+} + H_2$; $H^{3+} + C_2$; $H^{3+} + He$; $H^{3+} + Ar$; $O + H_2$; $O + O_2$; $O + Ar$; $C^+ + H_2$; $O^+ + O_2$; $O^+ + Ar$; $He + H_2$; $He + He$; $He^+ + H_2$; $He^+ + He$; $He^{2+} + H_2$; $He^{2+} + He$; $He^{3+} + H_2$; $He^{3+} + He$	0.5-1.0 MeV	Beron, M.; Eckner, R. Charge-exchange processes in close atomic collisions. Phys. Rev. A 30, 132 (1984) Israel
32156 T	D36: Undef	Undef	Bosanac, S. D. Analysis of coalescent resonances in atom-surface scattering. Phys. Rev. A 30, 142 (1984) Yugoslavia
32157 T	D36: Undef	Undef	Bosanac, S. D. Coalescent resonances in atom-surface collisions. Phys. Rev. A 30, 148 (1984) Yugoslavia
32158 T	E32: Undef	Undef	Bosanac, S. D. Time-delay analysis of zero-angular-momentum resonances. Phys. Rev. A 30, 153 (1984) Yugoslavia
32159 T	B31: Undef		Fiordilino, E.; Wittlemas, M. H. Forces on atoms in a standing-wave laser field. Phys. Rev. A 30, 177 (1984) United States
C2160 T	H06: Undef	Undef	Rosenberg, I. Final-state interactions in multiphoton-ionization theory. Phys. Rev. A 30, 265 (1984) United States
02161 T	H06: $h\nu + Hg$; $h\nu + H$; $h\nu + O$; $h\nu + Ba$; $h\nu + Rn$; $h\nu + Fm$	0-200 eV	Tambe, B. R.; Manson, S. T. Photoionization of 5d and 4f subshells of high-Z elements. Phys. Rev. A 30, 256 (1984) United States
32162 E	H36: $h\nu + Na^*$	Undef	Fillet, F.; Van Linden van den Heuvell, H.; Smith, W. W.; Kachru, R.; Tran, N. B.; Gallagher, T. F. Microwave ionization of Na Rydberg atoms. Phys. Rev. A 30, 280 (1984) United States
32163 T	E36: $e + Ar^{7+}$; $e + Fe^{19+}$; $e + Mo^{31+}$	26-223 Ry	LaGattuta, K. J.; Hahn, Y. Dielectronic recombination rates for ions of sodium sequence. Phys. Rev. A 30, 316 (1984) United States
32164 T	A36: $H^+ + H_2$ A18: $H^+ + H_2$	0.5-50 keV	Yemen, O.; Jaecks, D. H.; Macek, J. Two-state charge-transfer calculation in H^+-H_2 collisions. Phys. Rev. A 30, 597 (1984) United States
32165 T	A36: $He^{2+} + He$ A18: $He^{2+} + He$	30-250 keV	Sandhya Devi, K. R.; Garcia, J. D. Coriolis coupling effects in time-dependent Hartree-Fock calculations of ion-atom collisions. Phys. Rev. A 30, 633 (1984) United States
32166 T	A36: $Li^+ + H$; $Li^{2+} + H$; $Li^{3+} + H$	200-10000 keV	Banyard, K. E.; Shirtcliffe, G. W. Electron capture from hydrogen atoms by fast $Li^{+3}(1s^2)$, $Li^{+2}(1s)$, and Li^{+3} ions. Phys. Rev. A 30, 630 (1984) United Kingdom
02167 E	H06: $h\nu + Na^*$	5600-6100 Å	Burkhardt, C. E.; Garver, W. P.; Kushawaha, V. S.; Leventhal, J. J. Ion formation in sodium vapor containing Rydberg atoms. Phys. Rev. A 30, 652 (1984) United States
32168 E	A16: $H^- + He$; $H^- + Ar$; $D^- + He$; $D^- + Ar$ A18: $H^- + He$; $H^- + Ar$; $D^- + He$; $D^- + Ar$	0.3-3.7 MeV	Duncan, M. F.; Menendez, M. G.; Hopkins, J. I. Detachment of very-low-energy electrons from H^-. Phys. Rev. A 30, 655 (1984) United States
32169 T	B31: Undef		Klar, H.; Zoller, P.; Fedorov, M. V. Laser-induced collective binding in two-electron systems. Phys. Rev. A 30, 658 (1984) Soviet Union
32170 E	E11: $e + e$; $e + C$	0.3 MeV	Elsler, R.; Nakel, W. Photon linear polarization in the elementary process of electron-electron bremsstrahlung. Phys. Rev. A 30, 661 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
32171 E	A36: Ar^{17+} + H_2; Pb^{59+} + H_2; Pb^{60+} + H_2; Pb^{57+} + H_2; Pb^{58+} + H_2; Pb^{59+} + H_2; Pb^{54+} + H_2; Pb^{55+} + H_2; Pb^{56+} + H_2; Pb^{51+} + H_2; Bi^{50+} + H_2; Bi^{51+} + H_2; Bi^{48+} + H_2; C^{6+} + H_2; Pb^{59+} + He; C^{6+} + He; Pb^{59+} + H_2; Pb^{59+} + He; C^{6+} + He; Fe^{16+} + Ar; Ar^{16+} + Ar; Ar^{17+} + Ar; Pb^{59+} + Ar; Bi^{51+} + Ar; Fe^{15+} + Ar; Fe^{16+} + Ar; Fe^{17+} + Ar; Ar^{16+} + Ar; Fe^{15+} + Ar; Fe^{16+} + Ar; C^{6+} + Ar; Pb^{59+} + Xe A38: Ar^{17+} + H_2; Pb^{59+} + H_2; Pb^{60+} + H_2; Pb^{57+} + H_2; Pb^{58+} + H_2; Pb^{59+} + H_2; Pb^{54+} + H_2; Pb^{55+} + H_2; Pb^{56+} + H_2; Pb^{51+} + H_2; Bi^{50+} + H_2; Bi^{51+} + H_2; Pb^{54+} + He; Pb^{59+} + H_2; Pb^{54+} + He; Ar^{17+} + Ar; Pb^{59+} + Ar; Bi^{51+} + Ar; Fe^{15+} + Ar; Fe^{16+} + Ar; Fe^{15+} + Ar; Ar^{16+} + Ar; Fe^{17+} + Ar; Fe^{16+} + Ar; Pb^{59+} + Xe	313-8533 keV/amu	Graham, W. G.; Berkner, K. H.; Pyle, R. V.; Schlachter, A. S.; Stearns, J. W.; Tanis, J. A. Charge-transfer cross sections for multiply charged ions colliding with gaseous targets at energies from 313 keV/amu to 6.5 MeV/amu. Phys. Rev. A 33, 722 (1986) United States
32172 E-T	A33: H_2^+ + H A38: H_2^+ + H	25-150 keV	Peacher, J. L.; Martin, P. J.; Seely, D. G.; Aldag, J. E.; Kvale, T. J.; Redd, E.; Blankenship, D.; Sutcliffe, V. C.; Park, J. T. Angular differential and total cross sections for the excitation of atomic hydrogen to its n = 2 level by 25-150-keV hydrogen molecular ions. Phys. Rev. A 33, 729 (1986) United States
32173 E	A11: Rb* + H_2	333 K	Petitjean, L.; Gounand, F.; Fournier, P. R. Thermal-energy collisions of rubidium Rydberg states with H_2 molecules. Phys. Rev. A 33, 736 (1986) France
02174 T	A06: H + H^+ Seq	Undef	Thorson, W. R.; Choi, J. H. Long-range secondary couplings in H^+(nsp z)-H(1s) charge-transfer collisions. Phys. Rev. A 33, 743 (1986) Canada
02175 T	E02: Undef	Undef	Clark, C. W. Eigenphase sum in electron scattering by polar molecules. Phys. Rev. A 33, 753 (1986) United States
02176 E	E05: e + H E07: e + H	5-14 eV	Ishaana, R.; McCarthy, I. E.; Stelbovics, A. T.; Weigold, E. Electron-impact ionization of atomic hydrogen: comparison of asymmetric (e,2e) measurements with theories. Phys. Rev. A 33, 758 (1986) Australia
02177 T	H06: Undef	Undef	Baker, H. C. Bom-Bernstian quantum theory of multiphoton ionization. Phys. Rev. A 33, 773 (1986) United States
02178 T	B01: Undef		Rashbini, A.; Lindberg, K. Transition probability of a two-level atom interacting with a time-symmetric pulse. Phys. Rev. A 33, 796 (1986) Finland
32179 E	H36: hν + Xe; hν + Xe*	28-75 eV	Pahlman, A.; Krause, M. O.; Carlson, T. A.; Svensson, A. Xe 5s, 5p correlation satellites in the region of strong interchannel interactions, 28-75 eV. Phys. Rev. A 30, 817 (1986) United States
32180 T	B37: Undef		Julienne, P. S.; Mies, F. H. Nonadiabatic theory of atomic line broadening: final-state distributions and the polarization of redistributed radiation. Phys. Rev. A 33, 831 (1986) United States
02181 E	H05: hν + OH*	28432-28833 cm^{-1}	Hale, M.; Cosby, P. C.; Huestis, D. L. Photofragment spectroscopy of shape resonances in OH*. Phys. Rev. A 33, 851 (1986) United States
32182 T	H31: Undef	Undef	Banta, A.; Dyatt, B. E. Theory of laser-molecule interaction: the recursive-residue-generation method. Phys. Rev. A 36, 872 (1986) United States
32183 E	E36: e + CO*; e + CH*	333 K	Morgan, W. L. Molecular-dynamics simulation of electron-ion recombination in a nonequilibrium, weakly ionized plasma. Phys. Rev. A 33, 579 (1986) United States

Ref. No.	Reactants	Energy Range	Reference
02184 T	E03: e + CH_4	Undef	Jain, A.; Thompson, D. G. Rotational excitation of CH_4 molecules by low-energy positrons. Phys. Rev. A 33, 1258 (1986) United Kingdom
02185 T	E02: e + H	1.5-3.5 Ry	Cao, D. B. Convergence of pseudostate expansions in electron-hydrogen scattering. Phys. Rev. A 33, 1131 (1986) United States
02186 T	A06: Be^{4+} + H; B^{5+} + H; C^{6+} + H; N^{7+} + H; O^{8+} + H	130-150 keV	Mandal, C. R.; Datta, S.; Mukherjee, S. C. Electron capture from atomic hydrogen by fully stripped ions of Be^{4+}, B^{5+}, C^{6+}, N^{7+}, and O^{8+} in the continuum intermediate-state approximation. Phys. Rev. A 33, 1134 (1986) India
02187 T	A06: H^+ + H A18: H^+ + H	1-10 keV	Olivarola, B. D. Resonant electron capture in H^+ + H(1s) collisions. Phys. Rev. A 33, 1122 (1986) Argentina
02188 E	C27: S^{16+} + C	327 MeV	Betz, H. D.; Rothermel, J.; Boschenthaler, D. Comment on "Electric field ionization of foil-excited Rydberg states of fast heavy ions". Phys. Rev. A 30, 1125 (1984) West Germany
02189 E	A33: F^{7+} + He A36: F^{7+} + He	6-15 MeV	Bewcomb, J.; Billingham, T. R.; Hall, J.; Varghese, S. L.; Fergiller, F. L.; Richard, P. "Erratum: Electron capture by metastable projectiles on He and Ne [Phys. Rev. A 29, 82 (1984)]. Phys. Rev. A 33, 1131 (1986) United States
02190 E	A36: Rb^+ + Rb	453 K	Cheret, R.; Barbier, L. Experimental evidence for negative-ion formation by the collisional reaction Rb(6d) + Rb(5s) - Rb^+ + Rb^-. Phys. Rev. A 33, 1132 (1986) France
02191 T	A06: H^+ + Na; H^+ + K	0.2-20 keV	Fritsch, W. Atomic-basis study of electron transfer in H^+ + Na and H^+ + K collisions. Phys. Rev. A 33, 1135 (1986) West Germany
02192 T	E08: e + He	5000 K	Dimitrijevic, M. S. The trajectory effect in calculations of the phaseshift for binary collisions and broadening of neutral atom lines. J. Phys. B 17, L283 (1984) Yugoslavia
02193 T	B07: e + H		Eyros, F. W., Jr.; Joachain, C. J. Electron-atom collisions in a strong laser field. J. Phys. B 17, 1295 (1984) Belgium
02194 T	E03: e + He	20-23 eV	Freitas, L.C.G.; Barrington, R. A.; Burke, P. G.; Hibbert, A.; Kingston, A. E.; Stafailas, A. L. An eleven-state electron-helium scattering calculation. J. Phys. B 17, 1333 (1984) United Kingdom
02195 E	H04: hν + Nb; hν + Mo; hν + Ru; hν + Rh; hν + Pd; hν + Ag; hν + Cd; hν + In; hν + Sn; hν + Sb	40 keV	Putila-Mantyla, P.; Chao, M.; Graeffe, G. L x-ray linewidths of the elements Nb to Sb I. J. Phys. B 17, 1735 (1984) Finland
02196 E	H30: hν + Nb; hν + Mo; hν + Ru; hν + Rh; hν + Pd; hν + Ag; hν + Cd; hν + In; hν + Sn; hν + Sb	40 keV	Chao, M.; Putila-Mantyla, P.; Graeffe, G. L x-ray linewidths of the elements Nb to Sb II. J. Phys. B 17, 1747 (1984) Finland
02197 E	H02: hν + He H06: hν + He	700-500 A°	Baig, M. A.; Consuegra, J. P. Centrifugal barrier effects in the high Rydberg states and autoionizing resonances of neon. J. Phys. B 17, 1785 (1984) West Germany
02198 T	H36: hν + He	3.34-3.43 Ry	Ojha, P. C. Photoionization of helium above the N = 2 threshold. J. Phys. B 17, 1807 (1984) United Kingdom
02199 E	A12: Hg + Ar; Hg + Kr A17: Hg + Ar; Hg + Kr	393-1123 K	Bousquet, C.; Brau, M.; Majdi, Y. Hg-Ar and Hg-Kr interaction potentials from temperature-dependent absorption spectra around 1850 A°. J. Phys. B 17, 1831 (1984) France
02200 E	A12: K + Rb A17: K + Rb	523-573 K	Beuc, R.; Movre, M.; Vadla, C. The impact broadening of the first potassium resonance lines by rubidium atoms. J. Phys. B 17, 1841 (1984) Yugoslavia

Ref. No.	Reactants	Energy Range	Reference
02201 P	A16: H^- + He; H^- + Ar; H^- + N_2; H^- + H_2; H^- + O_2; H^- + CO_2	4.5-4033 eV	Esaulov, V. A.; Grouard, J. P.; Hall, R. I.; Landau, M.; Montmagnon, J. L.; Pichou, F.; Schermann, C. Electron detachment and charge exchange to shape resonances in H^- collisions. J. Phys. B 17, 18[illegible] (1984) France
02202 P	A07: Ne + Gd; Ne + B; Ne + Th; O + Gd; O + B; C + Th; C + B; F + B	3.3-41 MeV	Zelazny, Z.; Rozmej, P. The K-shell ionisation of ^{64}Gd, ^{79}Au and ^{90}Th induced by heavy, charged particles. J. Phys. B 17, 1867 (1984) Denmark
02203 T	E03: e + He	50-500 eV	Biswas, A. K. Electron impact excitation of the 2^1S state of helium at intermediate and high energies. J. Phys. B 17, 1889 (1984) India
02204 E	E03: e + Na	2-1000 eV	Jitschin, W.; Osimitsch, S.; Reihl, H.; Kleinpoppen, H.; Lutz, H. O. Electron exchange in the Na 3p electron impact excitation. J. Phys. B 17, 1899 (1984) West Germany
02205 E	A06: Ar^{4+} + Ar; Ar^{5+} + Ar; Ar^{6+} + Ar; Ar^{7+} + Ar; Ar^{8+} + Ar; Ar^{9+} + Ar; Ar^{10+} + Ar; Ar^{11+} + Ar; Ar^{12+} + Ar; Ar^{13+} + Ar; Ar^{14+} + Ar A37: Ar^{4+} + Ar; Ar^{5+} + Ar; Ar^{6+} + Ar; Ar^{7+} + Ar; Ar^{8+} + Ar; Ar^{9+} + Ar; Ar^{10+} + Ar; Ar^{11+} + Ar; Ar^{12+} + Ar; Ar^{13+} + Ar; Ar^{14+} + Ar	1.05 MeV/amu	Tonuma, T.; Kase, M.; Kambara, T.; Kumagai, H.; Matsuo, T.; Urakawa, J.; Shibata, H.; Takahashi, J.; Ozkok, S.; Be, S. H.; Kohno, I.; Tawara, H. Projectile charge-state dependence of recoil-ion charge-state distributions produced in heavy-ion collisions. J. Phys. B 17, L317 (1984) Japan
02206 T	A36: C^{6+} + H; N^{7+} + H; O^{8+} + H	0.25-25 keV/amu	Hansen, J.; Gayet, R.; Harel, C.; Salin, A. Electron capture by C^{6+}, N^{7+}, and O^{8+} from atomic hydrogen in the keV amu^{-1} energy range. J. Phys. B 17, L323 (1984) France
02207 T	R07: hν + H R06: hν + H	R06: 0.83-3 cm^{-1}	Kondratovich, V. D.; Ostrovsky, V. N. Resonance and interference phenomena in the photoionisation of a hydrogen atom in a uniform electric field: I. Resonances below and above the potential barrier. J. Phys. B 17, 1981 (1984) Soviet Union
02208 T	R07: hν + H R06: hν + H	Undef	Kondratovich, V. D.; Ostrovsky, V. N. Resonance and interference phenomena in the photoionisation of a hydrogen atom in a uniform electric field: II. Overlapping resonances and interference. J. Phys. B 17, 2011 (1984) Soviet Union
02209 T	R36: hν + Mg^+; hν + Al^{2+}; hν + Si^{3+}; hν + S^{5+}	0-2 Ry	Butler, K.; Mendoza, C.; Zeippen, C. J. Oscillator strengths and photoionisation cross sections for positive ions in the sodium isoelectronic sequence. J. Phys. B 17, 2039 (1984) United Kingdom
02210 E	R36: 3hν + Ba; 5hν + Ba	9433-9483 cm^{-1}	Bondar, I. I.; Gomonay, A. I.; Delone, N. B.; Zapesochnyi, I. P.; Suran, V. V. Measurement of the three- and five-photon ionisation probabilities of the barium atom. J. Phys. B 17, 2049 (1984) Soviet Union
02211 E	E35: e + Fe^+	14-733 eV	Montague, R. G.; Diserens, M. J.; Harrison, M.F.A. A measurement of the cross section for electron impact ionisation of Fe^+. J. Phys. B 17, 2085 (1984) United Kingdom
02212 E	E33: e + CO	286-332 eV	Shaw, D. A.; King, G. C.; Cvejanovic, D.; Read, F. H. Electron impact excitation of inner-shell excited states of CO. J. Phys. B 17, 2091 (1984) United Kingdom
02213 E	R06: hν + Ga; hν + In; hν + Tl	120-220 nm	Karamatskos, N.; Muller, M.; Schmidt, M.; Zimmermann, P. Investigation of autoionising levels in Ga I, In I, and Tl I by photoionisation experiments. J. Phys. B 17, L341 (1984) West Germany
02214 E	R06: hν + Ba^+	33-36 eV	Lyon, I. C.; Peart, B.; West, J. B.; Kingston, A. E.; Dolder, K. Evidence of autoionisation in the photoionisation of Ba^+. J. Phys. B 17, L345 (1984) United Kingdom
02215 T	R36: nhν + Xe	0.53-1.06 μm	Crance, M. Multiphoton ionisation of noble gases: a statistical description of the energy spectrum of emitted electrons. J. Phys. B 17, L355 (1984) France

Ref. No.	Reactants	Energy Range	Reference
02216 T	A06: He^{2+} + H	0.1-25 keV/amu	Wada, K.; Murai, T. Close-coupling calculation for charge transfer in He^{2+} + H(1s) collisions at low energies. J. Phys. B 17, L363 (1984) Japan
02217 T	B06: hν + Tl; hν + Ba	Undef	Lane, A. M. Photoionization through isolated Rydberg states interacting with a broad state. J. Phys. B 17, 2213 (1984) United Kingdom
02218 T	A17: Cd + Ar; Cd + Kr; Cd + Xe	Undef	Czuchaj, E.; Sienkiewicz, J. Pseudopotential calculation of the adiabatic potentials and oscillator strengths of cadmium-rare-gas pairs. J. Phys. B 17, 2251 (1984) Poland
02219 T	A11: Mg^* + He	0-0.1 eV	Orlikowski, T.; Alexander, M. H. Fine-structure transitions in collisions of Mg(3s3p ^3P) with He. J. Phys. B 17, 2269 (1984) United States
02220 E	A16: H^- + He; H^- + Ne; H^- + Ar; Li^- + He; Li^- + Ne; Li^- + Ar; Na^- + He; Na^- + Ne; Na^- + Ar; K^- + He; K^- + Ne; K^- + Ar	3.5-1.3 keV/amu	Andersen, N.; Andersen, T.; Jepsen, L.; Macek, J. Electron detachment processes in keV H^-, Li^-, Na^-, K^--rare-gas collisions. J. Phys. B 17, 2281 (1984) Denmark
02221 T	A36: Au^{6+} + He; Au^{7+} + He; Au^{8+} + He; Au^{9+} + He; Au^{10+} + He; Au^{11+} + He; Au^{12+} + He; Au^{13+} + He; Au^{14+} + He; Au^{15+} + He; Au^{16+} + He; Au^{17+} + He; Au^{18+} + He; Au^{19+} + He; Au^{20+} + He; Au^{21+} + He; Au^{22+} + He; Au^{23+} + He; Au^{24+} + He; Au^{25+} + He A37: Au^{6+} + He; Au^{7+} + He; Au^{8+} + He; Au^{9+} + He; Au^{10+} + He; Au^{11+} + He; Au^{12+} + He; Au^{13+} + He; Au^{14+} + He; Au^{15+} + He; Au^{16+} + He; Au^{17+} + He; Au^{18+} + He; Au^{19+} + He; Au^{20+} + He; Au^{21+} + He; Au^{22+} + He; Au^{23+} + He; Au^{24+} + He; Au^{25+} + He	20-300 keV/amu	McDowell, M.R.C.; Janev, R. K. Electron capture, ionisation and transfer-ionisation in fast Au(sup q)+ + He collisions. J. Phys. B 17, 2295 (1984) United Kingdom
02222 E	A37: H^+ + W; H^+ + Au; H^+ + U	0.65-1.75 MeV	De Castro Faria, N. V.; Freire, F. L., Jr.; Montenegro, E. C.; de Pinho, A. G.; da Silveira, E. F. M-shell ionisation cross sections for W, Au, and U by low-velocity protons. J. Phys. B 17, 2337 (1984) Brazil
02223 E	A06: S^{15+} + Ar	4.7-90 MeV	Schuch, R.; Ingwersen, H.; Justiniano, E.; Schmidt-Böcking, H.; Schulz, M.; Ziegler, F. Interference effects in K vacancy transfer of hydrogen-like S ions colliding with Ar. J. Phys. B 17, 2315 (1984) West Germany
02224 E	E03: e + He E05: e + He	1200 eV	Cook, J.P.D.; McCarthy, I. E.; Stelbovics, A. T.; Weigold, E. Non-coplanar symmetric (e,2e) momentum profile measurements for helium: an accurate test of helium wavefunctions. J. Phys. B 17, 2339 (1984) Australia
02225 E	A03: C^{4+} + H_2 A36: C^{4+} + H_2	0.2-0.4 a.u.	Baptist, R.; Bonnet, J. J.; Chauvet, G.; Desclaux, J. P.; Dousson, S.; Hitz, D. Polarisation of light emitted after charge transfer from H_2 to C^{4+} ions. J. Phys. B 17, L617 (1984) West Germany
02226 T	E35: e + H B37: hν + H^-	Undef	Feagin, J. M. Wannier threshold theory for the Coulomb break-up of three-particle systems. J. Phys. B 17, 2433 (1984) United States
02227 E	A37: H^+ + He; H^+ + Ne; H^+ + Ar A18: H^+ + He; H^+ + Ne; H^+ + Ar	10-550 eV	Hippler, R.; Bossler, J.; Lutz, H. O. Delta-electron spectroscopy of multiply ionising proton-rare-gas collisions. J. Phys. B 17, 2453 (1984) West Germany
02228 E	A16: H^- + He; H^- + Ar	500 keV	Ponce, V. H.; Baragiola, R. A. Origin of features in the energy spectra of electrons detached from fast H^- in collisions with He and Ar atoms. J. Phys. B 17, 2467 (1984) Argentina
02229 T	A06: H^+ + H; He^+ + He	0.01-100 MeV	Maidagan, J. M.; Rivarola, R. D. A symmetric eikonal-type approximation for electron capture in ion-atom collisions. J. Phys. B 17, 2477 (1984) Argentina

Ref. No.	Reactants	Energy Range	Reference
02230 E	A33: C^{6+} + Li; N^{6+} + Li; N^{7+} + Li; O^{6+} + Li A36: C^{6+} + Li; N^{6+} + Li; N^{7+} + Li; O^{6+} + Li	20-300 keV	Brazuk, A.; Dijkkamp, D.; Drentje, A. G.; de Heer, F. J.; Winter, H. Measurement of metastable fractions in multiply charged ion beams by ion excitation in core-conserving electron capture. J. Phys. B 17, 2489 (1984) Austria
02231 T	E32: e + Kr; e + Xe E17: e + Kr; e + Xe	6-50 eV	McEachran, R. P.; Stauffer, A. D. Elastic scattering of electrons from krypton and xenon. J. Phys. B 17, 2507 (1984) Canada
02232 E	E32: e + Rb E03: e + Rb E17: e + Rb	10-200 eV	Vuskovic, L.; Maleki, L.; Trajmar, S. Elastic and inelastic electron scattering by rubidium at 10, 20, and 200 eV impact energies. J. Phys. B 17, 2519 (1984) United States
02233 T	E35: e + Ca; e + Sr	25-150 eV	Chatterjee, S. N.; Roy, B. N. Electron impact double ionisation of Ca and Sr. J. Phys. B 17, 2527 (1984) India
02234 E	E03: e + H_2; e + D_2 E17: e + H_2; e + D_2	12-80 eV	Becker, K.; Hammond, P. W.; McConkey, J. W. Electron-polarised-photon coincidence study of the excitation of the C $^1\Pi_u$ (sub a) state in hydrogen and deuterium. J. Phys. B 17, 2535 (1984) Canada
02235 T	E02: e + CO	0.01-1 Ry	Salvini, S.; Burke, P. G.; Noble, C. J. Electron scattering by polar molecules using the R-matrix method. J. Phys. B 17, 2549 (1984) United Kingdom
02236 T	A03: Na^+ + Na A36: Na^+ + Na A18: Na^+ + Na	37.5 eV	Allan, R. J. Na(3s) + Na^+ → Na(3p) + Na^+ differential scattering. J. Phys. B 17, L445 (1984) West Germany
02237 E	A37: Na^* + Na^*	550-580 K	Bezuglov, N. N.; Klucharev, A. N.; Sheverev, V. A. On the possibility of extraordinary low rate constants of some collision reactions in atomic beams. J. Phys. B 17, L449 (1984) Soviet Union
02238 T	E32: e + N_2	Undef	Berman, M.; Domcke, W. Direct calculation of complex resonance poles in electron-molecule scattering using separable T-matrix expansions. J. Phys. B 17, L453 (1984) West Germany
02239 E	A08: H^* + H_2; H^* + He; H^* + Ne; H^* + Ar; H^* + Kr; H^* + Xe	1.3-3.6 keV	Cornet, A.; Claeys, W.; Lorent, V.; Jureta, J.; Fussen, D. Electron loss from H(3p) atoms in collisions with H_2 molecules and rare-gas atoms. Intense H(3p) beam production by laser excitation of metastable hydrogen. J. Phys. B 17, 2643 (1984) Belgium
02240 T	A06: H^+ + H	100-5000 MeV	Humphries, W. J.; Moiseiwitsch, B. L. Relativistic second Born approximation for electron capture. J. Phys. B 17, 2655 (1984) United Kingdom
02241 T	A36: H^+ + C; H^+ + Ne A18: H^+ + C; H^+ + Ne	0.1-20 MeV	Amundsen, P. A.; Jakubassa-Amundsen, D. H. Charge transfer at large scattering an...s in the strong-potential Born approximation. J. Phys. B 17, 2671 (1984) Denmark
02242 T	A36: Li^+ + Li A18: Li^+ + Li	0.5-1.0 keV	Shimakura, N.; Inouye, H.; Watanabe, T. Differential cross sections for Li^+-Li collisions using molecular bases: quantum effect. J. Phys. B 17, 2687 (1984) Japan
02243 E	E33: e + H	350 eV	Back, C. G.; Watkin, S.; Eminyan, M.; Rubin, K.; Slevin, J.; Woolsey, J. M. Excitation and decay of Stark-mixed n = 2 states of hydrogen observed in an electron-photon coincidence experiment. J. Phys. B 17, 2695 (1984) United Kingdom
02244 E	E35: e + W^+	41-750 eV	Montague, R. G.; Harrison, M.F.A. A measurement of the cross section for electron impact ionisation of singly charged tungsten ions. J. Phys. B 17, 2707 (1984) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
02245 T	A11: $Na^* + He$	296 K	Yoshizawa, T.; Matsuzawa, M. Collisions of high-Rydberg atoms in circular states with He. J. Phys. B 17, L485 (1984) Japan
02246 T	B36: $h\nu + Pb$; $h\nu + Sn$	Undef	Kerkhoff, H.; Kammann, D.; Malutzki, R.; Schmidt, V. Photoionisation processes in the 5d, 6s, and 6p shells of atomic lead and the 4d shell of atomic tin. J. Phys. B 17, 2781 (1984) West Germany
02247 E	B35: $h\nu + N_2$ B36: $h\nu + N_2$	512-453 A°	Morioka, Y.; Aoyama, S.; Kageyama, T.; Hayaishi, T.; Suzuki, I. H.; Isoyama, G.; Asaoka, S.; Ishiguro, E.; Nakamura, M. Dissociative photoionization of N_2 from threshold to 29 eV. J. Phys. B 17, 2795 (1984) Japan
02248 T	A33: $Na^* + He$; $Na^* + Ne$	500 K	Valiron, P.; Roche, A. L.; Masnou-Seeuws, F.; Dolan, M. E. Molecular treatment of collisions between a Rydberg sodium atom and a rare-gas perturber. J. Phys. B 17, 2803 (1984) France
02249 E	A03: $He^+ + He$ A18: $He^+ + He$	1.2-4 keV	Boskamp, E.; Morgenstern, R.; Van der Straten, P.; Niehaus, A. A study of double excitation in He^+-He collisions. J. Phys. B 17, 2823 (1984) The Netherlands
02250 E	A35: $H^+ + Cs$; $H^+ + Ba$; $H^+ + La$; $H^+ + Gd$	1-2 MeV	Avaldi, L.; Mitchell, I. V.; Eschbach, H. L.; Dobma, W. L-shell x-ray production cross sections of ^{55}Cs, ^{56}Ba, ^{57}La, and ^{64}Gd for protons of energy 1-2 MeV. J. Phys. B 17, 2851 (1984) Belgium
02251 E-T	A03: $Na^* + Na^+$ A17: $Na^* + Na^+$	20-48 eV	Bähring, A.; Hertel, I. V.; Meyer, E.; Meyer, W.; Spies, N.; Schmidt, H. Excitation of laser state-prepared $Na^*(3p)$ to $Na^*(3d)$ in low-energy collisions with Na^+: experiment and calculations of the potential curves of Na_2^+. J. Phys. B 17, 2859 (1984) West Germany
02252 E	A16: $F^- + H_2$; $F^- + N_2$; $F^- + O_2$; $F^- + CO_2$	10-4000 eV	Ngoc Tuan, V.; Esaulov, V. A.; Grouard, J. P.; Hall, R. I.; Montmagnon, J. L. Electron detachment and charge exchange to shape resonances in F^--molecule collisions. J. Phys. B 17, 2897 (1984) France
02253 P	E05: $e + Ar$	1000 eV	Sewell, E. C.; Crowe, A. Alignment produced in ionisation of the 2p shell of argon by specific momentum transfer electron collisions. J. Phys. B 17, 2913 (1984) United Kingdom
02254 E	E03: $e + Ar$; $e + Kr$; $e + Xe$; $e + H_2$; $e + N_2$; $e + CO$	12-17 eV	Hammond, P.; Read, F. H.; King, G. C. Near-threshold electron impact excitation functions of high-n states of Ar, Kr, Xe, H_2, N_2, and CO. J. Phys. B 17, 2925 (1984) United Kingdom
02255 T	A14: $O^+ + H_2$ A17: $O^+ + H_2$	Undef	Hirst, D. M. An ab initio potential energy surface for collinear $^4\Sigma^-$ OH_2^+. J. Phys. B 17, L535 (1984) United Kingdom
02256 T	B37: $nh\nu + Xe$ B36: $nh\nu + Xe$	Undef	Edwards, M.; Pan, L.; Armstrong, L., Jr. Model study of multiphoton ionisation in strong fields. J. Phys. B 17, L515 (1984) United States
02257 E	A03: $N^{6+} + He$ A36: $N^{6+} + He$ A37: $N^{6+} + He$	3-34 keV	Roncin, P.; Barat, M.; Laurent, H.; Pommier, J.; Dousson, S.; Hitz, D. Transfer ionisation and two-electron capture processes in N^{6+}-He collisions at 3-34 keV energies. J. Phys. B 17, L521 (1984) France
02258 T	E32: $e + N_2$	1.5-10 eV	Rumble, J. R., Jr.; Stevens, W. J.; Truhlar, D. G. Effect of electron correlation in the target wavefunction on electron-molecule scattering. J. Phys. B 17, 3151 (1984) United States
02259 E	E35: $e + He$ E17: $e + He$	8 keV	Lahmam-Bennani, A.; Wellenstein, H. F.; Dal Cappello, C.; Duguet, A. Coincidence electron impact ionisation of helium: absolute experimental cross sections and comparison with first-order theories. J. Phys. B 17, 3159 (1984) France
02260 T	E05: $e + Ca^+$; $e + Ba^+$	10-50 eV	Griffin, D. C.; Pindzola, M. S.; Bottcher, C. Calculations of the contributions of excitation-autoionisation to the electron impact ionisation of Ca^+ and Ba^+ in the distorted-wave approximation. J. Phys. B 17, 3183 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02261 E	E03: e + Hg	6.7-15 eV	Post, H. A. The absolute Hg 6^1P_1 direct electron impact excitation cross section determined in a low-pressure Hg discharge. J. Phys. B 17, 3193 (1984) The Netherlands
02262 E	A11: Ne^* + Cu; He^* + Cu; Ar^* + Cu; Kr^* + Cu; Xe^* + Cu	300 K	Bawnitzki, G.; Rosenwaks, S. Quenching of metastable states of rare gases by copper atoms. J. Appl. Phys. 56, 735 (1984) Israel
02263 T	R34: hν + Si^{11+}; hν + Ca^{17+}; hν + Fe^{23+}; hν + Zn^{27+}; hν + Zr^{37+}; hν + Sn^{47+}; hν + Yb^{67+} R36: hν + Si^{11+}; hν + Ca^{17+}; hν + Fe^{23+}; hν + Zn^{27+}; hν + Zr^{37+}; hν + Sn^{47+}; hν + Yb^{67+}	0.96-82 a.u.	Zilitis, V. A. Theoretical determination of oscillator strengths for the principal series of lithium-like ions. Opt. Spectrosc. 55, 127 (1983) Soviet Union
02264 T	R04: hν + Ar R06: hν + Ar	245-270 eV	Sukhorukov, V. L.; Demekhin, V. F.; Yavna, V. A.; Dudenko, A. I.; Timoshevskaya, V. V. Photoionization of the argon 2p shell. Opt. Spectrosc. 55, 135 (1983) Soviet Union
02265 E	E03: e + Eu; e + Eu^+	5.0-300 eV	Shimon, L. L.; Golovchak, N. V.; Garga, I. I.; Goldovskii, V. I. Electron-impact excitation of 4f electrons of europium atoms and singly charged ions. Opt. Spectrosc. 55, 137 (1983) Soviet Union
02266 E	E03: e + Ne^*	16-50 eV	Mityureva, A. A.; Penkin, N. P. Cross sections for electron-impact excitation of atomic neon metastable states. Opt. Spectrosc. 55, 229 (1983) Soviet Union
02267 E	E03: e + He^+; e + He	20-500 eV	Semenyuk, Y. N.; Imre, A. I.; Dashchenko, A. I.; Zapesochnyi, I. P. Excitation of spectral lines of the principal series of the helium atom and ion in electron-atom collisions. Opt. Spectrosc. 55, 252 (1983) Soviet Union
02268 E-T	A07: Kr^* + Kr^* A11: Kr^* + Kr^*	300 K	Bolokolov, B. B.; Voronov, O. G. Interaction between metastable krypton atoms in the $^3P_2$ state. Opt. Spectrosc. 55, 254 (1983) Soviet Union
02269 E-T	E03: e + He E17: e + He	19-60 eV	Fabrikant, I. I.; Shpenik, O. B.; Zavilopulo, A. N.; Snegurskii, A. V. Some aspects of the excitation of metastable states of the helium atom by electron impact. Opt. Spectrosc. 55, 370 (1983) Soviet Union
02270 E	A11: H_2^* + H_2	300 K	Schmoranzer, H.; Imschweiler, J. Radiative lifetimes and collisional quenching cross sections of selectively excited vibrational states of the B 2p $^1\Sigma(sub\ u)^+$ state of H_2. Phys. Lett. A 100, 85 (1984) West Germany
02271 T	C32: H^+ + H_2; H^+ + He	0.1-2.5 MeV	Xu, Y. J.; Khandelwal, G. S.; Wilson, J. W. Intermediate energy proton stopping power for hydrogen molecules and monatomic helium gas. Phys. Lett. A 100, 137 (1984) United States
02272 T	C32: Li^{3+} + C; C^{6+} + C; C^{++} + C	1 MeV/amu	Kaneko, T.; Yamamura, Y. Theoretical study of the stopping powers for pre-equilibrium heavy ion beams. Phys. Lett. A 100, 313 (1984) Japan
02273 T	E02: e + H E03: e + H E05: e + H E17: e + H	15 eV	Callaway, J. Electron-hydrogen scattering just above the ionization threshold. Phys. Lett. A 100, 415 (1984) United States
02274 E	E05: e + He	500-2000 eV	Di Martino, V.; Fantoni, R.; Giardini-Guidoni, A.; Tiribelli, R. Triple differential cross section for electron impact ionization of He: measurements taken at intermediate incident energy. Phys. Lett. A 103, 85 (1984) Italy
02275 T	C32: Undef	1 MeV/amu	Cowern, N.E.B.; Read, P. M.; Sofield, C. J. Comments on "Theoretical study of the stopping powers for pre-equilibrium heavy ion beams". Phys. Lett. A 100, 87 (1984) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
02276 E	C02: $He^+ + C$	1.5-2.8 MeV	Cleuvas, A.; Gaillard, M. J.; de Pinho, A. G.; Poizat, J. C.; Remillieux, J. Nonequilibrium effects in the energy loss of He^+ ions in very thin carbon foils. Phys. Lett. A 103, 419 (1984) France
02277 T	A16: $H^- + He$ A18: $H^- + He$	0.5 MeV	Crawford, O. H. Theory of structures in the doubly differential cross section for collisional detachment of electrons from H^-. Phys. Lett. A 104, 25 (1984) United States
02278 E	H06: $h\nu + Ne^{2+}$	156-420 eV	Jannitti, E.; Nicolosi, P.; Tondello, G. Photoionization and double excitation spectrum of Ne^{2+}. Opt. Commun. 50, 225 (1984) Italy
02279 E	H08: $h\nu + Au$; $h\nu + Pb$; $h\nu + Th$; $h\nu + U$	5.9 keV	Shatendra, B.; Allawadhi, K. L.; Sood, B. S. Measurement of average M-shell fluorescence yields in some high Z elements. Physica 84C 124, 279 (1984) India
02280 E	A17: $H + He$	Undef	Jochemsen, R.; Berlinsky, A. J.; Hardy, W. N. The diffusion cross section for atomic hydrogen in helium gas at low temperature and the H-He potential. Can. J. Phys. 62, 751 (1984) Canada
02281 E-T	K01: Laser assisted atom-atom collisions		Roussel, F. Laser-assisted atom - atom collisions. Comments At. Mol. Phys. 15, 59 (1984) France
02282 E-T	B01: $h\nu + H$ H08: $h\nu + H$	H08: 3-10 GHz	Bersons, I. Y. Radiative transitions between highly excited atomic states in the presence of a strong microwave field. Sov. Phys.-JETP 56, 40 (1983) Soviet Union
02283 E-T	H06: $h\nu + Cr$; $h\nu + Mn$; $h\nu + Tc$	40-60 eV	Amus'ya, M. Y.; Golubkov, V. K.; Ivanov, V. K. Photoionization of atoms with half-filled shells. Sov. Phys.-JETP 58, 67 (1983) Soviet Union
02284 E-T	E03: $e + Hg^+$	3-16 eV	Zapesochnyi, I. P.; Tashchenko, A. I.; Prostov, V. I.; Isra, A. I.; Gomonai, A. N.; Lend'el, V. I.; Mavrotskii, V. T.; Sabad, E. P. Resonance structure of the cross section for electron-impact excitation of the $3p^4\,^2P$ level of the magnesium ion. Sov. Phys.-JETP Lett. 39, 51 (1984) Soviet Union
02285 T	A14: $H + D_2$	0.55-1.3 eV	Connor, J.N.L.; Southall, N.J.B. The reaction $H + D_2 \rightarrow HD + D$: distorted wave calculations at E sub trans (v = 0, j = 0) = 0.55 and 1.3 eV. Chem. Phys. Lett. 108, 527 (1984) United Kingdom
02286 T	A14: $H + D_2$	0.55 eV	Schatz, G. C. A coupled states quantum reactive scattering study of $H + D_2 \rightarrow HD + D$ at E sub rel (v = j = 0) = 0.55 eV. Chem. Phys. Lett. 108, 532 (1984) United States
02287 E	A02: $Na + K$ A18: $Na + K$	200-250 meV	Duren, R.; Groger, H.; Liedtke, R. A differential scattering experiment for Na(3P) colliding with K(05). Chem. Phys. Lett. 109, 424 (1984) West Germany
02288 T	E03: $e + N^*$; $e + O^*$; $e + He^*$; $e + Kr^*$; $e + Xe^*$ E07: $e + Ar^*$	200 eV	Andreev, E. A.; Bodrov, A. E. Inelastic scattering of low-energy electrons by metastable atoms. Chem. Phys. Lett. 105, 450 (1984) Soviet Union
02289 E	H06: $h\nu + CO_2$	25-55 eV	Roy, P.; Werner, I.; Adam, N. Y.; Delwiche, J.; Hubin-Franskin, M. J.; Lablanquie, P.; Roy, D. On the photoionization shape resonance associated to the $C\,^2\Pi_g^+$ state of CO_2^+. Chem. Phys. Lett. 109, 667 (1984) France
02290 E-T	E03: $e + He$ J02: Excitation		Aggarwal, K. M.; Kingston, A. E.; McDowell, M.R.C. Electron excitation rate coefficients for transitions from the $1s^2\,^1S$ ground state to the $1s2s\,^{1,3}S$ and $1s2p\,^{1,3}P^o$ excited states of helium. Astrophys. J., Part 1 278, 874 (1984) United Kingdom
02291 T	B07: $e + Be$-like ions		Dimitrijevic, M. S. Electron impact line widths of the resonance lines of Be-like ions. Astron. Astrophys. 131, 327 (1984) Yugoslavia

Ref. No.	Reactants	Energy Range	Reference
02292 T	E06: e + C^{0}; e + C^{+0}; e + C^{2+}; e + C^{2+0}; e + C^{3+}; e + C^{3+0}; e + C^{4+}; e + C^{4+0}; e + B^{0}; e + B^{+0}; e + B^{2+}; e + B^{2+0}; e + B^{3+}; e + B^{3+0}; e + B^{4+}; e + B^{4+0}; e + O^{0}; e + O^{+0}; e + O^{2+}; e + O^{2+0}; e + O^{3+}; e + O^{3+0}; e + O^{4+}; e + O^{4+0}; e + O^{5+}; e + O^{5+0}; e + O^{6+}; e + O^{6+0}	Undef	Burgtsumer, H.; Storey, P. J. Dielectronic recombination at low temperatures: II. Recombination coefficients for lines of C, N, O. Astron. Astrophys. Suppl. Ser. 56, 293 (1984) Switzerland
02293 E	E03: e + Fe^{10+}	Undef	Bapq, J. S.; Barretta, A.; Datla, R. U. Collisional excitation rate coefficients for Fe XI. Astrophys. J., Part 1 279, 466 (1984) United States
02294 E	E04: hν + O^{2+}	Undef	Johnson, H. C.; Smith, P. L.; Knight, B. D. The radiative lifetime of the $^{3}S_{1}^{0}$ metastable level of O^{++}. Astrophys. J., Part 1 281, 477 (1984) United States
02295 T	E03: e + Ne^{9+}; e + Si^{10+}	3.0-100.0x10 ° K	Aggarwal, K. M. Electron impact excitation rates for fine-structure transitions in Ne V and Si IX: an R-matrix approach. Astrophys. J. Suppl. Ser. 54, 1 (1984) United Kingdom
02296 T	E03: e + Si^{11+}; e + Ca^{17+}; e + Fe^{23+}; e + Kr^{33+}; e + Gd^{61+}	Undef	Goett, S. J.; Sampson, D. H.; Clark, R.E.H. Inner shell excitation of lithium-like ions. Astrophys. J. Suppl. Ser. 54, 115 (1984) United States
02297 T	E03: e + H-like ions	Undef	Cxa, D. H. High energy collision strengths and limits for excitation of hydrogenic ions by electron impact. Astrophys. J. Suppl. Ser. 54, 395 (1984) United States
02298 T	E03: e + Ne^{2+}	5.0-20.0x10³ K	Butler, K.; Mendoza, C. Collisional excitation rates for transitions between the fine structure levels of the ground term of Ne^{2+}. Mon. Not. R. Astron. Soc. 208, 17P (1984) United Kingdom
02299 E	H02: hν + CH	103-115 nm	Lee, J. H.; Lee, L. C. Photoabsorption cross sections of CH at 115-103 nm. J. Chem. Phys. 81, 31 (1984) United States
02300 T	A10: H + H_2 A10: H + H_2	0.3-0.65 eV	Schatz, G. C.; Hubbard, L. M.; Dardi, P. S.; Miller, W. H. Coupled channel distorted wave calculations for the three-dimensional H + H_2 reaction. J. Chem. Phys. 81, 231 (1984) United States
02301 T	E02: e + H_2 E03: e + H_2 E17: e + H_2	10-100 eV	Staszewska, G.; Schwenke, D. W.; Truhlar, D. G. Complex optical potential model for electron-molecule scattering, elastic scattering, and rotational excitation of H_2 at 10-100 eV. J. Chem. Phys. 81, 335 (1984) United States
02302 T	A17: O + H_2; F + H_2	Undef	Bright, J. S.; Donaldson, D. J.; Williams, D. J. HHF-CI potential surfaces using balanced basis sets. II. O + H_2 and F + H_2. J. Chem. Phys. 81, 397 (1984) Canada
02303 E	D31: H_2 + D_2 + Pt	500-1175 K	Lin, T. H.; Somorjai, G. A. Angular and velocity distributions of HD molecules produced by the H_2-D_2 exchange reaction on the stepped Pt(557) surface. J. Chem. Phys. 81, 704 (1984) United States
02304 T	A17: Ne + Ar	Undef	Aziz, R. A.; Van Dalen, A. An improved potential for Ne-Ar. J. Chem. Phys. 81, 779 (1984) Canada
02305 E	A14: HD° + EE; HD° + He; HD° + D_2	298 K	Bohlfing, E. A.; Rabitz, H.; Gelfand, J.; Miles, R. B. Mechanisms and rate constants for the vibrational relaxation of HE (v = 4,5, and 6) in collisions with HD, °He, and D_2. J. Chem. Phys. 81, 823 (1984) United States
02306 T	A17: Li^{+} + Ar; Na^{+} + Ar; K^{+} + Ar; Rb^{+} + Ar; Cs^{+} + Ar; Cl^{-} + Ar; Br^{-} + Ar; Li^{+} + Kr; Na^{+} + Kr; K^{+} + Kr; Rb^{+} + Kr; Cs^{+} + Kr; Rb^{+} + Xe; Cs^{+} + Xe	Undef	Vichland, L. A.; Mason, E. A. Repulsive interactions of closed-shell ions with Ar, Kr, and Xe atoms: comparison of beam and transport measurements. J. Chem. Phys. 81, 503 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02307 E	E39: $e + O_2 + He$; $e + O_2 + Ne$; $e + O_2 + Ar$; $e + O_2 + Kr$; $e + O_2 + Xe$; $e + O_2 + H_2$; $e + O_2 + I_2$; $e + O_2 + Br_2$; $e + O_2 + C_2$; $e + O_2 + CO_2$	300 K	Shimamori, H.; Hotta, H. Mechanism of thermal electron attachment to O_2: isotope effect studies with $^{18}O_2$ in rare gases and some hydrocarbons. J. Chem. Phys. 81, 1271 (1984) Japan
02308 T	A17: $Co + H_2$; $Fe + H_2$; $Cu + H_2$	Undef	Siegbahn, E. M.; Blomberg, M.R.A.; Bauschlicher, C. W., Jr. Potential energy surfaces of MH_2 (M = Co, Fe, and Cu). J. Chem. Phys. 81, 1373 (1984) Sweden
02309 T	D39: NO + Pt	600-1400 K	Asscher, M.; Somorjai, G. A.; Zeiri, Y. Vibrational excitation and deexcitation rates of molecules adsorbed on metal surfaces. J. Chem. Phys. 81, 1537 (1984) United States
02310 T	A14: $O + H_2$; $O + D_2$	200-2000 K	Bowman, J. M.; Wagner, A. F.; Walch, S. P.; Dunning, T. F., Jr. Reaction dynamics for $O(^3P) + H_2$ and D_2. IV. Reduced dimensionality quantum and quasiclassical rate constants with an adiabatic incorporation of the bending motion. J. Chem. Phys. 81, 1739 (1984) United States
02311 T	E33: $e + Ba^+$	30-10000 eV	Gemma, P. S.; Aryafar, M.; Gately, L. F. Electron-impact excitation cross sections for Ba II. J. Chem. Phys. 81, 2187 (1984) United States
02312 E	D11: $H_2 + W$	10-200 kJ/mol	Auerbach, D. J.; Pfnür, H. E.; Bartner, C. T.; Schlaegel, J. E.; Lee, J.; Madix, R. J. Kinetic energy and angular dependence of activated dissociative adsorption of H_2 on W(111): observed insensitivity to incidence angle. J. Chem. Phys. 81, 2515 (1984) United States
02313 E	A11: $H_2^{**} + He$; $H_2^{**} + Ne$; $H_2^{**} + Kr$; $H_2^{**} + Xe$; $H_2^{**} + O_2$	0.5 eV	Kemper, P. R.; Bowers, M. T. Collisional deactivation of vibrationally excited H_2^+. J. Chem. Phys. 81, 2638 (1984) United States
02314 T	A17: $H_2C + H_2O$	Undef	Carravetta, V.; Clementi, E. Water-water interaction potential: an approximation of the electron correlation contribution by a functional of the SCF density matrix. J. Chem. Phys. 81, 2646 (1984) United States
02315 T	A33: $H + H_2^+$	3.2-3.8 eV	Rayne, M. R. Rotational energy transfer in $H + H_2(v)$ inelastic collisions. J. Chem. Phys. 81, 2684 (1984) United States
02316 T	A03: $K^* + He$; $F^* + H$	0-0.5 eV	Nestdagh, J. M. Polarization induced by atomic collision into an excited state. Influence of the nuclear spin. J. Phys. [Orsay] 45, 197 (1984) France
02317 E-T	A02: $Ar^* + Ar$ A11: $Ar^* + Ar$ A17: $Ar^* + Ar$ A18: $Ar^* + Ar$	40-180 meV	Robert, J.; Eccerski, V.; Colomb de Daunant, I.; Vassiliev, G.; Baudon, J. $Ar^*(3p^5\ 4s, {}^3P_{2,2})$ on Ar $(3p^6\ {}^1S_0)$ collisions at thermal energies. J. Phys. [Orsay] 45, 225 (1984) France
02318 E-T	B31: Xe^*		Lepoigne, J. P.; Grandin, J. P.; Husson, X.; Hucel, B. Diamagnetic behaviour of xenon Rydberg states studied by the R. F. optogalvanic method. J. Phys. [Orsay] 45, 249 (1984) France
02319 T	A36: $C^{6+} + H$; $C^{6+} + H$; $He^{(0)+} + H$	3.11x10^{9}-1.8 x10^{9} eV	Salin, A. Intrashell mixing following electron capture from atomic hydrogen targets by slow ions. I. Fully stripped projectiles. J. Phys. [Orsay] 45, 671 (1984) France
02320 E-T	A36: $O^+ + O$	3.01-13 keV	Pawlowska, Z.; Pauchais, P. Charge transfer between atomic and ionic oxygen. J. Phys. [Orsay] 45, 867 (1984) Poland
02321 E-T	A37: $K^* + He$; $F^* + Ar$; $H_2^* + He$; $H_2^* + Ar$; $He^* + He$; $He^{(0)+} + He$; $He^* + Ar$ A38: $He^* + He$; $He^* + Ar$	0.4-2.0 MeV/amu	Scheder, J.; Letz, R.; Burkhard, H.; Frischkorn, H. J.; Hofmann, E.; Koschar, P.; Groeneveld, K. O.; Berenyi, D.; Kover, A.; Szabo, G. Target ionization and projectile electron loss in simple collision systems. J. Phys. [Orsay] Lett. 45, L-269 (1984) France

Ref. No.	Reactants	Energy Range	Reference
32322 E-T	A36: $H^0 + He$; $H^0 + H_2$ A18: $H^0 + He$; $H^0 + H_2$	2.82-7.43 MeV	Rivarola, R. D.; Salin, A.; Stockli, M. P. Differential electron-capture cross-sections in high energy ion-atom collisions: comparison of experiment and theory for the Thomas peak. J. Phys. [Orsay] Lett. 45, L-259 (1984) Argentina
32323 E	E39: $e + He$ E17: $e + He$	56-58 eV	Befrance, A.; Hagene, M.; Pasquerault, D. Study of helium resonances by the recoil of atoms excited by electron impact is a supersonic beam. J. Phys. [Orsay] Lett. 45, L-827 (1984) France
32324 T	D31: $Ba^0 + Ba$ D39: $Ba^0 + Ba$	Undef	Hylie, J. E.; Sipe, J. E. Quantum electrodynamics near an interface. Phys. Rev. A 30, 1185 (1984) Canada
32325 T	E32: $e + He$	200-400 eV	Allen, L. J.; Berger, M. Local potentials equivalent to matrix effective potentials for e-He scattering at 200 and 400 eV. Phys. Rev. A 30, 1237 (1984) South Africa
32326 T	E32: $e + He$ E17: $e + He$ E19: $e + He$	5-50 eV	Bangupta, A.; Bhatia, A. K. Scattering of electrons from neon atoms. Phys. Rev. A 30, 1201 (1984) United States
32327 E	E32: $e + He$ E17: $e + He$ E19: $e + He$	2-19 eV	Golden, D. E.; Furst, J.; Bahgeraftah, H. Absolute elastic electron-helium scattering cross-section measurements from 2 to 19 eV. Phys. Rev. A 30, 1247 (1984) United States
32328 E	E32: $e + Na$ E03: $e + Na$ E17: $e + Na$	6-25 eV	Jadamliver, B.; Weiss, F.; Tino, A.; Bodrisca, B. Small-angle (e^-, Na) scattering in the 6-25 eV range. Phys. Rev. A 30, 1255 (1984) United States
32329 E	C37: $H^0 + C$; $H_2^0 + C$; $H_3^0 + C$	2.2-2.4 MeV	Fobayashi, N.; Oda, N. Molecular enhancement of Balmer emissions following foil-induced dissociation of fast H_2^0 and H_3^0 ions. Phys. Rev. A 30, 1294 (1984) Japan
02330 T	A03: H^0 Seq + H Seq; $H^0 + H^0$ A36: H^0 Seq + H Seq; $H^0 + H^0$	10-1000 keV	Ghosh, N.; Datta, S.; Mukherjee, S. C. Calculation of cross sections for electron capture between arbitrary hydrogenic states of target and projectile. Phys. Rev. A 30, 1357 (1984) India
32331 E	H36: $h\nu + Tm$	12-110 eV	Krause, M. O.; Carlson, T. A.; Fahlman, A. Photoelectron spectrometry of manganese vapor between 12 and 110 eV. Phys. Rev. A 30, 1316 (1984) United States
32332 E	B37: Undef		Saha, H. P.; Dahler, J. S.; Jones, D. M. Theory of laser-induced excitation transfer and atomic association. Phys. Rev. A 30, 1345 (1984) United States
02333 E	E05: $e + Ar$ E17: $e + Ar$	6.4 keV	Lahaam-Bennani, A.; Wellenstein, H. F.; Duguet, A.; Cacud, A. Absolute (e,2e) cross sections measured for the 2p orbital of argon. Phys. Rev. A 30, 1511 (1984) France
32334 T	H36: $h\nu + Cl$	2.5-6.3 eV	Hansen, J. E.; Cowan, R. D.; Carter, S. L.; Kelly, H. P. Analysis of resonance structure in the photoionization of atomic chlorine. Phys. Rev. A 30, 1540 (1984) The Netherlands
32335 E	H30: $2h\nu + O$; $2h\nu + H$	226-211 nm	Crosley, D. R.; Bischel, W. K. Relative fine-structure intensities in two-photon excitation. Phys. Rev. A 30, 1546 (1984) United States
32336 T	E36: $e + Ca^+$	3.35-3.25 Ry	Hasser, I.; Baba, Y. Resonant electron capture to high Rydberg states of Ca II. Phys. Rev. A 30, 1558 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02337 T	H06: $h\nu + N_2$	430-832 eV	Lynch, D. L.; McKoy, V. Relaxation effects in molecular K-shell photoionization. Phys. Rev. A 33, 1561 (1986) United States
02338 E	E39: $e + O_2$; $e + O_2 + N_2$; $e + C_2 + CO_2$	Undef	Hegerberg, R.; Crompton, R. W. Diffusion, attachment and attachment cooling of thermal electrons in oxygen and oxygen mixtures. Aust. J. Phys. 36, 831 (1983) Australia
02339 T	A11: $CO^+ + N_2$	100-1000 K	Cacciatore, M.; Capitelli, M.; Billing, G. D. Theoretical semiclassical investigation of the vibrational relaxation of CO colliding with $^{14}N_2$. Chem. Phys. 89, 17 (1984) Italy
02340 E	E03: $e + H_2O$; $e + D_2O$	10-300 eV	Harasaki, J.; Ogawa, T. Isotope effects in the emission cross section of H^+ and D^+ produced by controlled electron impact on H_2O and D_2O. Chem. Phys. 89, 59 (1984) Japan
02341 T	A11: $N_2 + CO^+$	80-1000 K	Paulsen, I. I.; Billing, G. D. Vibrational deactivation of CO(v = 1) by p-H_2. The importance of the higher-order multipole moments. Chem. Phys. 89, 219 (1984) Denmark
02342 P-T	K03: Photoionization	Undef	Manne, R. S. The electronic structure of the elements from gas-phase x-ray photoelectron spectroscopy. Contemp. Phys. 25, 159 (1984) United Kingdom
02343 E	D30: $Ar^+ + Al$; $Ar^+ + Mg$	3-6 keV	Saiki, K.; Tanaka, S. Effect of oxygen adsorption on the ion-induced Auger electron spectra of Mg and Al. Jpn. J. Appl. Phys. Pt. 2 23, L153 (1984) Japan
02344 P-T	J06: Spectra K06: Spectra L36: Spectra		Fawcett, B. C. Classification in the early 1980s of the spectra of highly ionized atoms. J. Opt. Soc. Am. B 1, 195 (1984) United Kingdom
02345 E	D32: $H_2^+ + C$; $H + C$ D17: $H_3^+ + C$; $H + C$	0.02-3000 eV	Tanabe, S.; Sone, K. Chemical erosion yield of graphite simultaneously bombarded with energetic protons and thermal atomic hydrogens. J. Nucl. Mater. 123, 1179 (1984) Japan
02346 T	D11: $He + Al$; $He + Hg$; $He + Cu$; $He + Au$; $He + Ag$; $Fe + Li$; $He + Na$; $He + K$	Undef	Nordlander, P.; Harris, J. The interaction of helium with smooth metal surfaces. J. Phys. C 17, 1181 (1984) Sweden
02347 T	C32: $e + Al$; $e + Cu$ C08: $e + Al$; $e + Cu$ C05: $e + Al$; $e + Cu$	20 keV	Salvat, F.; Parellada, J. Penetration and energy loss of fast electrons through matter. J. Phys. D 17, 1585 (1984) Spain
02348 E	D13: $e + TiC$; $e + SiC$; $e + TiO_2$; $e + MgAl_2C_4$; $e + Al_2O_3$; $e + Si$	300 eV	Auciello, O.; Hassz, A. A.; Steingsky, P. C. Gas release from 1st wall coatings under electron impact. J. Vac. Sci. Technol. A 2, 633 (1984) Canada
02349 T	D02: $H^+ + Fe$; $F^+ + Fe$ D'2: $H^+ + C + Fe$; $H^+ + O + SS$	10^2-5×10^3 eV	Bastasz, R. Ion impact desorption mechanisms: the role of the substrate. J. Vac. Sci. Technol. A 2, 638 (1984) United States
02350 T	D39: $H + Cs$; $H + Cs + H$	150 eV	Binkes, J. N.; Karr, A. N.; Wiener, E.; Preesan, A. J.; Chubb, S. B. Generation of H-, D- ions on composite surfaces with application to surface plasma ion source systems. J. Vac. Sci. Technol. A 2, 673 (1984) United States
02351 E	D18: H + Inconel	Undef	Sinter, J.; Saelbroeck, F. G.; Wienhold, P.; Bota, E.; Bosso, T. Characterization of the 1st wall of Textor with respect to hydrogen recycling. J. Vac. Sci. Technol. A 2, 675 (1984) West Germany
02352 E	D03: $Ar^+ + Fe$	3 keV	Young, C. E.; Calaway, W. F.; Pellin, M. J.; Gruen, D. M. Velocity and electronic state distributions of sputtered Fe atoms by laser-induced fluorescence spectroscopy. J. Vac. Sci. Technol. A 2, 653 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02353 E	D33: $Ar^+ + Cr$; $Ar^+ + Ca$; $Kr^+ + Cr$; $Kr^+ + Ca$	7-15 keV	Benissky, W.; Betz, G.; Girgis, K. Ground state and excited state sputtering Doppler-shift laser-fluorescence studies of Cr and Ca targets. J. Vac. Sci. Technol. A 2, 698 (1984) West Germany
02354 E-T	D37: $He + Pt$ D11: $H + Pt$	300 K	Batra, I. P.; Barker, J. A.; Auerbach, D. J. Helium scattering from (1x1) H-Pt(111). J. Vac. Sci. Technol. A 2, 943 (1984) United States
02355 E	D34: $e + La$	833-853 eV	Chamberlain, M. B.; Burr, A. F.; Liefeld, R. J. Threshold electron excitation of Auger-electron and x-ray emission in La. J. Vac. Sci. Technol. A 2, 973 (1984) United States
02356 E	D13: $h\nu + CO$; $h\nu + N_2$	23-32 eV	Sambe, H.; Ramaker, D. E. Photon-stimulated ion desorption from condensed CO and N_2. J. Vac. Sci. Technol. A 2, 1311 (1984) United States
02357 E	D11: $H_2 + Ni$; $C_2 + Ni$	300 K	Villarrubia, J. S.; Bo, H. Kinetics of the adsorption and reaction of H_2 and O_2 on nickel (111). J. Vac. Sci. Technol. A 2, 1319 (1984) United States
02358 E	D11: $O_2 + Pt$	123 K	Norton, P. R.; Bindner, R. E.; Griffiths, K. The adsorption of oxygen on Pt (133)-(1x1) and Re sub x surfaces at 123-K. J. Vac. Sci. Technol. A 2, 1328 (1984) Canada
02359 E	D13: $h\nu + H_2C + Pd$; $h\nu + H_2O + Pt$	19-24 eV	Stulen, R. H.; Rosenberg, R. A. High resolution photon-stimulated desorption of H^+ from H_2O on Pd and Pt. J. Vac. Sci. Technol. A 2, 1251 (1984) United States
02360 E	D13: $h\nu + C + Cr$	25-80 eV	Stockbauer, R.; Ramaker, D. E.; Burtel, E.; Burtz, . . L.; Madey, T. E. Mechanisms for photon stimulated desorption of O^+ from Cr (110). J. Vac. Sci. Technol. A 2, 1053 (1984) United States
02361 E	D07: $He + NaF$; $He + GaSe$; $He + Ag$; $He + Bi$	20-100 meV	Toennies, J. P. Photon inelastic scattering of He atoms from single crystal surfaces. J. Vac. Sci. Technol. A 2, 1355 (1984) West Germany
02362 E	D07: $He + Ag$	25 meV	Lambert, W. R.; Trevor, P. L.; Doak, R. B.; Cardillo, M. J. Inelastic helium scattering from Ag (111) and Ag (111) C(2x2) Cl. J. Vac. Sci. Technol. A 2, 1366 (1984) United States
02363 P	D02: $H^+ + Si_3N_4$; $H_2^+ + Si_3N_4$	100-1000 eV	Zeln, P. C.; Beckers, L. J. Sputtering of silicon nitride with hydrogen ions. J. Vac. Sci. Technol. B 2, 84 (1984) The Netherlands
02364 T	D32: Undef	Undef	Zeln, P. C. Some useful yield estimates for ion beam sputtering and ion plating at low bombarding energies. J. Vac. Sci. Technol. B 2, 151 (1984) The Netherlands
02365 T	E32: $e + H$ E17: $e + H$	15-35 keV	Geltman, S.; Hesbet, R. K. High-energy forward elastic scattering of electrons: Born amplitudes for a pseudostate model of atomic hydrogen. Phys. Rev. A 33, 1636 (1984) United States
02366 T	A36: Undef	Undef	Garrett, J. S-matrix theory of charge transfer. Phys. Rev. A 30, 1683 (1984) United States
02367 P	A36: $He^{2+} + He$; $He^{++} + He$; $He^{3+} + He$; $He^{4+} + He$; $He^{7+} + He$; $He^{8+} + He$	72-523 eV	Schneisser, C.; Cocke, C. L.; Hans, B.; Meyerhof, W. Energy-gain spectroscopy studies of electron capture from helium by slow multiply charged mass ions. Phys. Rev. A 33, 1661 (1984) United States
02368 T	A33: $H^+ + H^+$ A37: $H^+ + H^+$ A11: $H^+ + H^+$ E33: $e + H^+$	10-2-100 keV	Shirai, T.; Nakai, Y.; Nakamura, H. Ionization collisions between two excited atoms: application of the Glauber amplitude in the framework of the impulse approximation. Phys. Rev. A 33, 1672 (1984) Japan

Ref. No.	Reactants	Energy Range	Reference
02369 E	C02: He^{2+} + C; Li^{3+} + C; C^{3+} + C; C^{4+} + C	3 MeV/amu	Cowern, N.E.B.; Read, P. M.; Sofield, C. J.; Bridwell, L. B.; Lucas, M. W. Charge-changing energy loss, higher-order Z_1 dependence, and pre-equilibrium behavior in the stopping power for energetic ions in solids. Phys. Rev. A 30, 1682 (1984) United Kingdom
02370 T	A03: H + Cs* A36: H + Cs*; H^- + Cs* A17: H + Cs	0.1-10 keV	Olson, R. E.; Kimura, M.; Sato, H. Molecular-state cross-section calculations for H + Cs coming from or going to H^- + Cs^+. Phys. Rev. A 30, 1692 (1984) United States
02371 T	E33: e + Ar E17: e + Ar	16-80 eV	de Paixao, F. J.; Padial, N. T.; Csanak, G. Electron-photon coincidence parameters for the 4s' [1/2],° ($^1P_1$) and 4s [3/2],° ($^3P_1$) states of argon. Phys. Rev. A 30, 1697 (1984) Brazil
02372 T	C02: H^+ + PEBT; He^+ + PEBT	200-1600 keV	Kaneko, T. Z_2 dependence of the stopping power and the effective charge for keV helium-ion beams. Phys. Rev. A 30, 1714 (1984) Japan
02373 T	A36: H^+ + Cs; H^+ + O; H^+ + Ne; H^+ + Ar A18: H^+ + Ar	0.2-20 MeV	Miraglia, J. E. Electron capture in asymmetric collisions. Phys. Rev. A 30, 1721 (1984) Argentina
02374 T	E33: Undef	Undef	Takatsuka, K.; McKoy, V. Theory of electronically inelastic scattering of electrons by molecules. Phys. Rev. A 30, 1734 (1984) United States
02375 T	E33: e + H_2 E17: e + H_2	13-30 eV	Lima, M.A.P.; Gibson, T. L.; Takatsuka, K.; McKoy, V. Multichannel Schwinger variational cross sections for electron-impact excitation of the b $^3\Sigma$ (sub u)+ state in H_2. Phys. Rev. A 30, 1741 (1984) United States
02376 E	H36: 2hν + Cs	950-830 nm	Compton, R. N.; Stockdale, J.A.D.; Cooper, C. D.; Tang, X.; Lambropoulos, P. Photoelectron angular distributions from multiphoton ionization of cesium atoms. Phys. Rev. A 30, 1766 (1984) United States
02377 E	H06: 2hν + Cs; 3hν + Cs	950-830 nm	Christian, W.; Compton, R. N.; Stockdale, J.A.D. Miller, J. C.; Cooper, C. D.; Tang, X.; Lambropoulos, P. Near-infrared multiphoton ionization of cesium. Phys. Rev. A 30, 1775 (1984) United States
02378 T	H06: hν + Na*; hν + K*	0.1-4.0 Ry	Aymar, A. Z.; Manson, S. T. Photoionization of excited 3S states in Na and K: investigation of the l going to l - 1 zeros. Phys. Rev. A 30, 1795 (1984) United States
02379 T	H36: hν + Cs	719-718 nm	Pindzola, M. S.; Glasser, A. H.; Payne, M. G. ac Stark shifts for cesium and their effect on ionization line shapes. Phys. Rev. A 30, 1800 (1984) United States
02380 T	H06: hν + Cl	0.6-1.3 a.u.	Shahabi, S.; Starace, A. F.; Chang, T. N. Photoionization of atomic chlorine above the ^1S threshold. Phys. Rev. A 30, 1819 (1984) United States
02381 T	B01: Ba		Jaffe, S. M.; Kachru, R.; Tran, N. H.; Van Linden van den Heuvell, H.; Gallagher, T. F. Ba autoionizing states in strong electric fields. Phys. Rev. A 30, 1828 (1984) United States
02382 T	B01: Li H06: hν + Li	Undef	Ritchie, B. Laser probe of the atomic ionization continuum: stimulated recombination into an excited state. Phys. Rev. A 30, 1849 (1984) United States
02383 T	A37: H^+ + Au; H^+ + U	0.1-3.0 MeV	Chen, M. H. Effects of relativity and wave functions on atomic L-and M-shell ionization by protons. Phys. Rev. A 30, 2302 (1984) United States
02384 T	E33: e + CO E17: e + CO	1.8 eV	Chang, E. S.; Antoni, T.; Jung, K.; Ehrhardt, H. Coherent resonance and dipole scattering in rotational excitation of molecules by slow electrons. Phys. Rev. A 30, 2306 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
02385 T	E06: e + Mg^{+}; e + B^{2+}; e + C^{3+}; e + O^{5+}; e + Cl^{6+}	3-12 eV	Pradhan, A. K. Theoretical calculations for dielectronic recombination cross sections. Phys. Rev. A 30, 2141 (1984) United States
02386 E	B07: hν + Be^{-}	1.5-2.5 eV	Bae, Y. K.; Peterson, J. R. Observation of the metastable negative beryllium ion, Be^{-}[^{4}P(sup o)]. Phys. Rev. A 30, 2145 (1984) United States
02387 T	E03: e + H E17: e + H	54 eV	Madison, D. H. Full second-order distorted-wave calculation without approximations for atomic excitation by electron impact. Phys. Rev. Lett. 53, 42 (1984) United States
02388 T	B36: hν + H	0.01-30 eV	Fazic, P. M.; Copeland, G. E. Cooper-type minima in multipole cross sections of atomic hydrogen. Phys. Rev. Lett. 53, 163 (1984) United States
02389 E	A36: Xe + Au	197 MeV/u	Anholt, R.; Andriamonje, S. A.; Morenzoni, E.; Stoller, C.; Molitoris, J. D.; Meyerhof, W. E.; Bowman, H.; Xu, J. S.; Xu, Z. Z.; Rasmussen, J. O.; Hoffmann, D.H.H. Observation of radiative capture in relativistic heavy-ion-atom collisions. Phys. Rev. Lett. 53, 234 (1984) United States
02390 T	B36: hν + Th; hν + U; hν + La	10-850 eV	Wendin, G. Photoionization of metallic lanthanum, thorium, and uranium in a local-density-based random-phase approximation. Phys. Rev. Lett. 53, 724 (1984) France
02391 E	A34: H_3^{+} + He A18: H_3^{+} + He	0.33-1.61 keV/amu	Alvarez, I.; Cisneros, C.; de Urquijo, J.; Morgan, T. J. Three-body dissociation of triatomic hydrogen molecular ions. Phys. Rev. Lett. 53, 740 (1984) Mexico
02392 E	C32: H^{+} + Cu; H^{+} + Co; H^{+} + V; H^{+} + Ni; H^{+} + C	50-500 keV	Grygoriev, V. G.; Meshov, F. G.; Puzanov, A. A.; Urmancv, A. B. Effects of electronic structure on ion stopping cross-section in solids. Phys. Status Solidi A 83, 573 (1984) Soviet Union
02393 T	D37: H^{+} + W	10 MeV	Vyatkin, E. G.; Tatatin, A. N.; Vorobiev, S. A. Computer simulation of glancing scattering of a fast proton beam by a crystal surface. Phys. Status Solidi B 122, 25 (1984) Soviet Union
02394 T	C32: He^{2+} + Si	14 MeV	Pathak, A. P. Position dependence of channeling stopping power. Phys. Status Solidi B 122, 171 (1984) India
02395 E-T	F32: Electron scattering	Undef	Slevin, J. Coherence in inelastic low-energy electron scattering. Rep. Prog. Phys. 47, 461 (1984) United Kingdom
02396 T	B01: H_2; H; H_2^{+} A17: H_2; H_2^{+}	Undef	Turbiner, A. V. Hydrogen molecule in a strong magnetic field. Sov. Phys.-JETP Lett. 38, 618 (1983) Soviet Union
02397 T	D37: He + Pt	30 meV	Drolshagen, G.; Heller, E. J. A wavepacket approach to gas-surface scattering: application to surfaces with imperfections. Surf. Sci. 139, 260 (1984) United States
02398 E	D33: Ar^{+} + CuNi	7 keV	Loxton, C. M.; Tsong, I.S.T. A comparison of secondary ion and photon yields from ion bombarded CuNi alloys. Surf. Sci. 139, 453 (1984) United States
02399 T	E03: e + S^{2+}	Undef	Ho, Y. K.; Henry, R. J. W. Collision strengths for Lambda 1199 and lambda 1729 of S III. Astrophys. J., Part 1 284, 435 (1984) United States
02400 T	B36: hν + Fe^{9+}	Undef	Cowan, R. D.; Bromage, G. E.; Fawcett, B. C. On the theoretical calculation of wavelengths and oscillator strengths for Fe X and similar spectra. Mon. Not. R. Astron. Soc. 210, 439 (1984) United States
02401 E-T	D37: Review J04: Reflection K30: Reflection	0.01-10 keV	Eckstein, W.; Verbeek, H. Reflection of light ions from solids. Nucl. Fusion (Special Issue) p. 12 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
02462 E-T	B11: Review J08: Trapping K30: Trapping	3.3-18.3 keV	Wilson, R. I. Hydrogen and helium trapping. Nucl. Fusion (Special Issue) p. 28 (1984) United States
02433 E-T	B13: Review J30: Desorption K30: Desorption	1.0-3.0 keV	Taglauer, E. Desorption. Nucl. Fusion (Special Issue) p. 43 (1984) West Germany
02434 E-T	J30: Evaporation K30: Evaporation		Langley, R. A. Evaporation. Nucl. Fusion (Special Issue) p. 55 (1984) United States
02465 E-T	B02: Review J08: Sputtering K30: Sputtering	3.8-53.3 keV	Bohdansky, J. Sputtering. Nucl. Fusion (Special Issue) p. 61 (1984) West Germany
02436 E-T	B02: Review J30: Sputtering K30: Sputtering	0.08-100 keV	Roth, J. Chemical effects in sputtering. Nucl. Fusion (Special Issue) p. 72 (1984) West Germany
02437 E-T	K30: Blistering		Wilson, R. I. Blistering. Nucl. Fusion (Special Issue) p. 85 (1984) United States
02438 E-T	B04: Review D06: Review J04: Electron reflection; Secondary electron emission; Ion secondary electron emission K04: Electron reflection; Secondary electron emission; Ion secondary electron emission	0.35-23 keV	Thomas, R. A. Secondary electron emission. Nucl. Fusion (Special Issue) p. 94 (1984) United States
02439 E-T	K04: Unipolar arcing		Miedzinowski, P. Unipolar arcing. Nucl. Fusion (Special Issue) p. 135 (1984) United States
02410 T	C02: e + C C05: e + C	600-1600 eV	Hwei, C. H. Influence of multiple scattering on energy loss straggling for electrons. Thin Solid Films 111, 83 (1984) Taiwan
02411 T	B31: H-like atoms		Borsch, H. J.; Hohlenkamp, B. Field ionization of Rydberg atoms: a semiclassical treatment of complex energy states in intense electric fields. Z. Phys. A 319, 107 (1983) West Germany
02412 T	A33: Mg° + He; Mg° + Ar; Mg° + Kr; Mg + He; Mg + Ar; Mg + Kr	3.1-133 keV	Haepfle, H.; Kempter, V. Theoretical study of the 3 p-excitation in Mg° and Mg°-inert gas collisions. Z. Phys. A 314, 283 (1983) West Germany
02413 E	A07: C° + C; CC° + C C05: C° + C; CC° + C C06: C° + C; CC° + C	83 keV/amu	Roscher, F.; Frischkorn, H. J.; Groeneveld, P. O.; Szabo, G. Carbon Auger electron line shape after beam-foil excitation of molecular ions. Z. Phys. A 315, 13 (1984) West Germany
02414 T	A33: S + Pb; Ni + Pb A18: S + Pb; Ni + Pb	187-383 MeV	Jakubassa-Amundsen, D. H. On the anisotropy of delta-electrons from slow heavy-ion collisions in the eikonal approximation. Theta (sub f) and Phi (sub f). Z. Phys. A 315, 21 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
02415 T	A06: H^+ + C; H^+ + Au C07: H^+ + C; H^+ + Au	2.06×10^{8} cm/s	Kupfer, E.; Schroder, H. Polarization of n = 3-terms after electron capture by beam-foil interaction. Z. Phys. A 315, 35 (1984) West Germany
02416 T	B31: H		Arteca, G. A.; Fernandez, F. M.; Castro, E. A. A new variational approach to the hydrogen atom in magnetic fields. Z. Phys. A 315, 255 (1984) Argentina
02417 E	A12: Na + K; Na + Rb; Na + Cs	Thermal	Vadla, C.; Niemax, K. The far-wing broadening of the Na D lines by K, Rb and Cs and the electrostatic interaction potentials of the NaK, NaRb, and NaCs molecules. Z. Phys. A 315, 263 (1984) West Germany
02418 T	B07: hν + e + H; hν + e + He E03: e + hν + H; e + hν + He H04: hν + H; hν + He	50-500 eV	Jetzke, S.; Faisal, F.H.M.; Hippler, R.; Lutz, H. O. Simultaneous electron-photon excitation of hydrogen and helium. Z. Phys. A 315, 271 (1984) West Germany
02419 E	A36: Br^{27+} + Ne; Br^{10+} + Ne	156 MeV	Kelbch, S.; Schmidt-Bocking, H.; Ullrich, J.; Schuch, R.; Justiniano, E.; Ingwersen, H.; Cocke, C. L. The contribution of K-electron capture for the production of highly charged Ne recoil ions by 156 MeV bromine impact. Z. Phys. A 317, 9 (1984) West Germany
02420 E	A04: H_2^+ + H_2; H_2^+ + D_2; H_2^+ + Kr A36: H_2^+ + H_2; H_2^+ + D_2; H_2^+ + Kr	10 keV	Baldreich, U.; Lutz, H. O.; Ewald, H. Center-of-mass deflections in two processes: collision-induced dissociations of 10 keV H_2^+ ions in their electronic ground state 1 s Sigma (sub g) and dissociative electron capture. Z. Phys. A 317, 23 (1984) West Germany
02421 E	A36: Ne^{2+} + Ar; Ne^{2+} + Kr	600 eV	Kahlert, H. J.; Huber, B. A. Electron transfer in low energetic Ne^{2+}/Ar, Kr collisions. Z. Phys. A 317, 139 (1984) West Germany
02422 T	E32: e + Hg	46-234 keV	Buhring, W. An approximate phase shift formula applied to elastic scattering of electrons by mercury atoms. Z. Phys. A 317, 241 (1984) West Germany
02423 E	A06: Si^{13+} + Ar; Si^{14+} + Ar	125-153 MeV	Andriamonje, S.; Chemin, J. F.; Routier, J.; Saboya, B.; Scheurer, J. N.; Gayet, R.; Salin, A.; Laurent, H.; Aguer, P.; Thibaud, J. P. Production of projectile and target K x rays by single and multiple electron-capture in collisions of Si^{14+} and Si^{13+} ions with Argon atoms at 4.5 and 5.5 MeV/amu. Z. Phys. A 317, 251 (1984) France
02424 E	A03: H + Ne; D + Ne	10-1000 eV	Grosser, J.; Kruger, W. Hydrogen 2s and 2p excitation in low energy H, D + Ne collisions. Z. Phys. A 318, 25 (1984) West Germany
02425 T	B31: H_2^+		Le Guillou, J. C.; Zinn-Justin, J. The H_2^+ ion in an intense magnetic field: improved adiabatic approximations. Ann. Phys. (NY) 154, 440 (1984) France
02426 T	E03: e + C^+	5000-40000 K	Hayes, M. A.; Nussbaumer, H. The C II 2325 ^4P multiplet and the 158 μm transition. Astron. Astrophys. 139, 233 (1984) Switzerland
02427 T	E03: e + Fe^{11+}	6.2 T	Withbroe, G. L.; Raymond, J. C. Plasma diagnostics for the outer solar corona: UV and XUV Fe XII lines. Astrophys. J., Part 1 285, 347 (1984) United States
02428 T	A17: Tl + Xe; Tl + Ar; Tl + Kr	Undef	Czuchaj, E.; Sienkiewicz, J. Improved pseudopotential calculations of the adiabatic potentials and oscillator strengths of Tl-heavy noble gas systems. Z. Naturforsch. A 39, 513 (1984) Poland
02429 T	A03: He^+ + Rb A36: He^+ + Rb	400 K	Tuman, E. I.; Tishchenko, N. P.; Shustov, I. P. Theory of charge-exchange transitions to excited states in ion-atom collisions. Sov. Phys.-Dokl. 28, 641 (1984) Soviet Union
02430 T	C31: Undef C05: Undef	250 keV/amu	Remizovich, V. S.; Rogozkin, D. B.; Ryazanov, M. I. Spectrum of particles at great depths in the passage of a narrow beam of fast charged particles through matter. Sov. Phys.-Dokl. 28, 646 (1984) Soviet Union

Ref. No.	Reactants	Energy Range	Reference
02431 E	A07: N^{+} + Al; Ne^{+} + Al	3.2–3.4 MeV/amu	Ootsuka, A.; Kawatsura, K.; Komaki, K.; Fujimoto, F.; Ozawa, K.; Terasawa, M. Projectile dependence of KL^{n} vacancy production cross sections of Al by N and Ne ion bombardments. J. Phys. Soc. Jpn. 53, 2215 (1984) Japan
02432 E	A07: H^{+} + Au	0.1–10 MeV	Mukoyama, T. Electronic relativistic effect in inner-shell ionization cross section and electron momentum distribution. J. Phys. Soc. Jpn. 53, 2219 (1984) Japan
02433 T	A06: C^{4+} + He; C^{5+} + He; C^{6+} + He; C^{7+} + He; C^{8+} + He; C^{9+} + He; N^{4+} + He; N^{5+} + He; N^{6+} + He; N^{7+} + He; N^{8+} + He; N^{9+} + He; O^{4+} + He; O^{5+} + He; O^{6+} + He; O^{7+} + He; O^{8+} + He; O^{9+} + He; F^{4+} + He; F^{5+} + He; F^{6+} + He; F^{7+} + He; F^{8+} + He; F^{9+} + He; Ne^{4+} + He; Ne^{5+} + He; Ne^{6+} + He; Ne^{7+} + He; Ne^{8+} + He; Ne^{9+} + He; Kr^{10+} + He; Kr^{11+} + He; Kr^{12+} + He; Kr^{13+} + He; Kr^{14+} + He; Kr^{15+} + He; Kr^{16+} + He; Kr^{17+} + He; Kr^{18+} + He; Kr^{19+} + He; Kr^{20+} + He; Kr^{21+} + He; Kr^{22+} + He; Kr^{23+} + He; Kr^{24+} + He; Kr^{25+} + He	600 eV/amu	Kimura, M.; Iwai, T.; Kaneko, Y.; Kobayashi, N.; Matsumoto, A.; Ohtani, S.; Okuno, K.; Takagi, S.; Tawara, H.; Tsurubuchi, S. Landau-Zener model calculations of one-electron capture from He atoms by highly stripped ions at low energies. J. Phys. Soc. Jpn. 53, 2224 (1984) Japan
02434	K30: Radiation		McWhirter, R.W.P.; Summers, H. P. Atomic radiation from low density plasma. p. 51 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United Kingdom
02435	K08: Transport		Hogan, J. T. Properties of magnetically confined plasmas in tokamaks. p. 113 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United States
02436	K08: Spectroscopy		Peacock, N. J. Diagnostics based on emission spectra. p. 143 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United Kingdom
02437	K08: Laser diagnostics		Evans, D. E. Laser diagnostics. p. 191 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United Kingdom
02438	K08: Electron cyclotron emission		Boyd, D. A. Plasma diagnostics using electron cyclotron emission. p. 227 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, New York, (1984) United States
02439	K08: Particle plasma diagnostics		Barnett, C. F. Particle plasma diagnostics. p. 249 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United States
02440	K08: Bremsstrahlung		Pratt, R. H.; Feng, I. J. The electron bremsstrahlung spectrum from neutral atoms and ions. p. 337 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United States
02441	K08: Neutral beam heating		Cordey, J. G. Trapping and thermalization of fast ions. p. 327 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United Kingdom
02442	K08: Neutral beam heating		Green, T. S. Neutral-beam formation and transport. p. 339 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United Kingdom
02443	K08: Alpha particle heating		Post, D. E. Alpha-particle heating. p. 381 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02444	E38: Boundary plasma		Harrison, M.F.A. Boundary plasma. p. 395 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United Kingdom
02445	E08: Hot-dense plasmas		Weisheit, J. C. Atomic phenomena in hot dense plasmas. p. 441 in Applied Atomic Collision Physics, Vol. 2, C. F. Barnett and M.F.A. Harrison, Eds. Academic Press, Inc., New York, (1984) United States
02446 E	A03: PRBT* + PIBT A36: PRBT* + PIBT	82-470 MeV/amu	Anholt, R.; Meyerhof, W. E.; Stoller, C.; Morenzoni, E.; Andriamonje, S. A.; Molitoris, J. D.; Baker, O. K.; Hoffmann, D.H.H.; Bowman, H.; Xu, J. S.; Xu, Z. Z.; Frankel, K.; Murphy, D.; Crowe, K.; Rasmussen, J. O. Atomic collisions with relativistic heavy ions: target inner-shell ionization. Phys. Rev. A 30, 2234 (1984) United States
02447 E	E02: $e + N_2$ E17: $e + N_2$	1-19 eV	Furst, J.; Mahgerefteh, M.; Golden, D. E. Absolute total electronically elastic differential $e^- - N_2$ scattering cross-section measurements from 1 to 19 eV. Phys. Rev. A 30, 2256 (1984) United States
02448 E	A36: $H^+ + H_2$ A18: $H^+ + H_2$	1-3 keV	Nuckman, V.; Martin, S. J.; Jakacky, J., Jr.; Pollack, E. Electron capture in $H^+ + H_2$. Phys. Rev. A 30, 2261 (1984) United States
02449 T	E33: $e + H_2$ E36: $e + H_2$ E39: $e + F_2$	0.1-1.0 eV	Hong, C. P.; Light, J. C. Application of R-matrix theory to resonant reactive electron-molecule scattering: vibrational excitation and dissociative attachment of H_2 and F_2. Phys. Rev. A 30, 2264 (1984) United States
02450 T	D12: $H^+ + Al$	1-4 MeV	Ishii, K.; Morita, S. Continuous x rays produced by light-ion-atom collisions. Phys. Rev. A 30, 2278 (1984) Japan
02451 E	C36: $D^+ + C$ C07: $D^+ + C$	10-500 keV/amu	Baudinet-Robinet, Y.; Dumont, P. D. Populations of np terms (n = 2-4) for 10-500-keV/amu deuterium ions exiting from carbon foils. Phys. Rev. A 30, 2287 (1984) Belgium
02452 T	A36: $H^+ + H$ A18: $H^+ + H$	1-300 MeV	Gonzalez, A. D.; Miraglia, J. E. Comparison between the mechanical and radiative electron-capture processes at high energies. Phys. Rev. A 30, 2292 (1984) Argentina
02453 E	D34: $Ne^+ + Ne$; $Ar^+ + Ne$; $Kr^+ + Ne$	2.5-10 keV	Grizzi, O.; Baragiola, R. A. Ne K-shell Auger-electron emission in slow-ion-surface collisions. Phys. Rev. A 30, 2297 (1984) Argentina
02454 T	A12: $Na^* + He$; $Na^* + Ar$; $Na^* + Kr$; $Na^* + Xe$ R38: $h\nu + Na$	333 K	Rothberg, L. J.; Bloembergen, N. High-resolution studies of collision-induced population grating resonances in optical four-wave mixing in sodium vapor. Phys. Rev. A 30, 2327 (1984) United States
02455 E	A12: $Ba^* + Ar$; $Ba^* + Xe$ R34: $h\nu + Ba$	933 K	Alford, W. J.; Andersen, N.; Burnett, K.; Cooper, J. Collisional redistribution of light: far-wing line shapes and polarizations for the Ba-(Ar,Xe) systems. Phys. Rev. A 30, 2366 (1984) United States
02456 E	B31: He^*		Van de Water, W.; Mariani, D. R.; Koch, P. M. Ionization of highly excited helium atoms in an electric field. Phys. Rev. A 30, 2395 (1984) United States
02457 T	R07: Undef F06: Undef	Undef	Lami, A.; Rahman, N. K.; Faisal, F.H.M. Stimulated electron-ion (-atom) recombination at a resonance. Phys. Rev. A 30, 2433 (1984) Italy
02458 T	R07: Undef	14.3-14.6 eV	Temkin, A. Electron-atom spin asymmetry and two-electron photodetachment: addenda to the Coulomb-dipole threshold law. Phys. Rev. A 30, 2737 (1984) United States
02459 T	B37: $H^+ + H$		Bachau, R.; Shakeshaft, R. Proton-hydrogen-atom scattering in a nearly resonant laser field. Phys. Rev. A 30, 2752 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02460 E	A03: Rb* + Xe	333 K	Goeller, L. E.; McMillen, C. E.; Smith, K. A.; Dunning, F. B. State changing in Rb (ns, np, nd)-Xe collisions. Phys. Rev. A 33, 2756 (1986) United States
02461 T	B07: e + H		Bandel, S. K.; Ghosh, A. S. Electron-hydrogen ionization in the presence of a laser field. Phys. Rev. A 33, 2759 (1986) India
02462 E	A18: He* + Kr; He* + Xe	1-5 km/sec	Hardy, K. A.; Sheldon, J. W. Velocity-dependent total scattering cross sections for metastable helium on Kr and Xe. Phys. Rev. A 33, 2761 (1986) United States
02463 T	H36: hν + H*; hν + He*	8-4000 eV	Selzman, D.; Pratt, R. H. Photoionization of nonexcited electrons from excited atoms. Phys. Rev. A 33, 2767 (1986) United States
02464 E	A33: He* + H_2 A37: He* + H_2	Thermal	Leisin, C.; Borgmer, H. Optical spectroscopy of the reaction of He(2^3S) with H_2 in a molecular-beam experiment. Phys. Rev. A 33, 2791 (1986) West Germany
02465 E	A33: He* + H_2 A37: He* + H_2	Undef	Newman, L. K.; Hansen, S. D.; Wells, B. E.; Tilton, R. A. He(2^3S)-H_2 interactions in high-pressure, electron-beam discharge and low-pressure flowing afterglow experiments. Phys. Rev. A 30, 2793 (1986) United States
02466 E	A08: D_2^+ + Cs; D_3^+ + Cs; O_2^+ + Cs A36: D_2^+ + Cs; D_3^+ + Cs; O_2^+ + Cs	0.695-2.02 keV	Peterson, J. R.; Bae, Y. K. Product states of H_2^+, H_3^+, and O_2^+ electron capture in Cs. Phys. Rev. A 33, 2807 (1986) United States
02467 T	E33: e + H_2	0.7-4.5 eV	Morrison, M. A.; Feldt, A. N.; Saha, B. C. Validity of the adiabatic nuclei theory for vibrational excitation of molecules by electron impact: the e-H_2 system. Phys. Rev. A 30, 2811 (1986) United States
02468 T	H06: Undef	Undef	Agarwal, G. S.; Nayanar, C. V. Multiphoton ionization in chaotic fields with a non-Lorentzian spectrum. Phys. Rev. A 33, 2814 (1986) India
02469 T	E36: e + Ca^+	Undef	Alter, G.; Cooper, J.; Rau, A.R.P. Unified treatment of radiative and dielectronic recombination. Phys. Rev. A 33, 2845 (1986) United States
02470 T	A32: H^+ + H	[illegible] keV	Bewangan, D. P.; Eichler, J. Model calculations for proton-hydrogen elastic scattering at intermediate energies. J. Phys. B 17, 1541 (1986) West Germany
02471 E	E35: e + Ar	[illegible] eV	Sewell, E. C.; Crowe, A. Auger electron lineshapes measured in coincidence with scattered electrons. J. Phys. B 17, 1547 (1986) United Kingdom
02472 T	A37: Si^{n+} + Ar; F^{n+} + Ar; C^{n+} + Ar; He* + Ar; H^+ + Ar	0.5-[illegible].5 MeV/amu	Solik, B.; Bock, G.; Berenyi, D. Charge scaling of ionization probabilities in ion-atom collisions for zero impact parameter. J. Phys. B 17, 1239 (1986) Hungary
02473 E	A33: He* + Ag; He* + Sn; He* + Te; He* + Sc; He* + Ta; He* + W; He* + Pt; He* + Bi	1.5-3.8 MeV	Brezievicz, J.; Brezievicz, E.; Ploskonka, J.; Pajek, M.; Czetynski, C. M. L-shell x-ray production cross sections by the ion bombardment. J. Phys. B 17, 1245 (1986) Poland
02474 T	A36: H^+ + He A38: H^+ + He	200-550 keV	Bochach, L.; Briggs, J. S. Theory of electron capture by fast projectiles scattered through large angles. J. Phys. B 17, 1255 (1986) Denmark
02475 T	A36: C^{3+} + H; C^{4+} + H; C^{4+} + Li	0.1-20 keV/amu	Fritsch, W.; Lin, C. D. Atomic-basis study of electron transfer into C^{3+}(nl) orbitals in C^{4+} + H and C^{4+} + Li collisions. J. Phys. B 17, 1271 (1986) West Germany
02476 T	E32: e + Kr E17: e + Kr	0.1-120 eV	Pan, H. C.; Herrington, K. A.; Hibbert, A. The elastic scattering of electrons from inert gases: IV. Krypton. J. Phys. B 17, 1279 (1986) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
02477 E	E05: e + He	24-750 eV	Montague, R. G.; Harrison, M.F.A.; Smith, A.C.H. A measurement of the cross section for ionisation of helium by electron impact using a fast crossed beam technique. J. Phys. B 17, 3295 (1984) United Kingdom
02478 E	E05: e + N Seq**	1.1-6 E/I	Clark, R.E.H.; Sampson, D. H. Ionisation from the sublevels nl with n = 5 and 6 in highly charged ions. J. Phys. B 17, 3311 (1984) United States
02479 T	E03: e + S**	0.7-1.7 Ry	Dufton, P. L.; Kingston, A. E. Electron impact collision rates for S V. J. Phys. B 17, 3321 (1984) United Kingdom
02480 T	E33: e + CO_2	Undef	Chang, E. S. Theory of rotational-vibronic excitation in linear molecules by slow electrons. J. Phys. B 17, 3341 (1984) West Germany
02481 T	E32: e + H	Undef	Ho, Y. K.; Callaway, J. Supermultiplet structures of doubly excited states of H^- below the N = 6 hydrogen threshold. J. Phys. B 17, L559 (1984) United States
02482 T	H06: hν + N_2	15-43 eV	Leal, E. P.; Machado, L. E.; Mu-Tao, L. Vibrational branching ratios in 3 Sigma (sub g) photoionisation of N_2 in the Stieltjes-Tchebycheff moment theory. J. Phys. B 17, L569 (1984) Brazil
02483 E-T	E05: e + He E17: e + He	25-30 eV	Fournier-Lagarde, P.; Mazeau, J.; Huetz, A. Electron impact ionisation of helium: a measurement of (e, 2e) differential cross sections close to threshold. J. Phys. B 17, L591 (1984) France
02484 E-T	H36: nhν + Ne; nhν + Ar; nhν + Kr; nhν + Xe	0.2-1.1 μm	Crance, M. Multiphoton stripping of noble gas atoms: a statistical interpretation. J. Phys. B 17, 3503 (1984) France
02485 E	H06: nhν + Ar; nhν + Kr; nhν + Xe	65-250 eV	Hayaishi, T.; Morioka, Y.; Kageyama, Y.; Watanabe, M.; Suzuki, I. H.; Mikuni, A.; Isoyama, G.; Asaoka, S.; Nakamura, M. Multiple photoionisation of the rare gases in the XUV region. J. Phys. B 17, 3511 (1984) Japan
02486 E	A37: H^+ + He; B^{5+} + He; C^{6+} + He; O^{8+} + He	0.13-15 MeV/amu	Knudsen, H.; Andersen, L. H.; Hvelplund, P.; Astner, G.; Cederquist, H.; Danared, H.; Liljeby, L.; Rensfelt, K. G. An experimental investigation of double ionisation of helium atoms in collisions with fast, fully stripped ions. J. Phys. B 17, 3545 (1984) Denmark
02487 E	A36: Na + Br	1.78-500 eV	Neynaber, R. H.; Tang, S. Y. Ion-pair production in collisions of Na and Br. J. Phys. B 17, 3565 (1984) United States
02488 T	E03: e + He^+ E17: e + He^+	50-1000 eV	Gien, T. T. Excitation of He^+ by electron impact in the modified Glauber approximation: II. 1s-2p transitions. J. Phys. B 17, 3575 (1984) Canada
02489 T	E03: e + He^+	Undef	Deb, N. C.; Sil, N. C. Electron impact excitation of positive ions in dense plasma. J. Phys. B 17, 3587 (1984) India
02490 E	E05: e + Ne^+	41-2000 eV	Diserens, M. J.; Harrison, M.F.A.; Smith, A.C.H. A measurement of the cross section for electron impact ionisation of Ne^+. J. Phys. B 17, L621 (1984) United Kingdom
02491 T	A36: H^+ + H A37: H^+ + H A18: H^+ + H	1-250 keV	Terlecki, G.; Grün, N.; Scheid, W. Trajectory method for the solution of the time-dependent Schrodinger equation in atomic physics and application to H^+-H scattering. J. Phys. B 17, 3719 (1984) West Germany
02492 T	A03: H^+ + H; H^+ + H* A18: H^+ + H; H^+ + H*	100-500 keV	Saxena, S.; Gupta, G. P.; Mathur, K. C. Excitation of the hydrogen atom from its ground and metastable states by positron and proton impact at intermediate energies. J. Phys. B 17, 3743 (1984) India

Ref. No.	Reactants	Energy Range	Reference
02493 T	E02: e + Ne; e + Ar E17: e + Ne; e + Ar	10-200 eV	Kemper, F.; Rosicky, F.; Feder, R. Relativistic two-channel theory of elastic electron-atom scattering and application to Ne and Ar. J. Phys. B 17, 3763 (1984) West Germany
02494 T	E02: e + Cs E03: e + Cs E17: e + Cs	0-3 eV	Scott, N. S.; Bartschat, K.; Burke, P. G.; Nagy, O.; Eissner, W. B. Low-energy scattering of electrons by caesium atoms: II. J. Phys. B 17, 3775 (1984) United Kingdom
02495 T	E02: e + Tl E03: e + Tl	0-5 eV	Bartschat, K.; Scott, N. S. Resonances in the low-energy scattering of electrons by atomic thallium. J. Phys. B 17, 3787 (1984) West Germany
02496 T	E02: e + Hg; e + Tl E03: e + Hg; e + Tl E17: e + Hg; e + Tl	5-8 eV	Bartschat, K.; Blum, K.; Burke, P. G.; Hanne, G. F.; Scott, N. S. The fine-structure effect in the low-energy scattering of electrons on Hg and Tl atoms. J. Phys. B 17, 3797 (1984) United Kingdom
02497 E	E03: e + H_2; e + D_2 E17: e + H_2; e + D_2	10 eV	Hall, R. I.; Andric, L. Electron impact excitation of H_2(D_2). Resonance phenomena associated with the $B^2\Sigma$(sub u)$^+$ and $E^2\Sigma$(sub g)$^+$ states of H_2^- in the 10 eV region. J. Phys. B 17, 3815 (1984) France
02498 T	E02: e + CO_2 E17: e + CO_2	20-1500 eV	Botelho, L. F.; Freitas, L.C.G.; Mu-Tao, L.; Jain, A.; Tayal, S. S. Elastic scattering of intermediate and high energy electrons by CO_2. J. Phys. B 17, L641 (1984) Brazil
02499 E	E03: e + Xe* E05: e + Xe* E07: e + Xe*	8.0-12.5 eV	Blagoev, A.; Ivanov, I.; Mishonov, T.; Popov, T. Absolute calibration of arbitrary total cross sections for electron impact excitation of Xe metastable states in the near-threshold region. J. Phys. B 17, L647 (1984) Bulgaria
02500 E	H03: hν + e	Undef	Grelland, H. H. Relativistic kinematic scattering of x rays by electrons. J. Phys. B 17, L653 (1984) Norway
02501 T	E03: e + Al+	0.5-10x10^4 K	Tayal, S. S.; Burke, P. G.; Kingston, A. E. Electron impact excitation of intercombination transitions in Al II. J. Phys. B 17, 3847 (1984) United Kingdom
02502 T	A11: CO* + H_2	80-600 K	Baker, D. J.; Flower, D. R. Near-resonance vibrational relaxation of $^{13}C^{16}O$ in collisions with para-H_2. J. Phys. B 17, 3851 (1984) United Kingdom
02503 T	A07: He+ + Dy; He+ + W; He+ + Au; He+ + Pt; He+ + Th; He+ + U	1-3 MeV	Cohen, D. D. Comments on several analytical techniques for L-subshell ionisation calculations. J. Phys. B 17, 3913 (1984) Australia
02504 T	A03: Na+ + Na* A06: He+ + Na*; Na+ + Na* A07: He+ + Na* A08: He+ + Na*	0.25-100 keV/amu	Becker, R. L.; MacKellar, A. D. Theoretical initial l dependence of ion-Rydberg-atom collision cross sections. J. Phys. B 17, 3923 (1984) United States
02505 E	A03: Si** + C A06: Si** + C	125 MeV	Jakubassa-Amundsen, D. H.; Hoppler, R.; Betz, H. D. Radiative electron capture in fast ion-atom collisions. J. Phys. B 17, 3943 (1984) West Germany
02506 T	E02: e + H E03: e + H E17: e + H	20-200 eV	McDowell, M.R.C.; Edmunds, P. W.; Potvliege, R. M.; Joachain, C. J.; Shingal, R.; Bransden, B. H. The angular distribution of asymmetry in scattering of spin-polarised electrons by spin-polarised hydrogen atoms: II. J. Phys. B 17, 3951 (1984) United Kingdom
02507 T	E03: Undef E05: Undef	Undef	Read, F. H. Extensions of the Wannier theory for near-threshold excitation and ionisation of atoms by electron impact. J. Phys. B 17, 3965 (1984) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
02508 T	E03: e + He^{+}	Undef	Das, A. K.; Sil, N. C. Excitation of arbitrary states of hydrogen-like ions by the impact of a charged particle I. J. Phys. B 17, 3987 (1984) India
02509 T	E03: e + He^{+} Seq	1.2-10 Threshold	Das, A. K.; Sil, N. C. Excitation of arbitrary states of hydrogen-like ions by the impact of a charged particle II. J. Phys. B 17, 4001 (1984) India
02510 T	E03: e + He	Threshold-15 Ry	Fadnell, K. F. Electron impact excitation of He. J. Phys. B 17, 4013 (1984) United Kingdom
02511 E	A03: C^{4+} + He	2-5 MeV	Bruch, R.; Altick, P. L.; Trabert, E.; Heckmann, P. H. High-resolution EUV satellite spectra of doubly excited Be I ($nln'l'$), n = 2 to 5. J. Phys. B 17, L655 (1984) West Germany
02512 E	A12: Ca + Kr	873 K	Harris, M.; Lewis, E. L.; McHugh, D.; Shannon, I. The full Voigt profile and collision time asymmetry for profiles of calcium 422.7 nm perturbed by krypton. J. Phys. B 17, L661 (1984) United Kingdom
02513 E-T	A17: K + Ar	380 K	Lewis, E. L. Potentials for potassium-argon collisions and multipole relaxation rates. J. Phys. B 17, L669 (1984) United Kingdom
02514 T	A03: N^{3+} + H A06: N^{3+} + H	0.01-1000 meV	Bienstock, S.; Elander, N.; Brandas, E.; Barany, A. Resonance structure in charge transfer cross sections: an application to the N^{3+} + H → N^{2+} + H^{+} reaction. J. Phys. B 17, L677 (1984) Sweden
02515 T	H02: Undef	Undef	Cordes, J. G.; Chevary, J. A. Two-atom absorption spectrum in the intense-field approximation. J. Phys. B 17, 4163 (1984) Canada
02516 E	A03: H^{+} + Li	2-20 keV	Aumayr, F.; Fehringer, M.; Winter, H. Inelastic H^{+}-Li(2s) collisions (2-20 keV): I. Experimental methods and Li(2p) excitation. J. Phys. B 17, 4185 (1984) Austria
02517 E	A03: H^{+} + Li A06: H^{+} + Li	2-20 keV	Aumayr, F.; Fehringer, M.; Winter, H. Inelastic H^{+}-Li(2s) collisions (2-20 keV): II. Electron capture into H(2p) and H(3, 1) subshells. J. Phys. B 17, 4201 (1984) Austria
02518 T	E02: e + H_2; e + N_2; e + CO_2	0.01-1.0 eV	Fabrikant, I. I. Effective-range analysis of low-energy electron scattering by non-polar molecules. J. Phys. B 17, 4223 (1984) Soviet Union
02519 T	E05: e + He	8 keV	Brothers, M. J.; Bonham, R. A. Approximate first Born descriptions of high-energy asymmetric (e, 2e) cross sections for helium. J. Phys. B 17, 4235 (1984) United States
02520 T	F03: e + He^{+}	0-300 eV	Pundir, R. S.; Mathur, K. C. Plasma effect on electron-helium ion scattering. J. Phys. B 17, 4245 (1984) India
02521 E-T	A12: Cs + Xe A17: Cs + Xe	478 K	Allard, N. F.; Biraud, Y. G. Alkali-rare gas interaction potential modelisation by square-well potentials: physical interpretation. Ann. Phys. (Paris) 9, 585 (1984) France
02522 E-T	A11: Na^{*} + He; Na^{*} + Xe; Na^{*} + Ar; Na^{*} + Kr; Rb^{*} + He; Rb^{*} + Xe A12: Na + He; Na + Xe; Na + Ar; Na + Kr; Rb + He; Rb + Xe	Undef	Gounand, F.; Szudy, J.; Hugon, M.; Sayer, B.; Fournier, P. R. Broadening of optical lines originating from Rydberg states: a simple model. Ann. Phys. (Paris) 9, 597 (1984) France
02523 T	A05: Undef A06: Undef	Undef	Bonnet, J. J. Photon emission spectroscopy of highly charged ions following low energy charge exchange collisions. Ann. Phys. (Paris) 9, 629 (1984) France
02524 E	D07: He^{+} + Ni; He^{+} + Ni + S; He^{+} + Ni; He^{+} + Ni + O	0.9 keV	Eschenbacher, H.; Richard, A.; Dose, V. Comparison of low-energy neutral scattering (LENS) with low-energy ion scattering (LEIS) at clean and adsorbate covered Ni surfaces. Appl. Phys. (Germany) A 34, 19 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
02525 T	B32: He^{+} + Ni; Ne^{+} + Ni; H^{+} + Ni; Ar^{+} + Ni; Xe^{+} + Ni; D^{+} + Ni; C^{+} + C	30-1x10^{6} eV	Biersack, J. P.; Eckstein, W. Sputtering studies with the Monte Carlo program TRIM.SP. Appl. Phys. [Germany] A 34, 73 (1984) West Germany
02526 T	C32: e + Cu; e + Au; e + Al C34: e + Au; e + Al D06: e + Al; e + Au	0.01-10 keV	Valkealahti, S.; Nieminen, R. M. Monte Carlo calculations of keV electron and positron slowing down in solids. II. Appl. Phys. [Germany] A 35, 51 (1984) Finland
02527 T	B37: D^{+} + Ti; He^{+} + Ag; H^{+} + Ti; He + Ti; H^{+} + C; D^{+} + C	20-60 keV	Bedell, R. Total backscattering and energy reflection of light ions from solids in the single-collision approximation. Appl. Phys. [Germany] A 35, 91 (1984) United States
02528 E	D11: e + CO + Ni	60 eV	Wen-hao, W.; Verhoeven, J. Low energy electron impact effects on the adsorption of residual gases on a nickel (100) surface. Appl. Surf. Sci. 17, 331 (1984) The Netherlands
02529 E	D11: H_2 + Rh; CO + Rh	300-1400 K	Craig, J. H., Jr. Adsorption of H_2 and CO on rhodium. Appl. Surf. Sci. 17, 375 (1984) United States
02530 T	N34: 2hν + H	Undef	Bassalamner, B.; Schmutz, H. The hydrogenic 2s - 1s two-photon emission. Astron. Astrophys. 138, 455 (1984) Switzerland
02531 T	A36: N^{4+} + H	10-10^{6} K	Feickert, C. A.; Blint, R. J.; Surratt, G. T.; Watson, W. D. Quantal calculations of charge transfer in collisions between N V and atomic hydrogen. Astrophys. J., Part 1 286, 371 (1984) United States
02532 T	E33: e + Mg^{6+}	3.35-533x10^{4} K	Aggarwal, K. M. Electron impact excitation of forbidden transitions in Mg VII. Astrophys. J. Suppl. Ser. 56, 303 (1984) United Kingdom
02533 E	A14: CH_2 + O_2	Thermal	Bohland, T.; Temps. F.; Wagner, H. G. Direct determination of the rate constant for the reaction CH_2 + O_2 with a LMR-spectrometer. Ber. Bunsenges. Phys. Chem. 88, 455 (1984) West Germany
02534 T	K34: Charge states; Equilibrium fraction		Y. H. Ohtsuki Charge states, screening and wake. p. 155 in Charged Beam Interaction with Solids, Yoshi-Hiko Ohtsuki, Ed., Taylor and Francis, Inc., New York, (1983) Japan
02535 T	K34: Backscatering; Neutralization		Y. H. Ohtsuki Particles and solid surfaces. p. 186 in Charge Beam Interaction with Solids, Yoshi-Hiko, Ohtsuki, Ed., Taylor and Francis, Inc., New York, (1983) Japan
02536 E-T	K02: Elastic scattering		Csanak, G.; Cartwright, D. C.; Srivastava, S. K.; Trajmar, S. Elastic scattering of electrons by molecules. p. 1 in Electron-Molecule Interactions and their Applications, vol. 1, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02537 E-T	K02: Excitation		Trajmar, S.; Cartwright, D. C. Excitation of molecules by electron impact. p. 155 in Electron-Molecule Interactions and their Applications, vol. 1, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02538 E	K02: Ionization		Mark, T. D. Ionization of molecules by electron impact. p. 251 in Electron-Molecule Interactions and their Applications, vol. 1, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) Austria
02539 E	K02: Dissociation		Zipf, E. C. Dissociation of molecules by electron impact. p. 335 in Electron-Molecule Interactions and their Applications, vol. 1, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02540 E	K02: Resonances		Hasted, J. B.; Mathur, D. Electron-molecule resonances. p. 403 in Electron-Molecule Interactions and their Applications, vol. 1, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
02541 E	K02: Attachment		Christophorou, L. G.; McCorkle, D. L.; Christodoulides, A. A. Electron attachment processes. p. 477 in Electron-Molecule Interactions and their Applications, vol. 1, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02542 E	K02: Detachment		Champion, R. L.; Doverspike, L. D. Electron detachment processes. p. 619 in Electron-Molecule Interactions and their Applications, vol. 1, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02543 E	K01: Electron transfer; Electron capture		Moran, T. F. Electron transfer reactions. p. 1 in Electron-Molecule Interactions and their Applications, vol. 2, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02544 E	K02: Recombination		McGowan, J. W.; Mitchell, J.B.A. Electron-molecular positive-ion recombination. p. 65 in Electron-Molecule Interactions and their Applications, vol. 2, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) Canada
02545 E	K02: Transport; Drift; Diffusion; Scattering; Attachment; Excitation; Ionization		Hunter, S. R.; Christophorou, L. G. Electron motion in low-and high-pressure gases. p. 89 in Electron-Molecule Interactions and their Applications, vol. 2, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02546 E	K02: Mobilities; Attachment; Ionization		Christophorou, L. G.; Siomos, K. Interphase physics: linking knowledge on electron-molecule interactions in gases to knowledge on such processes in condensed matter. p. 221 in Electron-Molecule Interactions and their Applications, vol. 2, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02547 E-T	K02: Electron affinities K06: Electron affinities		Christodoulides, A. A.; McCorkle, D. L.; Christophorou, L. G. Electron affinities of atoms, molecules, and radicals. p. 423 in Electron-Molecule Interactions and their Applications, vol. 2, L. G. Christophorou, Ed., Academic Press, Inc., New York, (1984) United States
02548 T	E05: e + H E17: e + H	110–114 eV	Ghosh, A. S.; Mazumdar, P. S.; Basu, M. The triple differential cross section for the ionization of hydrogen atoms under electron impact. Can. J. Phys. 62, 968 (1984) India
02549 T	D11: H_2 + Al; H_2 + Ag	Thermal	Xu, Y.; Zhang, K. Studies of hydrogen adsorption on Al(111) and Ag(111) surfaces by the EHT method. Chin. J. Phys. 4, 33 (1984) Republic of China
02550 E-T	A03: H^+ + H A06: H^+ + H	1–10 keV	Crothers, D.S.F.; Hughes, J. G. Symmetric orthogonalization of travelling molecular orbitals. Comments At. Mol. Phys. 15, 15 (1984) United Kingdom
02551 E-T	A07: H^+ + Ag	0.2–30 MeV	Benka, O.; Paul, H. Inner-shell ionization by light ions. Comments At. Mol. Phys. 15, 29 (1984) Austria
02552 T	B07: e + H; e + He		Faisal, F.H.M. Radiative electron-atom collision in a strong laser field. Comments At. Mol. Phys. 15, 119 (1984) West Germany
02553 T	A06: Li^{3+} + H	Undef	Belkic, D.; Gayet, R.; Salin, A. Computation of total cross-sections for electron capture in high energy collisions. II. Comput. Phys. Commun. 33, 193 (1983) Yugoslavia
02554 T	E02: e + Cs	0.136 Ry	Bartschat, K.; Scott, N. S. Amplitudes for scattering of electrons by atomic systems including relativistic effects. Comput. Phys. Commun. 33, 369 (1983) United Kingdom
02555 T	E02: e + Hg	180 eV	Bartschat, K. Program to calculate observable quantities from scattering amplitudes for inelastic electron-atom collisions. Comput. Phys. Commun. 33, 383 (1983) West Germany
02556 E	C04: e + H_2O; e + D_2O	0–4 eV	Konovalov, V. V.; Raitsimring, A. M.; Tsvetkov, Y. D. Determination of the thermalization length of low-energy electrons in H_2O and D_2O solutions by photoelectric emission. High Energy Chem. 18, 1 (1984) Soviet Union

Ref. No.	Reactants	Energy Range	Reference
02557 E	E04: $e + CO_2$ E09: $e + CO_2$	1.5-4 eV	Eletskii, A. V.; Chiflikyan, R. V. Dissociative electron attachment to CO_2 in a multicomponent discharge plasma. High Energy Chem. 18, 67 (1984) Soviet Union
02558 T	A33: $H_2 + H_2$ A12: $H_2 + H_2$	11-14 eV	Bohne, F. R.; Zimmermann, R. Oscillator-strength distribution in a dense hydrogen plasma. High Temp. 21, 479 (1983) East Germany
02559 E	E32: e + Ba; e + Bi; e + Cu; e + Mn; e + Tl; e + Zn E17: e + Ba; e + Bi; e + Cu; e + Mn; e + Tl; e + Zn E19: e + Ba; e + Bi; e + Cu; e + Mn; e + Tl; e + Zn	10-100 eV	Trajmar, S. Electron impact spectroscopy of high temperature species. High Temp. Sci. 17, 65 (1984) United States
02560 E	E31: Review	$10-10^4$ eV	Chutjian, A. Electron-ion collisions in high temperature plasmas. High Temp. Sci. 17, 135 (1984) United States
02561 T	A11: $H + H_2^*$	0.35 eV	Hiskes, J. R.; Karo, A. M. Generation of negative ions in tandem high-density hydrogen discharges. J. Appl. Phys. 56, 1927 (1984) United States
02562 E	A11: $Mg^* + N_2$; $Mg^* + CO_2$; $Mg^* + H_2O$	800 K	Husain, D.; Schifino, J. Collisional quenching of Mg[3 ^3P(sub j)] studied by time-resolved emission, 3 $^3P_1$ - 3 $^1S_0$ + hν (lambda = 457.1 nm), following dye-laser excitation. J. Chem. Soc. Faraday Trans. II 79, 919 (1983) United Kingdom
02563 E	A11: $Ca^* + He$; $Ca^* + Ne$; $Ca^* + Ar$; $Ca^* + Kr$; $Ca^* + Xe$	Thermal	Husain, D.; Schifino, J. Kinetic study of Ca[4 ^3P(sub j)] by time-resolved emission, 4 $^3P_1$ - 4 $^1S_0$ + hν (lambda = 657.3 nm), following dye-laser excitation. Spontaneous emission, diffusion and collisional quenching. J. Chem. Soc. Faraday Trans. II 79, 1265 (1983) United Kingdom
02564 P	A11: $Ca^* + CO$; $Ca^* + NO$; $Ca^* + CO_2$; $Ca^* + CH_4$	1000 K	Husain, D.; Schifino, J. Collisional quenching of Ca[4 ^3P(sub j)] studied by time-resolved emission, 4 $^3P_1$ - 4 $^1S_0$ + hν (lambda = 657.3 nm), following dye-laser excitation. J. Chem. Soc. Faraday Trans. II 79, 1677 (1983) United Kingdom
02565 E	H30: hν + Mn	50-72 eV	Kobrin, P. H.; Becker, U.; Truesdale, C. M.; Lindle, D. W.; Kerkhoff, H. G.; Shirley, D. A. Photoelectron asymmetries and two-electron satellites near the 3p - 3d giant-resonance region in atomic Mn. J. Electron. Spectrosc. Relat. Phenom. 34, 129 (1984) United States
02566 E	D32: $Ar^+ + CO$; $Ar^+ + H_2O$; $Ar^+ + CF_4$	3 keV	de Vries, A. E.; Haring, R. A.; Haring, A.; Klein, F. S.; Kummel, A. C.; Saris, F. W. Synthesis and sputtering of newly formed molecules by kiloelectronvolt ions. J. Phys. Chem. 88, 4510 (1984) The Netherlands
02567 E	A33: $U^{***} + Ar$ A36: $U^{***} + Ar$ A37: $U^{***} + Ar$	5.9 MeV/amu	Deslattes, R. D.; Beyer, H. F.; Folkmann, F. Precision x-ray wavelength measurements in helium-like argon recoil ions. J. Phys. B 17, L689 (1984) United States
02568 T	A12: Cs + Xe; Cs + Kr; Cs + Ar; Cs + Ne; Cs + He	400 K	Current, A. V.; Hanners, J. Collision cross sections for the noble-gas broadening of the Cs 6S-7P doublet using photon echoes. J. Phys. B 17, L731 (1984) United Kingdom
02569 T	A33: $H^+ + He$; $He^{2+} + He$ A36: $H^+ + He$; $He^{2+} + He$	25-10000 keV	Deco, G. R.; Maidagan, J. M.; Rivarola, R. D. Electron capture by proton and alpha particle impact on helium atoms. J. Phys. B 17, L707 (1984) Argentina
02570 T	A33: $C^{4+} + He$; $C^{6+} + He$ A36: $C^{4+} + He$; $C^{6+} + He$	1-200 keV	Kimura, M.; Olson, R. E. Electron capture to (nl) states in collisions of C^{4+} and C^{6+} with He. J. Phys. B 17, L713 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
32571 E	A33: Be^{4+} + Be A36: Be^{4+} + Be	6-133 keV	Nikulin, V. B.; Bijkhasp, B.; Gordeev, Y. S.; Samoylov, B. V.; de Beer, F. J. Electron capture into excited projectile states in 6-133 keV Be^{4+}-Be collisions. J. Phys. B 17, L721 (1984) The Netherlands
32572 T	E35: e + Ti^{3+}	46-200 eV	Burke, P. G.; Fon, W. C.; Kingston, A. E. Electron impact ionisation of Ti^{3+}. J. Phys. B 17, L733 (1984) United Kingdom
32573 E	E35: e + N_2	1 keV	Shibata, H.; Suzuki, K.; Nishimura, F.; Ida, H. Partial generalised oscillator strengths for ionisation of the nitrogen molecule by 1 keV electron impact. J. Phys. B 17, L739 (1984) Japan
32574 E	A03: Ca^{0} + H_2; Ca^{0} + D_2 A11: Ca^{0} + H_2; Ca^{0} + D_2	360-830 K	Yuh, H. J.; Zapdigian, P. J. State-resolved fine-structure transitions in collisions of Ca 4s4p $^3P^0$ (sub j) with H_2 and D_2 molecules. J. Phys. B 17, 4351 (1984) United States
32575 E	A33: C^{4+} + Li A36: C^{4+} + Li	20-80 keV	Eijkhamp, H.; Brazuk, A.; Drentje, A. G.; de Heer, F. J.; Winter, H. Single-electron capture into C^{3+} (n,l) subshells in C^{4+}-Li collisions (20-80 keV). J. Phys. B 17, 4371 (1984) The Netherlands
32576 E	E33: e + H_2	0.05-6 eV	Ficocelli Varracchio, F.; Lamanna, U. T. Threshold behaviour of rotational cross sections in e--H_2 scattering. J. Phys. B 17, 4395 (1984) Italy
32577 T	A36: hν + Li	33872 cm^{-1}	Dixit, S. N.; Lau, A.H.F. Photon catalysed autoionisation of lithium. J. Phys. B 17, L765 (1984) United States
32578 P	F22: hν + Hg H06: hν + Hg	11-13.5 eV	Schonhense, G.; Schafers, F.; Heckenkamp, C.; Heinzmann, U.; Baig, M. A. Singlet-triplet mixing in Hg 6s photoionisation via autoionising transitions. J. Phys. B 17, L771 (1984) West Germany
32579 T	A37: H^{+} + He E35: e + He H06: hν + He	3.5-50 MeV	McGuire, J. H. High-velocity limits for the ratio of double to single ionisation by charged particles and by photons. J. Phys. B 17, L779 (1984) United States
32580 E	A36: U^{28+} + Ar A37: U^{28+} + Ar	15.5 MeV	Ullrich, J.; Cocke, C. L.; Kelbch, S.; Mann, R.; Richard, P.; Schmidt-Bocking, H. A parasite ion source for bare-ion production on a high-energy heavy-ion accelerator. J. Phys. B 17, L785 (1984) West Germany
32581 E	E33: e + He E17: e + He	22 eV	Neill, P. A.; Crowe, A. Scattered electron-photon angular correlations for the 2^1P state of helium below the n = 3 threshold. J. Phys. B 17, L791 (1984) United Kingdom
32582 E	A12: Na^{0} + He; Na^{0} + Ne; Na^{0} + Ar; Na^{0} + Kr; Na^{0} + Xe; Cs^{0} + He; Cs^{0} + Ne; Cs^{0} + Ar; Cs^{0} + Kr; Cs^{0} + Xe	433-553 K	Kaulakys, B. Broadening and shift of Rydberg levels by elastic collisions with rare-gas atoms. J. Phys. B 17, 4465 (1984) Soviet Union
32583 E	A33: Xe^{37+} + Xe; Xe^{39+} + Xe; Ye^{39+} + Xe; Xe^{40+} + Xe; Xe^{41+} + Xe; Xe^{42+} + Xe; Xe^{43+} + Xe; Xe^{44+} + Xe; Xe^{45+} + Xe; Xe^{46+} + Xe; Xe^{47+} + Xe; Sn^{39+} + Xe; Sn^{40+} + Xe; Sn^{41+} + Xe; Sn^{42+} + Xe; Sn^{43+} + Xe; Sn^{44+} + Xe; Sn^{45+} + Xe; Sn^{46+} + Xe; Sn^{47+} + Xe; Sn^{48+} + Xe; Sn^{49+} + Xe; Sn^{50+} + Xe	2.2-8.7 MeV/amu	Eckler, P. H.; Hoffmann, D.H.H.; Schonfeldt, H. A.; Mack, D.; Stachura, Z.; Warczak, A. Vacancy transfer to the K shell in very heavy quasi-molecules studied with highly charged, decelerated heavy atoms. J. Phys. B 17, 4495 (1984) West Germany
32584 T	A33: He^{+} + Li A36: He^{+} + Li	1-400 keV	Bransden, B. H.; Dreclaer, A. M.; Shingal, R. One- and two-electron models for electron capture by He^{+} ions from Li^{0} at intermediate energies. J. Phys. B 17, 4515 (1984) United Kingdom
32585 T	A33: Ar^{8+} + H; Cr^{6+} + H; Mg^{6+} + H A36: Ar^{8+} + H; Cr^{6+} + H; Mg^{6+} + H	0.05-0.8 a.u.	Ilersen, O. G.; Faulbjerg, K. Theory of electron capture by partly stripped ions in slow collisions with atomic hydrogen. J. Phys. B 17, 4523 (1984) Denmark

Ref. No.	Reactants	Energy Range	Reference
02586 T	E33: e + H E17: e + H	54.4 eV	Bransden, B. H.; McCarthy, I. E.; Stelbovics, A. T. Off-diagonal polarization potentials in the e-H coupled-channels problem. J. Phys. B 17, 4543 (1984) Australia
02587 E	E11: e + He E17: e + He	19.3 eV	Andrick, D.; Bader, H. Resonance structures in the cross section for free-free radiative transitions in e^--He scattering. J. Phys. B 17, 4549 (1984) West Germany
02588 T	E35: e + Ne E17: e + Ne	8 keV	Dal Cappello, C.; Tavard, C.; Lahmam-Bennani, A.; Dal Cappello, M. C. High-energy electron-impact spectroscopy: (e,2e) models for absolute triple differential cross sections of neon. J. Phys. B 17, 4557 (1984) France
02589 T	D07: He^+ + Pt; He^+ + Cu; He^+ + Pd	0.5-2.5 MeV	Jakas, M. M.; Ponce, V. H. Anomalous enhanced back-scattering of fast light ions from amorphous solid targets. J. Phys. C 17, 1333 (1984) Argentina
02590 E	H05: hν + H_2 H06: hν + H_2 H08: hν + H_2	860-740 Å	Glass-Maujean, M.; Breton, J.; Thieblemont, B.; Ito, K. Lifetimes of radiative excited levels of H_2. J. Phys. (Paris) 45, 1107 (1984) France
02591 T	E36: e + O^{4+}; e + Ar^{14+}; e + Fe^{22+}; e + Mo^{38+}	0.157-4.0 keV	Nasser, I.; Hahn, Y. Dielectronic recombination rates for the Be-like ions. J. Quant. Spectrosc. Radiat. Transfer 29, 1 (1983) United States
02592 E	A03: K^* + N_2; K^* + H_2; K^* + CO; K^* + CH_4	342 K	Ciurylo, J.; Krause, L. 4^2P fine-structure mixing in potassium by collisions with N_2, H_2, CO, and CH_4. J. Quant. Spectrosc. Radiat. Transfer 29, 57 (1983) Canada
02593 T	E35: e + Fe^{9+}; e + Fe^{10+}; e + Fe^{11+}; e + Fe^{12+}; e + Fe^{13+}; e + Fe^{14+}; e + Sc^{3+}; e + Sc^{4+}; e + Sc^{5+}; e + Sc^{6+}; e + Sc^{7+}; e + Sc^{8+}; e + Sc^{9+}	1.25-5.0 E/I	Younger, S. M. Electron ionization rate coefficients for highly ionized iron and scandium. J. Quant. Spectrosc. Radiat. Transfer 29, 61 (1983) United States
02594 T	E36: e + C^{4+}; e + Al^{11+}; e + Ar^{16+}; e + Fe^{24+}	0.2-7.0 E/I	Younger, S. M. Dielectronic recombination rate coefficients for highly ionized helium-like ions. J. Quant. Spectrosc. Radiat. Transfer 29, 67 (1983) United States
02595 E	A11: Cd^* + N_2; Cd^* + H_2; Cd^* + CO; Cd^* + CO_2; Cd^* + Ar	thermal	Czajkowski, M.; Balertynowicz, E.; Krause, L. Excitation transfer and quenching induced in inelastic collisions of cadmium 5^3P_1 atoms. J. Quant. Spectrosc. Radiat. Transfer 29, 113 (1983) Canada
02596 T	A17: N_2^+; O_2^+; H_2^+; NO^+	Undef	Bamani, K.; Ghodgaonkar, A. M. On the application of the Rydberg-Kratzer potential to some diatomic molecules. J. Quant. Spectrosc. Radiat. Transfer 29, 379 (1983) India
02597 E	H02: hν + H_2O	1901 cm^{-1}	Salimian, S.; Hanson, R. K. Absorption measurements of H_2O at high temperatures using a CO laser. J. Quant. Spectrosc. Radiat. Transfer 30, 1 (1983) United States
02598 T	B01: Br; Cd; Ge; Hg; Pb; Rb; Sn; Zn		Dimitrijevic, M. S.; Konjevic, N. Stark broadening of isolated spectral lines of heavy elements in plasmas. J. Quant. Spectrosc. Radiat. Transfer 30, 45 (1983) Yugoslavia
02599 T	E36: e + Fe^{23+}	0.2-2.0 keV	Roszman, L. J.; Weiss, A. W. Effects of configuration interaction on dielectronic recombination of Fe(XXIV). J. Quant. Spectrosc. Radiat. Transfer 30, 67 (1983) United States
02600 E	E33: e + N_2; e + N_2^+	10-400 eV	Shaw, M.; Campos, J. Emission cross sections of the second positive and first negative systems of N_2 and N_2^+ excited by electron impact. J. Quant. Spectrosc. Radiat. Transfer 30, 73 (1983) Spain

Ref. No.	Reactants	Energy Range	Reference
02601 T	H32: $h\nu + H_2O$	150-500 cm^{-1}	Chacolampopulos, T. T.; Pelske, J. D. Total band absorptance, emissivity, and absorptivity of the pure rotational band of water vapor. J. Quant. Spectrosc. Radiat. Transfer 30, 89 (1983) United States
02602 E	H32: $h\nu + H_2$	80-900 cm^{-1}	Dore, P.; Nencini, L.; Birnbaum, G. Far infrared absorption in normal H_2 from 77 to 298 K. J. Quant. Spectrosc. Radiat. Transfer 30, 245 (1983) United States
02603 E	H02: $h\nu + CO_2$	1970-1200 Å	Lewis, B. R.; Carver, J. H. Temperature dependence of the carbon dioxide photo-absorption cross section between 1200 and 1970 Å. J. Quant. Spectrosc. Radiat. Transfer 30, 297 (1983) Australia
02604 E	E05: $e + Kr^{8+}$; $e + Kr^{9+}$; $e + Kr^{10+}$; $e + Kr^{11+}$	50-250 eV	Jones, L. A.; Kallne, E. A study of the VUV emission from highly ionized krypton in a theta pinch plasma. J. Quant. Spectrosc. Radiat. Transfer 30, 317 (1983) United States
02605 E	B31: C^{2+}; C^{3+}		El-Farra, M. A.; Hughes, T. P. Stark broadening of lines from multiply-charged carbon ions in a high-density arc plasma. J. Quant. Spectrosc. Radiat. Transfer 30, 335 (1983) United Kingdom
02606 E	B31: He		Castell, R.; Mandelbaum, D.; Mendez, A.; Sanchez, A. Stark broadening of the Paschen-beta line of hydrogen in a linear discharge. J. Quant. Spectrosc. Radiat. Transfer 30, 345 (1983) Venezuela
02607 E	H02: $h\nu + O_2$	170-190 nm	Gibson, S. T.; Gies, H.P.F.; Blake, A. J.; McCoy, D. G.; Rogers, P. J. Temperature dependence in the Schumann-Runge photoabsorption continuum of oxygen. J. Quant. Spectrosc. Radiat. Transfer 30, 385 (1983) Australia
02608 T	H32: $h\nu + H_2O$; $h\nu + O_3$; $h\nu + CO$; $h\nu + NO$	100-1000 GHz	Kolbe, W. F.; Leskovar, B. Millimeter and submillimeter wave absorption by atmospheric pollutants and constituents. J. Quant. Spectrosc. Radiat. Transfer 30, 463 (1983) United States
02609 T	E38: $e + H$	Undef	Ffenbig, H.; Kusna Usbela, I.S.K. On the quadrupole contributions to electron broadening of spectral lines. J. Quant. Spectrosc. Radiat. Transfer 31, 247 (1984) West Germany
02610 T	A12: $H^* + He$ E38: $e + He$	5×10^3-1×10^4 K	Dimitrijevic, M. S.; Sahal-Brechot, S. Stark broadening of neutral helium lines. J. Quant. Spectrosc. Radiat. Transfer 31, 301 (1984) France
02611 E	A12: $CO^* + H_2O$	400-1000 K	Hillis, D. R.; Walker, R. C., Jr.; Lowry, H. S., III Collision widths of CO lines broadened by water vapor at elevated temperatures. J. Quant. Spectrosc. Radiat. Transfer 31, 373 (1984) United States
02612 E	A33: $H^+ + He$; $H^+ + Ne$; $H^+ + Ar$; $H^+ + H_2$; $H^+ + N_2$; $H^+ + O_2$; $H^+ + CO_2$	5-150 keV	Rudd, M. E. Cross sections for production of vacuum ultraviolet radiation by 5-150-keV protons in gases. J. Quant. Spectrosc. Radiat. Transfer 31, 387 (1984) United States
02613 E	A33: $H^+ + Na^*$	5-750 eV	Kushawaha, V. S. Absolute cross section measurement of Lyman-Alpha radiation production. J. Quant. Spectrosc. Radiat. Transfer 31, 517 (1984) United States
02614 P	A12: $CO^* + CO_2$; $CO^* + H_2O$	300-600 K	Lowry, H. S., III; Fisher, C. J. Line parameter measurements and calculations of CO broadened by H_2O and CO_2 at elevated temperatures. J. Quant. Spectrosc. Radiat. Transfer 31, 575 (1984) United States
02615 T	H32: $h\nu + OH$	Undef	McGee, T. J.; McIlrath, T. J. Absolute OH absorption cross sections (for Lidar measurements). J. Quant. Spectrosc. Radiat. Transfer 32, 179 (1984) United States
02616 T	A14: $CH + O_2$; $C + OH$	Thermal	Clary, D. C. Rates of chemical reactions dominated by long-range intermolecular forces. Mol. Phys. 53, 3 (1983) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
02617 T	H02: hν + H_2	5-220 cm^{-1}	Joulin, C. G.; Gray, C. G.; Gharaki, Z. Far-infrared absorption in nitrogen gas. A theoretical study. Mol. Phys. 53, 233 (1984) United Kingdom
02618 T	A17: He + He; Li^0 + He	Undef	Tatewaki, H.; Tanaka, K.; Ohno, Y.; Nakamura, T. The interaction potentials for He-He and He-Li^0. Mol. Phys. 53, 233 (1984) Japan
02619 E	A37: Na^0 + Na^0 A11: Na^0 + Na^0	523 K	Carre, B.; Spiess, G.; Bizau, J. M.; Ober, P.; Gerard, F.; Guillemier, F.; Keller, J. C.; Le Gouet, J. L.; Picque, J. L.; Ederer, D. L.; Koch, P. M. Electron spectrometry study of associative and Penning ionization in laser excited sodium vapor. Opt. Commun. 52, 29 (1984) France
02620 T	H04: hν + Fe^{+++}	Undef	Anderson, E. K.; Anderson, K. N. Theoretical determination of the lifetimes of low-lying levels of Fe IV ion. Opt. Spectrosc. 55, 533 (1983) Soviet Union
02621 E-T	H04: hν + Ti^{+++}; hν + Fe^{+23}	100-1000 eV	Boiko, V. A.; Bryumshin, N. A.; Pikaz, S. A.; Skobelev, I. Y.; Faenov, A. Y.; S. Y. Khakhalin Spectral line strengths of lithium-like ions Ti XI and Fe XXIV in a laser plasma. Opt. Spectrosc. 55, 533 (1983) Soviet Union
02622 T	A03: He^0 + Hg A36: He^0 + Hg	Thermal	Ostrovskii, V. N.; Tolmachev, Y. A. Calculation of cross sections for charge-exchange with ion excitation. Opt. Spectrosc. 55, 646 (1983) Soviet Union
02623 T	A33: He^0 + He A11: He^0 + He	0.05-0.3 eV	Devdariani, A. Z.; Zagrebin, A. L. Resonant excitation transfer in the reactions He (2^1S, 2^3S) + He_0. Opt. Spectrosc. 55, 653 (1983) Soviet Union
02624 E-T	H37: hν + Li^-	0.6-1.1 eV	Goloviashkii, F. A. Photodetachment of electrons from negative ions. Opt. Spectrosc. 55, 655 (1983) Soviet Union
02625 T	E36: e + C^{++}	$8x10^5$ K	Kuplyauskis, Z. I.; Glyaszka, K. K.; Kuplyauskene, A. F. Dielectronic satellites of the C^{++} resonance line. Opt. Spectrosc. 56, 12 (1984) Soviet Union
02626 *	E07: e + Xe*	0.1-1.0 eV	Rozkhova, O. P.; Moritts, A. P. Rate of deexcitation of the xenon $^3P_2$ ($6s[3/2]_2$) state by slow electrons as a function of electron energy in the 0.1-1 eV range. Opt. Spectrosc. 56, 134 (1984) Soviet Union
02627 T	A37: He^0 + H; He^0 + Li; He^0 + Na; He^0 + K; He^0 + Rb; He^0 + Cs; He^0 + H; He^0 + Li; He^0 + Na; He^0 + K; He^0 + Rb; He^0 + Cs; He^0 + Ar; He^0 + Kr; He^0 + Xe; He^0 + He; Ar^0 + Li; Ar^0 + Na; Ar^0 + K; Ar^0 + Rb; Ar^0 + Cs; Ar^0 + Ar; Kr^0 + Li; Kr^0 + Na; Kr^0 + K; Kr^0 + Rb; Kr^0 + Cs; Kr^0 + Kr; Xe^0 + Li; Xe^0 + Na; Xe^0 + K; Xe^0 + Rb; Xe^0 + Cs; Xe^0 + Xe A11: He^0 + H; He^0 + Li; He^0 + Na; He^0 + K; He^0 + Rb; He^0 + Cs; He^0 + H; He^0 + Li; He^0 + Na; He^0 + K; He^0 + Rb; He^0 + Cs; He^0 + Ar; He^0 + Kr; He^0 + Xe; He^0 + He; Ar^0 + Li; Ar^0 + Na; Ar^0 + K; Ar^0 + Rb; Ar^0 + Cs; Ar^0 + Kr; Kr^0 + Li; Kr^0 + Na; Kr^0 + K; Kr^0 + Rb; Kr^0 + Cs; Kr^0 + Kr; Xe^0 + Li; Xe^0 + Na; Xe^0 + K; Xe^0 + Rb; Xe^0 + Cs; Xe^0 + Xe	333 K	Ramakov, B. I.; Gvozdikov, V. D.; Ostrovskii, V. N.; Tastreblov, V. N. Effect of long-range forces on Penning ionization. Opt. Spectrosc. 56, 130 (1984) Soviet Union
02628 T	A33: Ar + Li; Ar + Na; Kr + Li; Kr + Na; Xe + Li; Xe + Na A11: Ar^0 + Li; Ar^0 + Na; Kr^0 + Li; Kr^0 + Na; Xe^0 + Li; Xe^0 + Na	$2x10^5$ cm/sec	Petrashen, A. G.; Rebane, V. N.; Rebane, T. K. Effective cross sections for the production and breakdown of alignment for the ^4P doublet in asisotropic collisions. Opt. Spectrosc. 56, 233 (1984) Soviet Union

Ref. No.	Reactants	Energy Range	Reference
02629 T	A36: He^{2+} + Ar; He^{2+} + Kr	20–1000 keV	Chatterjee, S. N.; Kumar, A.; Roy, B. N. BKA calculations for double electron capture by multicharged ions from heavy targets. Physica B+C 125, 111 (1984) India
02630 E-T	H02: hν + W; hν + Hg; hν + Pb; hν + Bi; hν + Th; hν + U	70–300 keV	Krishna Rao, G.; Perumalla, A.; Nageswara Rao, A. S. A study on atomic photo effect cross sections at the K-edge in high Z-elements. Physica B+C 125, 334 (1984) India
02631 E-T	H02: hν + Y; hν + La; hν + Ce; hν + Pr; hν + Nd; hν + Sm; hν + Eu; hν + Gd; hν + Tb; hν + Dy; hν + Ho; hν + Er; hν + Tm; hν + Yb	30–662 keV	Suresh Babu, K.; Chandralingam, S.; Krishna Reddy, D. V. Total mass attenuation cross section of rare earth elements in the energy range 30 to 662 keV and derived photoelectric cross sections. Physica B+C 125, 353 (1984) India
02632 E-T	E03: e + Ar^+; e + Ar E35: e + Ar^+; e + Ar	15–200 eV	Musielok, J.; Finken, K. H.; Ackermann, U. Simultaneous ionization and excitation of argon in an ionization wave. Physica B+C 125, 365 (1984) West Germany
02633 E-T	H36: hν + Li; hν + Na; hν + K	0–14 eV	Tiwary, S. N.; Nicolaides, C. A. Generalized oscillator strengths and photoionization of alkali-metal atoms. Physica B+C 125, 379 (1984) Greece
02634 E	E33: e + I_2 E38: e + I_2	10–200 eV	Bano, K.; Goto, T.; Hattori, S. Emission cross sections for the laser lines of I* by electron - I_2-molecule collisions. Phys. Lett. A 104, 146 (1984) Japan
02635 T	H36: 2hν + H*	Threshold	Fainshtein, A. G.; Manakov, N. L.; Marmo, S. I. Use of Coulomb Green function for the calculation of above-threshold multiphoton transitions. Phys. Lett. A 104, 347 (1984) Soviet Union
02636 T	C02: Undef	Undef	Kamaratos, E. Covalent bonding effect on the mean excitation energy of H_2 with the local plasma model. Phys. Lett. A 104, 415 (1984) United States
02637 T	H36: hν + Ar	10–200 eV	Strakhova, S. I.; Zayac, T. S. Argon photoionization in the region of the lowest resonance of the two-particle - two-hole type. Phys. Lett. A 105, 36 (1984) Soviet Union
02638 E	L16: I^- + He; I^- + Ne; I^- + Ar; I^- + Kr; I^- + Xe	10–100 keV	Hird, B.; Rahman, F. One- and two-electron detachment from I^- in single rare-gas collisions. Phys. Rev. A 30, 2983 (1984) Canada
02639 T	A33: Rb* + CO; Na* + He; Na* + Xe A37: Rb* + CO; Na* + He; Na* + Xe A38: Rb* + CO; Na* + He; Na* + Xe A11: Rb* + CO; Na* + He; Na* + Xe	300–430 K	Petitjean, L.; Gounand, F. Simple analytical formulas for collisional l mixing, n changing, and ionization of Rydberg atoms with neutral particles at thermal energy. Phys. Rev. A 30, 2946 (1984) France
02640 T	E02: e + H E17: e + H	0–0.7 a.u.	Berger, H.; Sandhas, W.; Alt, E. O. Quasiparticle integral equations for the electron-hydrogen system. Phys. Rev. A 30, 2965 (1984) West Germany
02641 T	E33: e + H* E17: e + H*	100 eV	Sarkar, S.; Chakraborty, N. Different forms of direct- and exchange-scattering amplitudes for the n_is-n_fs transition in electron-hydrogen collisions. Phys. Rev. A 30, 2988 (1984) India
02642 T	D09: Undef	Undef	Bacic, Z.; Bosanac, S. D. Analysis of rotationally inelastic molecule-surface collisions: a two-dimensional treatment. Phys. Rev. A 30, 2598 (1984) West Germany
02643 T	E02: e + H_2 E17: e + H_2	1–10 eV	Gibson, T. L.; Lima, M.A.P.; Takatsuka, K.; McKoy, V. Ab initio inclusion of polarization effects in the Schwinger multichannel formulation: application to elastic e-H_2 scattering. Phys. Rev. A 30, 3005 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02648 T	E05: Undef	Undef	Grujic, P. V. Energy distribution in the near-threshold electron-impact ionization of atoms and ions. Phys. Rev. A 33, 3012 (1986) Yugoslavia
02649 T	E31: Undef	Undef	Baker, D. L. Redistribution of scattered light in resonant electronic Raman scattering from localized scattering centers. Phys. Rev. A 36, 3033 (1986) United States
02646 T	E36: nhν + Xe	1.368 μm	Muller, H. G.; Tip, A. Multiphoton ionization in strong fields. Phys. Rev. A 33, 3339 (1986) The Netherlands
02647 T	E36: hν + H_2; hν + Ba; hν + N_2	1613-783 Å	Giusti-Suzor, A.; Lefebvre, Brion, H. Theoretical study of coupled resonances near ionization thresholds: application to the H_2 photoionization spectrum. Phys. Rev. A 30, 3057 (1984) France
02648 T	E36: e + C^{++}; e + O^{++}; e + Ar^{+++}; e + Fe^{23+}	3.25-13 Ry	LaGattuta, K. J. Effects of LS-coupling order and configuration interaction upon dielectronic-recombination rates: Be sequence (dn = 3). Phys. Rev. A 33, 3772 (1986) United States
02649 T	A37: B^+ + H	Undef	Sister, T. G.; Lin, C. D. *Erratum: Triple-center treatment of ionization in p-H collisions [Phys. Rev. A 25, 3371 (1984)]. Phys. Rev. A 33, 3323 (1986) United States
02650 T	A33: C^{6+} + H; B^{5+} + H; O^{8+} + H A36: C^{6+} + H; B^{5+} + H; O^{8+} + H	6-100 keV/amu	Fritsch, W. Determination of high-n partial transfer cross sections in large-nucleus-hydrogen-atom collisions. Phys. Rev. A 33, 3324 (1986) West Germany
02651 E	E35: e + Ar E37: e + Ar	300-8000 eV	Rippler, R.; Saeed, K.; Duncan, A. J.; Kleinpoppen, H. Electron spectroscopy of multiple ionization of argon by electron impact. Phys. Rev. A 33, 3328 (1986) United Kingdom
02652 T	E36: nhν + H_2	Undef	Dixit, S. N.; Lynch, D. L.; McKoy, V. Three-photon resonant four-photon ionization of H_2 via the C $^1\pi_u$(sat v) state. Phys. Rev. A 33, 3332 (1986) United States
02653 E	D36: He^+ + Na; He^+ + Mg; He^+ + Al	1 keV	Zampieri, G.; Baragiola, R. Ion-induced Auger emission from solids: correlation between Auger energies and work functions. Phys. Rev. B 29, 1483 (1984) Argentina
02654 T	C04: PERT$^+$ + Si; PERT$^+$ + Ge	0.4-80 keV	Gupta, S. K.; Bhattacharyya, P. K. Shell effects in low-energy heavy-ion ranges. Phys. Rev. B 29, 2449 (1984) India
02655 E	D13: hν + RbBr; hν + RI; hν + AgBr; hν + AgCl	363-195 nm	Kanzaki, H.; Mori, T. Photon-stimulated desorption of neutrals from silver and alkali halides. Phys. Rev. B 29, 3573 (1984) Japan
02656 T	D37: He + Si	23-100 meV	Annett, J. F.; Haydock, R. Helium diffraction from metal surface: elimination of a class of potentials. Phys. Rev. B 29, 3773 (1984) United States
02657 E	D33: Ar^+ + Cu; Ar^+ + Ag; Ar^+ + Zr; Ar^+ + Cr	3.5-3.0 keV	Vasile, M. J. Velocity dependence of secondary-ion emission. Phys. Rev. B 29, 3785 (1984) United States
02658 E	D37: He + He	2 meV	Siovani, M.; Goodstein, D. L.; Cole, M. W. Scattering of low-energy helium atoms from a low-temperature solid surface. Phys. Rev. B 29, 3935 (1984) United States
02659 E	D13: hν + LiF; hν + NaF	37-72 eV	Parks, C. C.; Shirley, D. A.; Loubriel, G. Beam-exposure dependence and mechanisms of photon-stimulated desorption from alkali fluorides. Phys. Rev. B 29, 4739 (1984) United States
02660 T	D07: Undef	Undef	Crljen, Z.; Gumhalter, B. Electronic Doyle-Keller effect in atom-surface scattering. Phys. Rev. B 29, 6633 (1984) Yugoslavia
02661 E	D38: He^+ + Si; He^+ + Cs + Si D39: He^+ + Si; He^+ + Cs + Si	75-183 keV	Haight, R.; Feldman, L. C.; Buck, T. M.; Gibson, W. M. Neutralization of energetic He ions scattered from clean and Cs-covered Si(100). Phys. Rev. B 33, 734 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
02662 E	D12: e + H_2O + TiO_2 D13: e + H_2O + TiO_2	6-60 eV	Bermudez, V. M.; Hoffbauer, M. A. Electron-stimulated desorption of neutrals from ionic surfaces: OH from TiO_2. Phys. Rev. B 30, 1125 (1984) United States
02663 T	B03: Undef	Undef	Goldberg, E. C.; Ferron, J.; Passeggi, M.C.G. Secondary-ion emission: a molecular-orbital approach. Phys. Rev. B 30, 2448 (1984) Argentina
02664 E	C08: N_2^+ + Cu; N_2^+ + Ag	1-5 keV	Zomorrodian, A.; Tougaard, S.; Ignatiev, A. Range distributions of low-energy nitrogen ions in metals. Phys. Rev. B 30, 3124 (1984) United States
02665 T	D02: Undef	Undef	Jakas, M. M.; Harrison, D. E., Jr. Influence of electronic energy losses on atom ejection processes. Phys. Rev. B 30, 3573 (1984) United States
02666 T	C06: H^+ + Al; He^{2+} + Al	Undef	Sols, F.; Flores, F. Charge transfer processes for light ions moving in metals. Phys. Rev. B 30, 4878 (1984) Spain
02667 E	D04: H^+ + Si	3-1.5 MeV	Kudo, H.; Schneider, D.; Kanter, E. P.; Arcuni, P. W.; Johnson, E. A. Energy spectra of ion-induced Auger electrons under channeling conditions. Phys. Rev. B 30, 4899 (1984) United States
02668 T	C02: Cu^+ + Cu; Xe^+ + W; D^+ + Si; Ne^+ + Mo	5-60 keV	Rauhala, E. Nuclear stopping in polycrystalline materials: range distributions and Doppler-shift attenuation analysis. Phys. Rev. B 30, 5313 (1984) Finland
02669 T	D07: Undef	Undef	Holmberg, C.; Apell, P. Van der Waals interaction in atom-surface scattering. Phys. Rev. B 30, 5721 (1984) Sweden
02670 T	D06: Undef	1-30 eV	Michaud, M.; Sanche, L. Interaction of low-energy electrons (1-30 eV) with condensed molecules: I. Multiple scattering theory. Phys. Rev. B 30, 6067 (1984) Canada
02671 E	D06: e + N_2 + Pt; e + CO + Pt; e + Ar + Pt	1-30 eV	Sanche, L.; Michaud, M. Interaction of low-energy electrons (1-30 eV) with condensed molecules: II. Vibrational-librational excitation and shape resonances in thin N_2 and CO films. Phys. Rev. B 30, 6078 (1984) Canada
02672 E	E03: e + Ne^{7+}	50-100 eV	Chang, C. C.; Greve, P.; Kolk, K. H.; Kunze, H. J. Experimental excitation rate coefficients for Ne VIII ions. Phys. Scr. 29, 132 (1984) West Germany
02673 T	A03: H^+ + He	0.01-2.0 MeV	Sidorovich, V. A. On the cross sections for the excitation of the $2p3p\,^1P$, $2p3d\,^1D$ and $3p3d\,^1D$ autoionizing states of helium by protons. Phys. Scr. 29, 230 (1984) Soviet Union
02674 T	E03: e + CO	Undef	Agren, H.; Arneberg, R. Origin of fine structure in the vicinity of the K-edges in the CO electron energy loss spectra. Phys. Scr. 30, 55 (1984) Sweden
02675 T	A17: Al + Al; Cu + Cu; Ar + Ar	Undef	Smolander, K. J.; Pastore, P. Monte Carlo testing of pair potentials for Ar, Al and Cu. Phys. Scr. 30, 86 (1984) Finland
02676 T	E06: e + Al seq K06: Oscillator strengths	Undef	Aashamar, K.; Luke, T. M.; Talman, J. D. Oscillator strengths in the aluminum sequence. Phys. Scr. 30, 121 (1984) Norway
02677 T	A06: C^{6+} + H	10^7-2×10^7 cm/sec	Grozdanov, T. P.; Belkic, D. S. A model for final-states mixing following electron capture in slow collisions of fully stripped, multicharged ions and hydrogen atoms. Phys. Scr. 30, 194 (1984) Yugoslavia
02678 E	A07: F^{6+} + C; F^{7+} + C; F^{8+} + C; Si^{10+} + C; Si^{12+} + C; Si^{11+} + C A08: F^{6+} + C; F^{7+} + C; Si^{12+} + C; Si^{11+} + C C05: F^{6+} + C; F^{7+} + C; F^{8+} + C; Si^{10+} + C; Si^{12+} + C; Si^{11+} + C C06: F^{6+} + C; F^{7+} + C; F^{8+} + C; Si^{10+} + C; Si^{12+} + C; Si^{11+} + C	10-56 MeV	Nielsen, P. T.; Dyrdal, K.; Bonde Nielsen, K.; Rud, N. K-shell cross sections extracted from measured charge-state distributions for F and Si ions penetrating C. Phys. Scr. 30, 297 (1984) Denmark

Ref. No.	Reactants	Energy Range	Reference
02679 E	D02: $Kr^+ + V_3Si$; $Kr^+ + V_5Si_3$; $Kr^+ + VSi_2$	10 keV	Beisebrodt, P.; Starbeck, P.; Hauffe, W. Sputtering behaviour of vanadium silicide single crystals under 10 keV Kr^+ ion bombardment. Phys. Status Solidi A 81, 259 (1984) East Germany
02680 E	D03: $Ar^+ + Fe$	3 keV	Uhlmann, K.; Schmidt, E. Influence of work function change due to oxygen chemisorption on the secondary-ion emission probability. Phys. Status Solidi A 85, K19 (1984) East Germany
02681 E	D10: $D^+ + Si$	25–2500 eV	Hildebrandt, D.; Strusny, H.; Groetzschel, R.; Kot..., E.; Manzti, F. Damage and trapping behaviour of crystalline silicon at low energy deuterium implantation. Phys. Status Solidi A 85, K35 (1984) East Germany
02682 E	C02: $e + GaAsP$	10–45 keV	Gelgar', G.; Werner, U. Kilovolt electron energy loss distribution in GaAsP. Phys. Status Solidi A 85, 235 (1984) East Germany
02683 T	C02: H^+ + PERT; He^+ + PERT	Undef	Shindo, S. The recoil effect on the electronic stopping power of solids for slowly moving atoms. Phys. Status Solidi B 125, 161 (1984) Japan
02684 T	C04: $PERT^+ + Si$	5–30 keV	Chubisov, M. A.; Akkerman, A. F. Simulation of Z_1-oscillations in low-energy heavy ion ranges in solids. Phys. Status Solidi B 125, 169 (1984) Soviet Union
02685 E	H02: $h\nu + O_3$	350–240 nm	Freeman, D. E.; Yoshino, K.; Esmond, J. R.; Parkinson, W. H. High resolution absorption cross-section measurements of ozone at 195 K in the wavelength region 240–350 nm. Planet. Space Sci. 32, 239 (1984) United States
02686 E	D02: $H^+ + e + C$	40 eV–10 keV	Guseva, M. I.; Ivanov, S. M.; Mansurova, A. N. Synergic effect in irradiating graphite with H^+ ions and electrons. Sov. At. Energy 55, 836 (1984) Soviet Union
02687 E	D02: $H^+ + Cu$; $He^{2+} + Cu$; $C^{6+} + Cu$	3.65 GeV/n	Aleinikov, V. E.; Timoshenko, G. N. Angular distributions of fluxes of charged particles from a thick target bombarded with beams of protons, alpha particles, and ^{12}C nuclei with energies of 3.65 GeV/nucleon. Sov. At. Energy 55, 878 (1984) Soviet Union
02688 T	A03: $H^+ + Fe^{23+}$	0.5–10 keV	Abramov, V. A.; Gontis, V. G.; Lisitsa, V. S. Excitation of impurities by heavy particles and radiative loss of a fusion plasma. Sov. J. Plasma Phys. 10, 235 (1984) Soviet Union
02689 E	E34: $e + He_2^+$ E36: $e + He_2^+$	0.03–0.6 eV	Ivanov, V. A.; Skoblo, Y. E. Recombination channels of molecular ions He_2^+ and electrons. Sov. Phys. J. 27, 144 (1984) Soviet Union
02690 E	E36: $e + He^+$	1000 K	Yancharina, A. M.; Muravʼev, I. I.; Shevnin, A. M.; Khoruzhaya, L. E. Level population by recombination in a pulsed plasma jet in an He-Xe mixture. Sov. Phys. J. 27, 177 (1984) Soviet Union
02691 T	E04: $e + H_2^+$	1–10 eV	Marchenko, V. S. Dissociation of homonuclear ions by electron impact. Sov. Phys.-JETP 58, 292 (1983) Soviet Union
02692 E-T	E36: $e + He^+$	30–50 eV	Zapesochnyi, I. P.; Semenyuk, Y. N., Dashchenko, A. I.; Imre, A. I.; Zapesochnyi, A. I. Dielectronic recombination of the helium ion. Sov. Phys.-JETP Lett. 39, 141 (1984) Soviet Union
02693 E-T	D34: $Ar^+ + Ni$; $Ar^+ + Cu$	30–35 keV	Mitov, V. U.; Parilis, E. S. Auger spectra during ion bombardment of crystals. Sov. Tech. Phys. Lett. 9, 525 (1984) Soviet Union
02694 E-T	C02: $H^+ + C$	100–900 keV	Kulikauskas, V. S.; Mashkov, F. G.; Pozanov, A. A.; Ormancv, A. R.; Shubin, V. F. Difference between the stopping cross sections of diamond and graphite for protons moving in random directions. Sov. Tech. Phys. Lett. 10, 46 (1984) Soviet Union

Ref. No.	Reactants	Energy Range	Reference
02695 E	D30: e + LiF; e + NaCl; e + KCl; e + CsCl; e + CsBr; e + CI	3.6-3.8 keV	Galy, P. V.; God, I. Z.; Imul, N. A. Secondary emission efficiency of insulator emitters within an average energy range of incident electrons. Ukr. Phys. J. 29, 265 (1984) Soviet Union
02696 T	A36: $C^{2+} + C^{0+}$; $B^{2+} + B^{0+}$; $O^{2+} + O^{0+}$	3.37-133 keV	Barbovanets, N. I.; Lazur, V. Y.; Chikisov, S. I. Resonant two-electron charge exchange in ion-ion collisions. Ukr. Phys. J. 29, 835 (1984) Soviet Union
02697 E	D11: H_2 + Zr	300-1100 K	Lin, J. H.; Gilbert, R. I. The interaction of hydrogen with polycrystalline zirconium. I. Sticking coefficients and binding states. Appl. Surf. Sci. 18, 315 (1984) United States
02698 E	D03: $In^+ + Si$; $In^+ + C_2 + Si$; $In^+ + Ti$; $In^+ + O_2 + Ti$; $In^+ + Nb$; $In^+ + O_2 + Nb$	10 keV	Gnaser, H. Secondary ion emission from transition metals during exposure to oxygen and subsequent sputtering. Appl. Surf. Sci. 18, 389 (1984) Austria
02699 T	D33: Undef	Undef	Sroubek, Z. Electronic excitations in collision cascades and the ionization of sputtered particles. Appl. Phys. Lett. 45, 809 (1984) Czechoslovakia
02700 E	D32: $Ar^+ + Cl_2 + Si$ D17: $Ar^+ + Cl_2 + Si$	1 keV	Bosman, B. A.; Saving, H. H. Ion-enhanced gas-surface kinetics: the Si-Cl_2-Ar system. Appl. Phys. Lett. 45, 860 (1984) United States
02701 E	J00: Sputtering		Matsunami, N.; Yamamura, Y.; Itikawa, Y.; Itoh, N.; Kazumata, Y.; Miyagawa, S.; Morita, K.; Shimizu, R.; Tawara, H. Energy dependence of the ion-induced sputtering yields of monatomic solids. At. Data Nucl. Data Tables 31, 1 (1984) Japan
02702 E	J35: Ion transport in gases		Ellis, H. W.; Thackston, M. G.; McDaniel, E. W.; Mason, E. A. Transport properties of gaseous ions over a wide energy range: Part III. At. Data Nucl. Data Tables 31, 113 (1984) United States
02703 E-T	L02: Excitation; Ionization		Itikawa, Y.; Takayanagi, K.; Iwai, T. Annotated bibliography on electron collisions with atomic positive ions: excitation and ionization. At. Data Nucl. Data Tables 31, 215 (1984) Japan
02704 T	J31: Proton stopping power J32: Proton stopping power		Ciderstedt, J.; Sabin, J. R. Orbital and whole-atom proton stopping power and shell corrections for atoms with Z less than or equal to 36. At. Data Nucl. Data Tables 31, 275 (1984) Denmark
02705 T	H06: $h\nu + H_2O$	7-60 eV	Cacelli, I.; Moccia, R.; Carravetta, V. Photoionization cross section calculations for H_2O and NH_3 by one-center expansion and Stieltjes technique. Chem. Phys. 90, 313 (1984) Italy
02706 E	E05: e + Xe	15-180 eV	Stephan, K.; Mark, T. D. Absolute partial electron impact ionization cross sections of Xe from threshold up to 180 eV. J. Chem. Phys. 81, 3116 (1984) Austria
02707 T	A17: He + O_2	Undef	Van Lenthe, J. H.; Van Duijneveldt, F. B. Ab initio calculations on the He-O_2 potential energy surface. Hartree-Fock instability of C_s. J. Chem. Phys. 81, 3168 (1984) The Netherlands
02708 T	A14: $H_2^+ + He$; $HD^+ + He$	0-10 eV	Turner, T.; Cotuit, C.; Lee, Y. T. The effects of collision energy and vibrational excitation on H_2^+, HD^+ + He reactions. J. Chem. Phys. 81, 3075 (1984) United States
02709 T	A17: H_2 + H_2; H_2 + D_2	Undef	Berman, M. J.; Watts, R. O.; Buck, U. A spherical potential for hydrogen from solid state and scattering data. J. Chem. Phys. 81, 3533 (1984) Australia
02710 P	H06: $h\nu + CO_2$	80-2 nm	Rubin-Fraschin, M. J.; Delwiche, J.; Horin, F.; Adam, M. Y.; Benner, I.; Hoy, P. Synchrotron radiation study of vibrationally resolved partial photoionization cross sections of CC, between 64 and 80 nm. J. Chem. Phys. 81, 4286 (1984) France

Ref. No.	Reactants	Energy Range	Reference
02711 E	D02: H + C; H + TiB_2 D17: H + C; H + TiB_2	423-1543 K	Ashby, C.I.H. Chemical erosion of first wall materials by atomic hydrogen at high temperatures. J. Nucl. Mater. 123, 1036 (1984) United States
02712 A	D02: H^+ + Cu + SS D13: H^+ + Cu + SS	0.3-1 keV	Pontau, A. E.; Kerst, R. A.; Causey, R. A. Ion impact desorption measurements of sputter-deposited copper on stainless steel. J. Nucl. Mater. 123, 1412 (1984) United States
02713 E	D02: H^+ + Be; H^+ + SiC; H^+ + TiC; H^+ + B_4C; D^+ + Be; D^+ + SiC; D^+ + TiC; D^+ + B_4C; T^+ + Be; T^+ + SiC; T^+ + TiC; T^+ + B_4C; He^+ + Be; He^+ + SiC; He^+ + TiC; He^+ + B_4C	0.06-10 keV	Bohdansky, J.; Roth, J. Light ion sputtering of low Z materials in the temperature range 20-1100 °C. J. Nucl. Mater. 123, 1417 (1984) West Germany
02714 E	D02: Ar^+ + Cu + Li	1-3 keV	Krauss, A. R.; Gruen, D. M.; Venugopalan, M. Sputtering properties of lithium-bearing copper alloys. J. Nucl. Mater. 123, 1425 (1984) United States
02715 E	D02: O^+ + C; O^+ + Mo; He^+ + C; He^+ + Mo; Ne^+ + C; Ne^+ + Mo; Ar^+ + C; Ar^+ + Mo; Kr^+ + C; Kr^+ + Mo; Xe^+ + C; Xe^+ + Mo	0.1-10 keV	Hechtl, E.; Bohdansky, J. Sputtering behavior of graphite and molybdenum at low bombarding energies. J. Nucl. Mater. 123, 1431 (1984) West Germany
02716 E	D02: H + C D17: H + C	300-1100 K	Philipps, V.; Flaskamp, K.; Vietzke, E. A comparative study of the chemical erosion of different types of graphite and the influence of nickel surface contaminations. J. Nucl. Mater. 123, 1443 (1984) West Germany
02717 E	D02: H^+ + C; C^+ + C; O^+ + C; Ar^+ + C	0.13-150 keV	Roth, J.; Roberto, J. B.; Wilson, K. L. Enhanced sputtering of graphite at high temperature. J. Nucl. Mater. 123, 1447 (1984) United States
02718 E	D34: H^+ + Al; H^+ + Si; H^+ + Fe; He^+ + Al; He^+ + Si; He^+ + Fe; N^+ + Al; N^+ + Si; N^+ + Fe; O^+ + Al; O^+ + Si; O^+ + Fe; Ne^+ + Al; Ne^+ + Si; Ne^+ + Fe; Ar^+ + Al; Ar^+ + Si; Ar^+ + Fe	3-10 keV	Tanabe, T.; Imamura, M.; Imoto, S. Surface processes occurring under reactive ion bombardment studied by secondary electron emission. J. Nucl. Mater. 123, 1486 (1984) Japan
02719 T	D01: H + Al; H + Mo; H + Cu; H + W; H + Ni; H + Ti; H + V; H + Ta; H + Zr; H + Be; H + C; H + B; H + Si; H + Fe; H + SS; H + Inconel D18: H + Al; H + Mo; H + Cu; H + W; H + Ni; H + Ti; H + V; H + Ta; H + Zr; H + Be; H + C; H + B; H + Si; H + Fe; H + SS; H + Inconel	Undef	Doyle, B. L.; Brice, D. K. Steady state hydrogen transport in solids exposed to fusion reactor plasmas: Part II. Applications of theory. J. Nucl. Mater. 123, 1523 (1984) United States
02720 T	D01: Undef D18: Undef	Undef	Brice, D. K. Steady state hydrogen transport in solids exposed to fusion reactor plasmas: Part III. Isotope effects. J. Nucl. Mater. 123, 1531 (1984) United States
02721 E	D01: H + SS D18: H + SS	Undef	Causey, R. A.; Kerst, R. A.; Mills, B. E. The effect of surface composition on plasma driven permeation of deuterium through 304 stainless steel. J. Nucl. Mater. 123, 1547 (1984) United States
02722 T	D01: H + SS D18: H + SS	Undef	Schwarzinger, G. W.; Dobrozemsky, R. Permeation and diffusion of hydrogen and deuterium under fission-reactor radiation. J. Nucl. Mater. 123, 1560 (1984) Austria
02723 E	D18: D + Ni	20-30 keV	Tanabe, T.; Furuyama, Y.; Imoto, S. Reemission and permeation of deuterium implanted into metals. J. Nucl. Mater. 123, 1563 (1984) Japan
02724 E	D18: H^+ + Si	75 keV	Choyke, W. J.; Irwin, R. B.; Spitznagel, J. A.; Wood, S.; Hall, F. O. Implanted hydrogen effects at high concentrations in model low Z shielding materials. J. Nucl. Mater. 123, 1585 (1984) United States
02725 E	D18: H + C; D + C	Undef	Stangeby, P. C.; Auciello, O.; Haasz, A. A.; Doyle, B. L. Trapping of sub-eV hydrogen and deuterium atoms in carbon. J. Nucl. Mater. 123, 1592 (1984) Canada

Ref. No.	Reactants	Energy Range	Reference
02726 E	D18: D^+ + Be	500–1500 eV	Wampler, W. R. Retention and thermal release of deuterium implanted in beryllium. J. Nucl. Mater. 123, 1598 (1984) United States
02727 T	D18: H + SS	Undef	Stangeby, P. C. An analytic approximation for time-dependent retention and re-cycle of atomic hydrogen in materials. J. Nucl. Mater. 126, 193 (1984) Canada
02728 T	A14: H + H_2O	0.05–1.7 eV	Schatz, G. C.; Colton, M. C.; Grant, J. L. A quasiclassical trajectory study of the state-to-state dynamics of H + H_2O → OH + H_2. J. Phys. Chem. 88, 2971 (1984) United States
02729 T	A14: F + H_2; F + HD; F + D_2 A17: F + H_2; F + HD; F + D_2	1.6–[illegible].8 eV	Hayes, E. F.; Walker, R. B. Reactive differential cross sections in the rotating linear model. Reactions of fluorine atoms with hydrogen molecules and their isotopic variants. J. Phys. Chem. 88, 3318 (1984) United States
02730 T	C04: e + H_2	500 eV	Mozumder, A.; LaVerne, J. A. Range straggling of low-energy electrons. J. Phys. Chem. 88, 3926 (1984) United States
02731 T	A17: He + He; He + Ne; He + Ar; He + Kr; He + Xe; Ne + Ne; Ne + Ar; Ne + Kr; Ne + Xe; Kr + Kr; Kr + Xe; Ar + Ar; Ar + Kr; Ar + Xe; Xe + Xe; H_2 + He; H_2 + Ne; H_2 + Ar	Undef	LeSar, R. Electron-gas plus damped-dispersion model for intermolecular forces. The rare-gas and H_2-He, H_2-Ne, and H_2-Ar potentials. J. Phys. Chem. 88, 4272 (1984) United States
02732 E	A03: Ar + CO_2; N_2 + CO_2	2–5 km/s	Rathee, A. Vibrationally inelastic collision of CO_2 with N_2 and Ar. J. Phys. Chem. 88, 4480 (1984) United States
02733 P	J01: Excitation; De-excitation		Steinfeld, J. I. Rate data for inelastic collision processes in the diatomic halogen molecules. J. Phys. Chem. Ref. Data 13, 445 (1984) United States
02734 E	E09: e + H_2	50 eV	Graham, W. G. Vacuum ultraviolet emission and H^- production in a low pressure hydrogen plasma. J. Phys. D 17, 2225 (1984) United Kingdom
02735 E	D02: Ar^+ + Au	15–60 keV	Kojima, S.; Kimura, H.; Nanmami, M. Angular dependence of sputtering yield of Au on bombardment by 15–60 keV Ar^+. Jpn. J. Appl. Phys. Pt. 1 22, 1831 (1983) Japan
02736 E	C02: H^+ + Ag; D^+ + Ag; He^+ + Ag	0.14–2.6 MeV/amu	Lombaard, J.; Conradie, J.; Friedland, E. Energy-loss and straggling of hydrogen and helium ions in silver. Nucl. Instrum. Methods Phys. Res. 216, 293 (1983) South Africa
02737 E	D07: N^{3+} + Au	0.9–3.5 MeV	Mingay, D. W.; Bosner, B. Enhanced yields of different charge states of nitrogen ions backscattered at 180 degrees. Nucl. Instrum. Methods Phys. Res. 216, 517 (1983) South Africa
02738 E	D03: Br^{6+} + Cu; Br^{6+} + Nb; Br^{6+} + Ta	75 MeV	O'Connor, J. P.; Blauner, P. G.; Weller, R. A. Energy and mass analysis of secondary ions sputtered from metallic targets by MeV heavy ions. Nucl. Instrum. Methods Phys. Res. 218, 293 (1984) United States
02739 E	D03: O_2^+ + Si; O_2^+ + Ge; O_2^+ + GaAs	3–12 keV	Wittmaack, K. The effect of the angle of incidence on secondary ion yields of oxygen-bombarded solids. Nucl. Instrum. Methods Phys. Res. 218, 307 (1984) West Germany
02740 E	D03: Xe^+ + Si + O	9 keV	Gnaser, H. Oxygen-concentration dependent enhancement of positive secondary ion emission from silicon. Nucl. Instrum. Methods Phys. Res. 218, 312 (1984) Austria
02741 E	D03: Ar^+ + Cr; Ar^+ + Ag; Ar^+ + Cu; Ar^+ + Zr	0.5–3.0 keV	Vasile, M. J. The velocity dependence of secondary ion yields. Nucl. Instrum. Methods Phys. Res. 218, 319 (1984) United States
02742 E	D13: Cs^+ + O + Si; Cs^+ + C + Si; Cs^+ + N + Si; Cs^+ + SiH + Si	10 keV	Wittmaack, K. Background formation in SIMS analysis of hydrogen, carbon, nitrogen and oxygen in silicon. Nucl. Instrum. Methods Phys. Res. 218, 327 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
02743 E	D03: Ar^+ + Al	83 keV	Garret, R. F.; MacDonald, R. J.; O'Connor, D. J. Ion neutralisation in secondary ion mass spectrometry. Nucl. Instrum. Methods Phys. Res. 218, 333 (1984) Australia
02744 E-T	D03: Ar^+ + GaAs; Ar^+ + InAs	300-2000 eV	Sroubek, Z. Ionization of atoms sputtered from A(sup III) V(sup V) compounds. Nucl. Instrum. Methods Phys. Res. 218, 336 (1984) Czechoslovakia
02745 E	C30: Be^+ + Al C35: Be^+ + Al D18: Be^+ + Al	553 keV	Bodart, F.; Connelly, S. E. Lateral variation measurement of helium concentration of implanted Al foils using a proton microbeam. Nucl. Instrum. Methods Phys. Res. 218, 529 (1984) Belgium
02746 E	D02: Be^+ + H_2O; Be^+ + D_2O; Be^+ + CO_2; Be^+ + SO_2; Be^+ + H_2O; Be^+ + D_2O; Ne^+ + CO_2; Ne^+ + SO_2; Ar^+ + H_2O; Ar^+ + D_2O; Ar^+ + CO_2; Ar^+ + SO_2 D17: Be^+ + H_2O; Be^+ + D_2O; Be^+ + CO_2; Be^+ + SO_2; Be^+ + H_2O; Be^+ + D_2O; Ne^+ + CO_2; Ne^+ + SO_2; Ar^+ + H_2O; Ar^+ + D_2O; Ar^+ + CO_2; Ar^+ + SO_2	0.045-1.5 keV	Boring, J. W.; Johnson, R. E.; Reimann, C. T.; Garrett, J. W.; Brown, W. L.; Marcantonio, K. J. *Ion-induced chemistry in condensed gas solids.* Nucl. Instrum. Methods Phys. Res. 218, 707 (1984) United States
02747 E	D02: Co^+ + Co	100 keV	Johansen, A.; Johnson, E.; Sarholt-Kristensen, L.; Aldali, S. H. Self sputtering on cobalt single crystals. Nucl. Instrum. Methods Phys. Res. 218, 737 (1984) Denmark
02748 E	D02: Xe^+ + Mo	3 keV	Yiv, A. B.; King, E. V.; Lin, S. H.; Tsong, I.S.T. Kinetic energy distributions of sputtered particles ion non-cascade sputtering processes. Nucl. Instrum. Methods Phys. Res. 218, 742 (1984) United States
02749 E	D02: H^+ + NbB_2; H^+ + TiB_2; H^+ + B_4C; H^+ + TaC; H^+ + B; H^+ + C; D^+ + NbB_2; D^+ + TiB_2; D^+ + B_4C; D^+ + TaC; D^+ + B; D^+ + C; He^+ + NbB_2; He^+ + TiB_2; He^+ + B_4C; He^+ + TaC; He^+ + B; He^+ + C	0.3-50 keV	Roth, J.; Schdansky, J.; Eckstein, W. Angular distributions and differential sputtering yields of binary compounds as a function of angle of incidence. Nucl. Instrum. Methods Phys. Res. 218, 751 (1984) West Germany
02750 E	D04: O^+ + Si; O^+ + Cu; O^+ + Al; O^+ + Mg; O^+ + $MiSi_2$; O^+ + Mg_2Cu	6-32 keV	Saemann-Ischenko, G.; Schmidt, W. Auger electron emission from solids during bombardment with keV ions. Nucl. Instrum. Methods Phys. Res. 218, 757 (1984) West Germany
02751 E	D04: H^+ + Si; H^+ + Ni; H^+ + Au; He^+ + Si; He^+ + Ni; He^+ + Au	1-2 keV	MacDonald, J. R.; Feldman, L. C.; Silverman, E. J.; Davies, J. A.; Griffiths, K.; Jackman, T. E.; Horton, P. R.; Unertl, W. B. Auger electron emission induced by keV H^+ and He^+ ions. Nucl. Instrum. Methods Phys. Res. 218, 765 (1984) Canada
02752 E	D03: Ar^+ + Ti; He^+ + Ti	3 keV	Bellin, R. J.; Green, T. H.; Young, C. E.; Higgins, H. O. Electronic excitation of Ti atoms sputtered by energetic Ar^+ and He^+ from clean and monolayer oxygen covered surfaces. Nucl. Instrum. Methods Phys. Res. 218, 771 (1984) United States
02753 E	C01: Ar^{2+} + Mg; Ar^{2+} + Al; Ar^{2+} + Si C07: Ar^{2+} + Mg; Ar^{2+} + Al; Ar^{2+} + Si	160-380 keV	Cipolla, S. J.; Hildebrath, H. E. Multiple-collision analysis of characteristic x rays from low-energy Ar^{2+} traveling in solid targets. Nucl. Instrum. Methods Phys. Res. 218, 777 (1984) United States
02754 E	D04: He^+ + Ni + Fe; Ar^+ + Ni + Fe	5 keV	Soszka, M.; Soszka, B. Ion-electron emission from magnetostrictive alloy. Nucl. Instrum. Methods Phys. Res. 218, 782 (1984) Poland
02755 E	C30: C^+ + Si; C^+ + Ge; N^+ + Si; N^+ + Ge; Al^+ + Si; Al^+ + Ge; Ng^+ + Ge	20-100 keV	Saltenen, R.; Raisanen, J.; Hautala, M.; Anttila, A. Ranges of some 20-100 keV light ions in Si and Ge. Nucl. Instrum. Methods Phys. Res. 218, 785 (1984) Finland
02756 E	C02: H^+ + La; H^+ + Nd; H^+ + Tb; H^+ + Dy; H^+ + Lu; H^+ + Ta; H^+ + Re; H^+ + Ir; H^+ + Pt; H^+ + Au; H^+ + Bi	30-350 keV	Krist, T.; Hartung, S. Proton energies at the maximum of the electronic stopping cross section in materials with Z_1 less than or equal to 2, Z_2 less than or equal to 83. Nucl. Instrum. Methods Phys. Res. 218, 752 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
02757 E	A07: H^0 + Dy; H^0 + V; He^0 + Dy; He^0 + F	1-3 MeV	Cohen, D. D. L subshell ionization cross section for light ion bombardment of high Z targets. Nucl. Instrum. Methods Phys. Res. 218, 795 (1984) Australia
02758 E	C02: Pb^0 + Al; Al^0 + Ta C36: Pb^0 + Al; Al^0 + Ta	20-120 keV	Haetala, A. Computer simulations of slowing down of ions in polycrystalline materials. Nucl. Instrum. Methods Phys. Res. 218, 799 (1984) Finland
02759 E	C35: Ni^0 + Al; Ni^0 + Cu; Ni^0 + Ag; Ni^0 + Au; Si^0 + Au; Cl^0 + Au; Ti^0 + Au; Fe^0 + Au; Ge^0 + Au; Br^0 + Au; Nb^0 + Au	1.5 MeV/amu	Anthony, J. M. Heavy ion energy straggling. Nucl. Instrum. Methods Phys. Res. 218, 803 (1984) United States
02760 E	C32: H^0 + Cu; D^0 + Cu	70-500 keV/amu	Semrad, E.; Bauer, P.; Kemmer, P.; Huber, P.; Obermann, K. Search for an influence of the measuring method on stopping cross section data near the maxima. Nucl. Instrum. Methods Phys. Res. 218, 811 (1984) Austria
02761 E	C02: He^0 + PERT; Li^0 + PERT; B^0 + PERT; N^0 + PERT	50-1500 keV	Fink, D.; Biersack, J. P.; Stadele, M.; Tjan, K.; Cheng, Y. K. S_n stopping power oscillations as derived from range measurements. Nucl. Instrum. Methods Phys. Res. 218, 817 (1984) West Germany
02762 E	C32: H^0 + Ta; H^0 + Re; H^0 + In; H^0 + Pt; H^0 + Au; H^0 + Bi; H^0 + La; H^0 + Nd; H^0 + Tb; H^0 + Dy; H^0 + Lu; He^0 + Ta; He^0 + Re; He^0 + In; He^0 + Pt; He^0 + Au; He^0 + Bi; He^0 + La; He^0 + Nd; He^0 + Tb; He^0 + Dy; He^0 + Lu; Li^0 + Ta; Li^0 + Re; Li^0 + In; Li^0 + Pt; Li^0 + Au; Li^0 + Bi; Li^0 + La; Li^0 + Nd; Li^0 + Tb; Li^0 + Dy; Li^0 + Lu; Be^0 + Ta; Be^0 + Re; Be^0 + In; Be^0 + Pt; Be^0 + Au; Be^0 + Bi; Be^0 + La; Be^0 + Nd; Be^0 + Tb; Be^0 + Dy; Be^0 + Lu; B^0 + Ta; B^0 + Re; B^0 + In; B^0 + Pt; B^0 + Au; B^0 + Bi; B^0 + La; B^0 + Nd; B^0 + Tb; B^0 + Dy; B^0 + Lu	33-330 keV	Krist, T.; Bertone, F. Stopping ratios for 30-330 keV light ions in materials with Z1 less than or equal to Z2 less than or equal to 83. Nucl. Instrum. Methods Phys. Res. 218, 821 (1984) West Germany
02763 T	D35: hν + Al; hν + Cu; hν + Cd; hν + Ta; hν + Ge; hν + CsI; hν + Au; hν + Ag	0.036-2.75 keV	Grudskii, E. Y.; Kolchgin, N. N.; Smirnov, V. V.; Adadurov, A. F.; Imzerik, V. T. Experimental investigation and Monte Carlo calculation of photon-induced electron emission from solids. Nucl. Instrum. Methods Phys. Res. A 227, 126 (1984) Soviet Union
02764 E	C02: He^0 + Ge	1-2 MeV	Culbertson, R. J.; Withrow, S. P.; Barrett, J. H. Potential and stopping power information from ion channeling in Ge. Nucl. Instrum. Methods Phys. Res. B 233, 19 (1984) United States
02765 E	D36: CO^0 + C	18-89 keV/amu	Brischkora, B. J.; Koschar, P.; Semmler, J.; Latz, R.; Schader, J.; Grosswald, K. O. Ion induced electron ejection mechanisms from solid surfaces. Nucl. Instrum. Methods Phys. Res. B 233, 35 (1984) West Germany
02766 E	C31: H_2^0 + C C35: H_2^0 + C C36: H_2^0 + C	8.9-13.7 MeV/amu	Neubertzki, G. J.; Neuburger, M.; Polster, U. H_2^0 molecular ion loss studies. Nucl. Instrum. Methods Phys. Res. B 230, 38 (1984) West Germany
02767 T	C35: H_2^0 + C; HeH^0 + C	0.8-3.6 MeV	Nemonets, V. V.; Jamankyzov, N. K. Multiple scattering and wake effects in interactions of fast diatomic molecules with thin foils. Nucl. Instrum. Methods Phys. Res. B 233, 44 (1984) Soviet Union
02768 E	C02: He^0 + C; Li^0 + C; C^0 + C	0.8-7.2 MeV/amu	Cowern, N.E.B.; Read, P. M.; Sofield, C. J.; Bridwell, L. B.; Huntable, G.; Miller, M.; Lucas, M. D. Charge state dependence of dE/dx for ions in very thin targets. Nucl. Instrum. Methods Phys. Res. B 230, 112 (1984) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
02769 E	C02: H^+ + C; He^+ + C	275-625 keV	Leonard, W. R.; Phillips, D.; Mitchell, I. V.; Andrews, H. R.; Ward, D. Search for pre-equilibrium stopping for ^6Be ions in thin carbon foils. Nucl. Instrum. Methods Phys. Res. B 233, 116 (1984) Canada
02770 E-T	C02: H^+ + C; H^+ + Al; H^+ + V; H^+ + Cr; H^+ + Fe; H^+ + Ni; H^+ + Cu; H^+ + Zn; H^+ + Ag; H^+ + Pt; H^+ + Au; H^+ + Bi; He^+ + C; He^+ + Al; He^+ + V; He^+ + Cr; He^+ + Fe; He^+ + Ni; He^+ + Cu; He^+ + Zn; He^+ + Ag; He^+ + Pt; He^+ + Au; He^+ + Bi; Li^+ + C; Li^+ + Al; Li^+ + V; Li^+ + Cr; Li^+ + Fe; Li^+ + Ni; Li^+ + Cu; Li^+ + Zn; Li^+ + Ag; Li^+ + Pt; Li^+ + Au; Li^+ + Bi; Be^+ + C; Be^+ + Al; Be^+ + V; Be^+ + Cr; Be^+ + Fe; Be^+ + Ni; Be^+ + Cu; Be^+ + Zn; Be^+ + Ag; Be^+ + Pt; Be^+ + Au; Be^+ + Bi; B^+ + C; B^+ + Al; B^+ + V; B^+ + Cr; B^+ + Fe; B^+ + Ni; B^+ + Cu; B^+ + Zn; B^+ + Ag; B^+ + Pt; B^+ + Au; B^+ + Bi	50-350 keV	Erist, Y.; Hartman, E. Application of Brandt's effective charge theory to measurements for 50-350 keV ions with Z less than or equal to A_1 less than or equal to 5. Nucl. Instrum. Methods Phys. Res. B 233, 119 (1984) Canada
02771 T	A36: Undef A37: Undef C02: Undef	Undef	Kitagawa, H. Effective stopping power charge of ions in condensed matter. Nucl. Instrum. Methods Phys. Res. B 230, 123 (1984) Japan
02772 T	C36: Xe^+ + H	5-160 keV	Haatala, H. Comparison of experimental range distributions with computer simulations: Xe ions in crystalline tungsten. Nucl. Instrum. Methods Phys. Res. B 233, 135 (1984) Finland
02773 T	C02: Se^+ + Ag	5-200 keV	Giber, J.; Hagy, I.; Laszlo, J. Calculation of inelastic energy loss in solids. Nucl. Instrum. Methods Phys. Res. B 233, 135 (1984) Hungary
02774 E	C02: H^+ + Au	3-8 MeV	Ishiwari, H.; Shiosi, H.; Sakamoto, H. Stopping power of Au for protons from 3 to 8 MeV. Nucl. Instrum. Methods Phys. Res. B 233, 141 (1984) Japan
02775 E	C02: H^+ + Cl_2; H^+ + Br_2; He^+ + Cl_2; He^+ + Br_2	50-1000 keV	Baumgart, H.; Berg, H.; Buttel, Z.; Pfaff, E.; Reiter, G.; Clausnitzer, G. Proton and helium stopping cross sections in Cl_2 and Br_2. Nucl. Instrum. Methods Phys. Res. B 233, 145 (1984) West Germany
02776 E	C02: H^+ + Cu; H^+ + Ag; H^+ + Au; D^+ + Cu; D^+ + Ag; D^+ + Au	50-500 keV/amu	Bauer, P.; Semrad, D.; Golser, R. Investigation of hydrogen stopping in noble metals around the stopping power maximum. Nucl. Instrum. Methods Phys. Res. B 233, 149 (1984) Austria
02777 E	C02: O^+ + C	Undef	Leonard, W. R.; Phillips, D.; Mitchell, I. V.; Andrews, F. R.; Ward, D. Dependance of specific energy loss on target thickness for low velocity ions: ^{16}O - C. Nucl. Instrum. Methods Phys. Res. B 233, 151 (1984) Canada
02778 E	C08: H_2^+ + O_2; H_2^+ + CO; H_2^+ + O_2; H_2^+ + CO; D_2^+ + O_2; D_2^+ + CO; D_2^+ + O_2; D_2^+ + CO	2-18 keV	Schou, J.; Sorensen, H.; Andersen, H. H.; Nielsen, H.; Hunn, J. Range measurements of keV hydrogen ions in solid oxygen and carbon monoxide. Nucl. Instrum. Methods Phys. Res. B 233, 159 (1984) Denmark
02779 T	C02: H^+ + Cu	7 MeV	Sakamoto, H.; Shiosi, H.; Ishiwari, H. Computer simulation of the geometrical effect on the stopping power of a very thin Cu foil for 7 MeV protons. Nucl. Instrum. Methods Phys. Res. B 233, 164 (1984) Japan
02780 E	C02: H^+ + C; H^+ + Al; He^+ + C; He^+ + Al C35: H^+ + C; H^+ + Al; He^+ + C; He^+ + Al	50-200 keV	Eckardt, J. C.; Lantschner, G. H.; Jakas, H. H.; Ponce, V. H. The correlation between inelastic energy loss and scattering angle in transmission experiments. Nucl. Instrum. Methods Phys. Res. B 233, 168 (1984) Argentina
02781 T	C35: $PERT^+$ + Xe	15-60 keV	Luukkainen, A.; Haatala, H.; Sister, H. Comparison of experimental and theoretical lateral multiple scattering of 15-60 keV ions (Z = 6-54) on Xe. Nucl. Instrum. Methods Phys. Res. B 233, 173 (1984) Finland

Ref. No.	Reactants	Energy Range	Reference
02782 T	C32: H^+ + C; H^+ + Cu; H^+ + Al; He^+ + C; He^+ + Cu; He^+ + Al; Na^+ + C; Na^+ + Cu; Na^+ + Al C35: H^+ + C; H^+ + Cu; H^+ + Al; He^+ + C; He^+ + Cu; He^+ + Al; Na^+ + C; Na^+ + Cu; Na^+ + Al	Undef	Krist, T.; Mertens, P.; Biersack, J. P. Nuclear stopping power for particles transmitted through thin foils in the beam direction. Nucl. Instrum. Methods Phys. Res. B 230, 177 (1984) Canada
02783 E-T	C33: Pb^+ Si; Kr^+ + Si	40-80 keV	Kostic, S.; Jimenez-Rodriguez, J. J.; Karpuzov, D. S.; Armour, D. G.; Carter, G. Range distributions in multiply implanted targets. Nucl. Instrum. Methods Phys. Res. B 230, 162 (1984) United Kingdom
02784 E	C35: He^+ + Ta_2O_5	1000 keV	Schmaus, D.; L'Hoir, A. Multiple scattering angular distributions of MeV ^4He ions transmitted through Ta_2O_5 targets. Nucl. Instrum. Methods Phys. Res. B 230, 187 (1984) France
02785 T	C02: H^+ + Zr; H^+ + Pd; H^+ + Cd; H^+ + In; H^+ + Pb	6.5 MeV	Ishiwari, R.; Shiomi, N.; Sakamoto, N. Stopping powers of Zr, Pd, Cd, In and Pb for 6.5 MeV protons and mean excitation energies. Nucl. Instrum. Methods Phys. Res. B 230, 195 (1984) Japan
02786 T	C32: B^+ + Au	50-1000 keV	Schulz, F.; Michael, B. Multiply peaked energy-loss spectra of heavy ions transmitted through polycrystalline foils: an interpretation in terms of channeling. Nucl. Instrum. Methods Phys. Res. B 230, 195 (1984) West Germany
02787 T	C03: Undef	Undef	Martan, J. An analytical formula for the range of ions in solids. Nucl. Instrum. Methods Phys. Res. B 230, 202 (1984) Poland
02788 T	A07: He^{2+} + H_2O; H^+ + H_2O	0.2-3.0 MeV	Senger, B.; Rechenmann, R. V. Angular and energy distributions of delta-rays ejected from low-Z molecular targets by incident protons and alpha particles. Nucl. Instrum. Methods Phys. Res. B 230, 204 (1984) France
02789 T	D08: Ar^+ + Cu; Ne^+ + C	Undef	Kupfer, E.; Gabriel, H. The influence of surface roughness on the polarization after electron capture by beam-foil interaction. Nucl. Instrum. Methods Phys. Res. B 230, 208 (1984) West Germany
02790 T	C37: H^+ + Au	Undef	Schroder, H. Polarization by selective loss in beam-foil interaction. Nucl. Instrum. Methods Phys. Res. B 230, 213 (1984) West Germany
02791 E	D38: He^+ + Au; He^+ + Tl; He^+ + Pb	20-110 keV	Veje, E. Excitation of helium backscattered from gold, thallium, and lead. Nucl. Instrum. Methods Phys. Res. B 230, 218 (1984) Denmark
02792 E	C36: Br^+ + C	85-166 MeV	Shima, K.; Ishihara, T.; Mikumo, T. Charge distribution width of heavy ions after passage through carbon foils. Nucl. Instrum. Methods Phys. Res. B 230, 222 (1984) Japan
02793 E	A03: Calcium-ions + Al_2O_3; Iron-ions + Al_2O_3; Ti^{11+} + Al_2O_3; Ti^{12+} + Al_2O_3; Ti^{13+} + Al_2O_3; Ti^{14+} + Al_2O_3; Ti^{15+} + Al_2O_3; Ti^{16+} + Al_2O_3; Ti^{17+} + Al_2O_3; Ti^{18+} + Al_2O_3; Ti^{19+} + Al_2O_3 A36: Calcium-ions + Ti; Iron-ions + Ti; Titanium-ions + Ti A08: Calcium-ions + Ti; Iron-ions + Ti; Titanium- ions + Ti	1-60 MeV	Dybdal, K.; Nielsen, P. T.; Rud, N.; Torp, B. L-shell populations of ions penetrating solids. Nucl. Instrum. Methods Phys. Res. B 230, 227 (1984) Denmark
02794 T	A38: H + C; He^+ + Al; He^+ + Ni; He^+ + C; C^{5+} + C; Ne^{9+} + C; Ar^{17+} + C	10-1-100 MeV/amu	Gillespie, G. H. Systematics of electron-stripping cross sections for fast hydrogenic ions penetrating solids. Nucl. Instrum. Methods Phys. Res. B 230, 231 (1984) United States
02795 E	A36: H^+ + Ne; H^+ + C; H + Ne A38: H^+ + Ne; H^+ + C; H + Ne D34: H + C; H + Ne; H^+ + Ne	100-270 keV	Focke, P.; Nemirovsky, I. B.; Gonzalez Lepera, E.; Meckbach, W.; Sellin, I. A.; Groeneveld, K. O. Beam-foil convoy electron distributions as a function of energy and angle of emission. Nucl. Instrum. Methods Phys. Res. B 230, 235 (1984) Argentina

Ref. No.	Reactants	Energy Range	Reference
02796 E	D34: H + C; H^+ + C; H_2^+ + C	1.0-2.8 MeV	Yamazaki, Y.; Oda, N.; Tanaka, A. Convoy electron production from swift H^0, H^+ and H_2^+ beams. Nucl. Instrum. Methods Phys. Res. B 233, 241 (1984) Japan
02797 E	C02: C^+ + C; O^+ + C; CO^+ + C D34: C^+ + C; O^+ + C; CO^+ + C	80 keV/amu	Latz, R.; Schader, J.; Frischkorn, H. J.; Hofmann, D.; Koschar, P.; Groeneveld, K. O. The relation between convoy electron velocity and ion velocity of ions penetrating solids. Nucl. Instrum. Methods Phys. Res. B 233, 245 (1984) West Germany
02798 E	B12: H^+ + C; H_2^+ + C; H_3^+ + C	0.3-3.5 MeV/amu	Kobayashi, N.; Oda, N. Continuum optical radiation emitted from a thin carbon foil exposed to 0.3-3.5 MeV/amu H^+, H_2^+, and H_3^+ ion bombardments. Nucl. Instrum. Methods Phys. Res. B 233, 248 (1984) Japan
02799 E	D08: N^{3+} + Cu	4-12 MeV	Zimny, R.; Winter, H.; Becker, U.; Schirmacher, A.; Andra, H. J. Influence of the Stark-effect on the orientation of Rydberg-states in highly ionized nitrogen after ion beam surface interaction at grazing incidence. Nucl. Instrum. Methods Phys. Res. B 233, 252 (1984) West Germany
02800 E	A33: C^{5+} + C; C^{6+} + C; Cl^{14+} + C A36: C^{6+} + C; Cl^{17+} + C A38: C^{5+} + C; Cl^{16+} + C A11: Cl^{16+} + C; C^{5+} + C C36: C^{5+} + C; Cl^{16+} + C	36-445 MeV	Sofield, C. J.; Bridwell, L. B.; Woods, C. J.; Monk, C. E.; Cowern, N.E.B.; Miller, P. D.; Gregory, D.; Jones, C.; Alton, G.; Pepmiller, P.; Hall, M. J. Excited state populations and charge-exchange of fast ions in solids. Nucl. Instrum. Methods Phys. Res. B 233, 262 (1984) United Kingdom
02801 E	D34: H^+ + C; He^{2+} + C; H_2^+ + C; He^+ + C; H_3^+ + C	1.7 MeV/amu	Latz, R.; Schader, J.; Frischkorn, H. J.; Koschar, P.; Hofmann, D.; Groeneveld, K. O.; Meckbach, W. Molecule transmission and convoy electron production by fast projectiles in thin solids. Nucl. Instrum. Methods Phys. Res. B 233, 265 (1984) West Germany
02802 E	C37: H^+ + C; H_2^+ + C; H_3^+ + C	0.2-3.8 MeV/amu	Kobayashi, N.; Oda, N. Molecular enhancement for n-state populations of excited hydrogen atoms produced by H_2^+ and H_3^+ ions passing through thin carbon foils. Nucl. Instrum. Methods Phys. Res. B 233, 269 (1984) Japan
02803 E	C06: H + C; He^+ + C; H_2^+ + C; H_3^+ + C C37: H + C; He^+ + C; H_2^+ + C; H_3^+ + C	1.0-2.4 MeV	Clouvas, A.; Gaillard, M. J.; de Pinho, A. G.; Poizat, J. C.; Remillieux, J.; Desesquelles, J. Simultaneous study of non-equilibrated charge and excitation states of MeV/amu light atomic and molecular ions emerging from thin solid targets. Nucl. Instrum. Methods Phys. Res. B 233, 273 (1984) France
02804 T	D07: H^+ + Al	30-100 keV	Ohtsuki, Y. H. Inelastic scattering of ions at the surface. Nucl. Instrum. Methods Phys. Res. B 233, 283 (1984) West Germany
02805 E	D38: He^+ + Cu; Ar^+ + Cu; Li^+ + Cu; N^+ + Cu; Rb^+ + Cu	50-350 keV	Winter, H. Recent developments in the study of fast ion-surface interactions at grazing incidence. Nucl. Instrum. Methods Phys. Res. B 233, 286 (1984) West Germany
02806 ;	A32: Undef A18: Undef	Undef	Jackson, D. P. Mass ratio series for the laboratory Rutherford cross-section. Nucl. Instrum. Methods Phys. Res. B 233, 308 (1984) Canada
02807 E	A07: H^+ + Al; H^+ + Cu	22 MeV	Bell, F.; Bockl, H. Solid state Compton profiles by inelastic-electron scattering. Nucl. Instrum. Methods Phys. Res. B 233, 311 (1984) West Germany
02808 T	D37: He^+ + Pt; He^+ + Au; He^+ + Mo; He^+ + Si	0.5-2.0 MeV	Jackson, D. P.; Barrett, J. H. Approximation for the surface backscattering yield from an atomic row with correlated thermal vibrations. Nucl. Instrum. Methods Phys. Res. B 233, 318 (1984) Canada
02809 T	D37: He^+ + TiC	1 keV	Takeuchi, W.; Yamamura, Y. Influence of thermal vibrations on ion surface scattering near 180 degrees scattering angle in the two-atom scattering model. Nucl. Instrum. Methods Phys. Res. B 233, 336 (1984) Japan

Ref. No.	Reactants	Energy Range	Reference
02810 E	D37: N^+ + Au; N^+ + Ta; N^+ + Ag D38: N^+ + Au; N^+ + Ta; N^+ + Ag	3 MeV	Mingay, D. W.; Renner, O. The enhanced yield of nitrogen ions backscattered at 180 degrees. Nucl. Instrum. Methods Phys. Res. B 230, 343 (1984) South Africa
02811 E	A33: Ar^{6+} + Ar	70 MeV	Nolte, G.; Schmidt, W.; Janke, R.; Moller, E.; Schneider, D.; Schmidt-Bocking, H. Ar I x-ray emission probabilities by the impact of 70 MeV Ar ions. Nucl. Instrum. Methods Phys. Res. B 230, 346 (1984) West Germany
02812 E	D08: Li^+ + Cu; Na^+ + Cu; K^+ + Cu	5-9 keV	Boers, A. L. Charge state of low energy reflected alkalis. Nucl. Instrum. Methods Phys. Res. B 230, 353 (1984) The Netherlands
02813 E	D37: N_2^+ + Cu; O_2^+ + Au; N_2^+ + Si D38: N_2^+ + Cu; O_2^+ + Au; N_2^+ + Si	0.25-30 keV	Bitensky, I. S.; Parilis, E. S. Scattering of swift molecules by solid surfaces without dissociation. Nucl. Instrum. Methods Phys. Res. B 230, 364 (1984) Soviet Union
02814 E	D37: Li^+ O_2^+ + Mo; K^+ O_2^+ + Mo; Na^+ O_2^+ + Mo; Li^+ + Mo	500-1000 eV	Overbury, S. H.; Dekoven, B. M.; Stair, P. C. Adsorbate induced neutralization effects in low energy alkali and inert gas ion scattering. Nucl. Instrum. Methods Phys. Res. B 230, 388 (1984) United States
02815 E	D09: Ar^+ + W; Ar^+ + O + W; Ar^{2+} + W; Ar^{2+} + O + W; Xe^{2+} + W; Xe^{2+} + O + W	15 eV	Hofer, W.; Varga, P. Adsorbate dependent neutralization of ions near a surface. Nucl. Instrum. Methods Phys. Res. B 230, 391 (1984) Austria
02816 E	D11: N_2 + Ni	300 K	Moller, J.; Heiland, W.; Hoertl, W. Molecular adsorption of N_2 on Ni(110) studied with ion scattering spectroscopy. Nucl. Instrum. Methods Phys. Res. B 230, 396 (1984) West Germany
02817 E	D37: He^+ + Ag; He^+ + Au; He^+ + Ta; He^+ + W	300-1000 eV	Shoji, F.; Hanawa, T. Inelastic effect in low-energy He^+ ion scattering from solid surfaces. Nucl. Instrum. Methods Phys. Res. B 230, 401 (1984) Japan
02818 E	D07: Ne^+ + Cu; H_2O^+ + Cu D39: Ne^+ + Cu; H_2O^+ + Cu	6 keV	Van Zoest, J. M.; Van der Weij, C. E.; Fluit, J. M. Neutralization of keV-ions scattered at Cu(100). Nucl. Instrum. Methods Phys. Res. B 230, 406 (1984) The Netherlands
02819 E	D37: He^+ + Ni	900 eV	Eschenbacher, H.; Richard, A. Comparison of low energy ion scattering (LEIS) with low energy neutral scattering (LENS) at a clean and sulphur covered polycrystalline Ni-surface. Nucl. Instrum. Methods Phys. Res. B 230, 411 (1984) West Germany
02820 T	D09: Undef	0.5-4.0 keV	Kawai, R.; Ohtsuki, Y. H. Theory of charge fractions for low energy protons. Nucl. Instrum. Methods Phys. Res. B 230, 416 (1984) Japan
02821 E	D39: He^+ + Si; Ne^+ + Si	0.2-1.6 keV	MacDonald, R. J.; O'Connor, D. J.; Higginbottom, P. Neutralisation contributions in low energy ion scattering. Nucl. Instrum. Methods Phys. Res. B 230, 418 (1984) Australia
02822 T	D01: Undef	Undef	Manson, J. R.; Ritchie, R. H. The attractive interaction between an atom and a surface. Nucl. Instrum. Methods Phys. Res. B 230, 422 (1984) United States
02823 E	D37: H^+ + Si	0.5-1.0 keV	Ghalim, N.; Bertrand, P. The scattering of low energy protons from silicon. Nucl. Instrum. Methods Phys. Res. B 230, 427 (1984) Belgium
02824 T	D37: He^+ + Cu	3-10 keV	Coudray, C.; Bernheim, M.; Slodzian, G. Shadowing effects in ion scattering spectrometry: simulation and experiments. Nucl. Instrum. Methods Phys. Res. B 230, 431 (1984) France
02825 T	D07: He^+ + Cu; Na^+ + Cu	1 keV	Engelmann, G.; Taglauer, E. Temperature effects in low-energy ion scattering from copper. Nucl. Instrum. Methods Phys. Res. B 230, 436 (1984) West Germany

Ref. No.	Reactants	Energy Range	Reference
32826 E	D37: $He^+ + Cu_3Au$	5-9.5 keV	Jackson, D. E.; Buck, T. M.; Wheatley, G. H. Atom layer effects in the scattering of keV He from $Cu_3Au(100)$. Nucl. Instrum. Methods Phys. Res. B 233, 443 (1984) Canada
32827 E	D39: $He^+ + GaAs$	3.3-7.2 keV	Richard, E.; Eschenbacher, A. Neutralization of He^+ at GaAs(110). Nucl. Instrum. Methods Phys. Res. B 233, 448 (1984) West Germany
32828 E-T	D37: $K^+ + Mo$	3.5 keV	Overbury, S. H. Low energy alkalli ion scattering from a clean and adsorbate covered Mo(331) surface. Nucl. Instrum. Methods Phys. Res. B 233, 448 (1984) United States
32829 E	D37: $H_2^+ + Si$; $H_2^+ + Si$	3.2-15 keV	Billerding, E.; Steininger, H.; Snowdon, K. J.; Heiland, W. Time-of-flight measurements of light molecular ions scattered at grazing incidence from a Si(111) surface. Nucl. Instrum. Methods Phys. Res. B 233, 453 (1984) West Germany
32830 E	D13: $e + NaCl$; $e + NaF$; $e + LiF$; $h\nu + LiF$	40-1000 eV	Tolk, N. H.; Rockstaum, M.; Gershenfeld, H.; Kraus, J. S.; Morris, R. J.; Hurnick, D. E.; Tully, J. C.; Daniels, B. H.; Margaritondo, G.; Stoffel, N. G. Desorption induced by electronic transitions. Nucl. Instrum. Methods Phys. Res. B 230, 457 (1984) United States
32831 T	D03: Undef	Undef	Bentschke, R.; Hertel, P.; Heiland, W.; Snowdon, K. Rotational and vibrational excitation of sputtered dimers. Nucl. Instrum. Methods Phys. Res. B 230, 461 (1984) West Germany
32832 E	D33: $H_2^+ + C$; $H_2^+ + Si$; $H_2^+ + Al$	12 keV	Loxton, C. H.; Tsong, I.S.T.; Read, D. A. Excitation of molecules formed by ion bombardment of surfaces. Nucl. Instrum. Methods Phys. Res. B 233, 465 (1984) United States
32833 E	D30: $Ar^+ + Al$	25-80 keV	Benazeth, H.; Hiechler, J.; Benazeth, C. Polar angular distributions of $L_{2,3}Al$ Auger electrons emitted in Ar^+-polycrystalline Al solid target collisions. Nucl. Instrum. Methods Phys. Res. B 233, 470 (1984) France
32834 E	D08: $H^+ + Au$; $H_2^+ + Au$; H_3^+ Au; $He^+ + Au$	75-600 keV	Hasselkamp, D.; Rippler, S.; Scharmann, A. Molecular effects in the energy spectra of ion-induced secondary electrons from gold. Nucl. Instrum. Methods Phys. Res. B 233, 475 (1984) West Germany
32835 E	D33: $H_2^+ + Si + H$	100 keV	Thomas, E. W.; Efstathiou, L. The rotational population of sputtered H_2 - evidence for hindered rotational states. Nucl. Instrum. Methods Phys. Res. B 233, 479 (1984) United States
32836 E	D38: $H^+ + Cu$; $H_2^+ + Cu$	0.25-40 keV	Steininger, H.; Billerding, H.; Snowdon, K.; Tolk, N. H.; Eckstein, W. Light emission from hydrogen-copper interaction at grazing incidence. Nucl. Instrum. Methods Phys. Res. B 233, 484 (1984) West Germany
32837 E	D38: $He^+ + Cu$; $He^+ + Si$ D39: $He^+ + Cu$; $He^+ + Si$	0.5-15 keV	Tolk, N. H.; Billerding, H.; Steininger, H.; Heiland, W.; Snowdon, K. J. Resonant neutralization of He ions into excited states at Cu(111) and Si(111) surfaces. Nucl. Instrum. Methods Phys. Res. B 233, 488 (1984) West Germany
32838 T	C36: $Li^+ + Al$; $Li^+ + Zn$; $Li^+ + Au$	Undef	Haneko, T. Charge transfer in solids. Nucl. Instrum. Methods Phys. Res. B 233, 491 (1984) Japan
32839 E	D33: $Ar^+ + Cu$; $Ar^+ + Ag$; $Ar^+ + Au$	80 keV	Veje, E. Study of atomic excitations in sputtering with the use of Cu, Ag, and Au targets. Nucl. Instrum. Methods Phys. Res. B 233, 497 (1984) Denmark
32840 E	D09: $He^+ + Si$	75-100 keV	Haight, R.; Feldman, L. C.; Buck, T. M.; Gibson, W. M. Neutralization of energetic He ions scattered from clean 7×1 Si (100). Nucl. Instrum. Methods Phys. Res. B 233, 501 (1984) United States
32841 E	C76: $Cl^{18+} + C$; $Cl^{11+} + C$; $Cl^{17+} + C$; $Cl^{10+} + C$; $Cl^{16+} + C$; $Cl^{15+} + C$; $Cl^{17+} + C$	100 MeV	Bay, H. J.; Fender, I. F.; Treacy, P. B. Pre-equilibrium charge states of swift chlorine ions in solids. Nucl. Instrum. Methods Phys. Res. B 233, 505 (1984) Australia

Ref. No.	Reactants	Energy Range	Reference
02842 T	C36: $B^0 + C$; $C^0 + C$; $N^0 + N_2$	Undef	Sapeko, T. Equilibrium charge distributions for B, C, N ions passing through matter. Nucl. Instrum. Methods Phys. Res. B 233, 538 (1984) Japan
02843 E	D06: $Ar^0 + Mg$; $Ar^0 + Al$; $Ar^0 + Si$	10 keV	Saiki, K.; Tanaka, S. Ion-excited Auger electron emission from Mg, Al and Si surfaces. Nucl. Instrum. Methods Phys. Res. B 233, 512 (1984) Japan
02844 E	D04: $Ne^0 + Mg$; $Ne^0 + Al$; $Ne^0 + Si$ $Ar^0 + Mg$; $Ar^0 + Al$; $Ar^0 + Si$	20-200 keV	Thomas, E. S.; Whaley, N. Inner shell vacancies in sputtered atoms. Nucl. Instrum. Methods Phys. Res. B 233, 516 (1984) United States
02845 E	D33: $Ar^0 + Be$; $Ar^0 + B$; $Ar^0 + Mg$	80 keV	Veje, E. Study of atomic excitation in sputtering as a function of the projectile incidence angle. Nucl. Instrum. Methods Phys. Res. B 233, 523 (1984) Denmark
02846 E	D08: $He^0 + Na$	7-20 keV	Schneider, F.; Eckstein, J.; Verbeek, H. Trajectory effects in the negative charge-state fraction of ^3He and ^4He reflected from a sodium target. Nucl. Instrum. Methods Phys. Res. B 233, 525 (1984) West Germany
02847 E	D36: $PERT^0 + Au$; $PERT^{2+} + Au$; $PERT^{3+} + Au$; $PERT^{4+} + Au$	12-33 keV	Thum, F.; Hofer, W. O. X_1-oscillations in ion-induced kinetic electron emission. Nucl. Instrum. Methods Phys. Res. B 230, 531 (1984) West Germany
02848 E	D34: $Ar^0 + B$; $Ar^0 + Ba$; $Ar^0 + Mg$; $Ar^0 + Au$; $Xe^0 + Ag$	80 keV	Veje, E. Study of secondary electron emission from Ba, B, Mg, and Au as a function of the projectile incidence angle. Nucl. Instrum. Methods Phys. Res. B 233, 536 (1984) Denmark
02849 T	D33: Undef D08: Undef D09: Undef	3-5 keV	Snowdon, K. J. Trajectory and primary ion charge dependence of keV scattered and re-emitted H^- charged fractions. Nucl. Instrum. Methods Phys. Res. B 233, 583 (1984) West Germany
02850 P	D03: $Ar^0 + H_2O$; $Ar^0 + BH_3$; $Ar^0 + CC$; $Ne^0 + H_2O$; $Ne^0 + BH_3$; $Ne^0 + CO$; $H_2^0 + H_2O$; $H_2^0 + BH_3$; $H_2^0 + CC$ D17: $Ar^0 + H_2O$; $Ar^0 + BH_3$; $Ar^0 + CO$; $Ne^0 + H_2O$; $Ne^0 + BH_3$; $Ne^0 + CO$; $H_2^0 + H_2O$; $H_2^0 + BH_3$; $H_2^0 + CC$	3-6 keV	Haring, R. A.; Wolfschoten, A. H.; de Vries, A. E. Chemical sputtering by keV ions. Nucl. Instrum. Methods Phys. Res. B 233, 544 (1984) The Netherlands
02851 T	D02: $Ne^0 + Ni$; $D^0 + Ni$; $He^0 + Ni$; $H^0 + Ni$; $Ar^0 + Ni$; $Xe^0 + Ni$; $D^0 + C$	2×10^1-2×10^3 eV	Eckstein, W.; Biersack, J. P. Sputtering investigations with the Monte Carlo program TRIM SP. Nucl. Instrum. Methods Phys. Res. B 233, 553 (1984) West Germany
02852 E	D02: $Cl^0 + SiO_2$; $Cl^0 + S_3N_4$; $Cl^0 + Al_2O_3$; $Cl^0 + LiNbO_3$; $Cl^0 + CaF_2$; $Cl^0 + UF_6$; $Cl^0 + InP$; $Cl^0 + UO_2$; $Cl^0 + Si$; $F^0 + SO_2$; $F^0 + N_2C$; $F^0 + UF_6$	1-35 MeV	Tombrello, T. A. Track damage and erosion of insulators by ion-induced electronic processes. Nucl. Instrum. Methods Phys. Res. B 233, 555 (1984) United States
02853 E	D18: $He^0 + Si$	100-200 keV	Wenzel, W.; Wittmaack, K. Reemission of implanted xenon by 100-200 keV helium. Nucl. Instrum. Methods Phys. Res. B 230, 564 (1984) West Germany
02854 E	D02: $Ar^0 + Si$; $Xe^0 + Si$	5-300 keV	Wittmaack, K. An attempt to understand the sputtering yield enhancement due to implantation of inert gases in amorphous solids. Nucl. Instrum. Methods Phys. Res. B 233, 569 (1984) West Germany
02855 E	D02: $e + SF_6$	750 eV	Fedrys, R.; Haring, R. A.; Haring, A.; de Vries, A. E. Erosion of frozen SF_6 by electron bombardment. Nucl. Instrum. Methods Phys. Res. B 233, 573 (1984) The Netherlands
02856 T	D02: $H^0 + Ni$; $H^0 + Mo$; $H^0 + W$; $H^0 + Au$; $D^0 + Ni$; $D^0 + Mo$; $D^0 + W$; $D^0 + Au$; $He^0 + Ni$; $He^0 + Mo$; $He^0 + W$; $He^0 + Au$	1-8 keV	Yamamura, Y. A simple analysis of the angular dependence of light-ion sputtering. Nucl. Instrum. Methods Phys. Res. B 233, 578 (1984) Japan

Ref. No.	Reactants	Energy Range	Reference
02857 T	D02: Xe^{+} + Au; Xe^{+} + Ag	6-20 keV	Szymonski, M. Elastic-collision spikes in sputtering of metals at normal and oblique incidence. Nucl. Instrum. Methods Phys. Res. B 230, 583 (1984) Denmark
02858 T	D02: H^{+} + PERT; D^{+} + PERT; He^{+} + PERT	3x10¹-3x10⁴ eV	Bohdansky, J. A universal relation for the sputtering yield of monatomic solids at normal ion incidence. Nucl. Instrum. Methods Phys. Res. B 230, 587 (1984) West Germany
02859 T	D02: Cu^{+} + Cu + Ni; Ni^{+} + Cu + Ni	90 keV	Rosen, M.; Bassel, R. H. Binary collision cascade calculation of sputtering from Cu-Ni alloys by 90 keV Cu and Ni ions. Nucl. Instrum. Methods Phys. Res. B 230, 592 (1984) United States
02860 E	D02: Ar^{+} + Ni; Ar^{+} + Ni_3C	5 keV	Morita, K.; Ohno, H.; Hayashibara, M.; Itoh, N. Studies on temperature and flux dependences of sputtering yield of nickel from two-layered films of $Ni-Ni_3C$. Nucl. Instrum. Methods Phys. Res. B 230, 596 (1984) Japan
02861 E	D02: Ar^{+} + CuPt; Ar^{+} + Ni_5Pd; Ar^{+} + NiPt; Bi^{+} + Cu	20-320 keV	Andersen, H. H.; Stenum, B.; Sorensen, T.; Whitlow, H. J. Transients in the composition of material sputtered from alloy targets. Nucl. Instrum. Methods Phys. Res. B 230, 601 (1984) Denmark
02862 E	D02: D^{+} + Zr; H^{+} + Zr; He^{+} + Zr; Ar^{+} + Zr	2.5-8.0 keV	Bay, H. L.; Berres, W. Anisotropy of collision cascades by light-ion irradiation of zirconium. Nucl. Instrum. Methods Phys. Res. B 230, 606 (1984) West Germany
02863 E	D02: Ar^{+} + Ti; Ar^{+} + Al; Ar^{+} + O + Ti; Ar^{+} + N + Ti; Ar^{+} + O + Al	1 keV	Dullni, E. Velocity distributions of the metal atoms sputtered from oxygen and nitrogen covered Ti-and Al-surfaces. Nucl. Instrum. Methods Phys. Res. B 230, 610 (1984) West Germany
02864 E	D03: Ar^{+} + Al; Ar^{+} + O + Al	2 keV	Baragiola, R.; Ferron, J.; Zampieri, G. Effect of oxygen on secondary ion emission from Al. Nucl. Instrum. Methods Phys. Res. B 230, 614 (1984) Argentina
02865 E-T	D02: Ar^{+} + C	5 keV	Vietzke, E.; Flaskamp, K.; Hennes, M.; Philipps, V. The enhanced sputtering yield of graphite at elevated temperatures: the energy of the released carbon atoms. Nucl. Instrum. Methods Phys. Res. B 230, 617 (1984) West Germany
02866 E	D02: Ar^{+} + Cu + Pt	20-80 keV	Andersen, H. H.; Stenum, B.; Sorensen, T.; Whitlow, H. J. Temperature dependence of the angular distribution of material sputtered from a CuPt alloy. Nucl. Instrum. Methods Phys. Res. B 230, 623 (1984) Denmark
02867 T	D02: Ar^{+} + Cu; H^{+} + Ni	10-1000 eV	Yamamura, Y. Threshold energies of light-ion sputtering and heavy-ion sputtering as a function of angle of incidence. Nucl. Instrum. Methods Phys. Res. B 230, 627 (1984) Japan
02868 T	D02: D^{+} + Ni; D^{+} + Mo	1.3-4 keV	Becerra-Acevedo, R.; Bohdansky, J.; Eckstein, W.; Roth, J. Spherical angular distribution of atoms sputtered with energetic deuterium at grazing incidence. Nucl. Instrum. Methods Phys. Res. B 230, 631 (1984) West Germany
02869 T	D02: Undef	Undef	Carter, G.; Nobes, M. J. Theory of development of surface topography under spatiotemporally heterogeneous sputtering conditions. Nucl. Instrum. Methods Phys. Res. B 230, 635 (1984) United Kingdom
02870 E	D02: Ar^{+} + Cu; Cu^{+} + Cu; Kr^{+} + Cu; Ne^{+} + Cu; Xe^{+} + Cu	20-44 keV	Whitton, J. L.; Kiriakidis, G.; Carter, G.; Lewis, G. W.; Nobes, M. J. The development of sputter-induced pits and pyramids on ion bombarded (11 3 1) surfaces of face centered cubic metal single crystals. Nucl. Instrum. Methods Phys. Res. B 230, 640 (1984) Denmark
02871 E	D02: Ar^{+} + Cu + Ag	40 keV	Bibic, N.; Popovic, M.; Spasic, V. Mechanisms of cone formation by ion bombardment. Nucl. Instrum. Methods Phys. Res. B 230, 645 (1984) Yugoslavia

Ref. No.	Reactants	Energy Range	Reference
02E72 E	D02: Ar^+ + Ag	20-40 keV	Lindere, J.; Riedrig, H.; Sternberg, H. Undirected measurements of differential sputtering yields using the collector method by means of electron backscattering. Nucl. Instrum. Methods Phys. Res. B 233, 689 (1984) West Germany
02E73 E-T	D03: He^+ + BiO; Ne^+ + BiO; Ar^+ + BiO D13: He^+ + BiO; Ne^+ + BiO; Ar^+ + BiO	300-300C eV	Schneider, F. J.; Eckstein, W.; Verbeek, H. Energy distributions of oxygen desorbed from a nickel surface through ion bombardment: comparison of computer simulation with experiment. Nucl. Instrum. Methods Phys. Res. B 233, 655 (1984) West Germany
02E74 E	D02: Sb^+ + Ag; Ar^+ + Cu	5-50 keV	Gelb, R. P.; Harrison, D. E., Jr. A computer simulation of high energy density cascades. Nucl. Instrum. Methods Phys. Res. B 233, 663 (1984) United States
02E75 E	D02: Ar^+ + Yb	1-3 keV	Ongaard, J.; Ellegaard, O. Sputtering of thin metal overlayers studied by electron spectroscopy and a quartz crystal microbalance method. Nucl. Instrum. Methods Phys. Res. B 233, 666 (1984) Denmark
02E76 E	D02: Ar^+ + Ni; Ar^+ + Cr; Ar^+ + Ag	8-12 keV	Kavinsek, D.; Panjan, P.; Zabkar, A.; Pine, J. Determination of sputtering yields by a new procedure for depth profiling of multilayered structures. Nucl. Instrum. Methods Phys. Res. B 233, 673 (1984) Yugoslavia
02E77 E	D03: Ar^+ + Si; Xe^+ + Si	2-12 keV	Bittensack, E. Angular dependence of secondary ion emission from silicon bombarded with inert gas ions. Nucl. Instrum. Methods Phys. Res. B 233, 674 (1984) West Germany
02E78 E-T	D02: Au^+ + Cu; Ta^+ + Cu	525 keV	Malaberg, P. R.; Alias, R. G.; Lambert, J. M.; Treada, P. A.; Reynolds, G. H. Effects of non-normal incidence on the implantation of copper with gold and tantalum. Nucl. Instrum. Methods Phys. Res. B 233, 679 (1984) United States
02E79 E	D02: Ar^+ + Cu; Ce^+ + Cu	100-120 keV	Sarholt-Kristensen, L.; Borisenko, V.; Johansen, A.; Johnsen, P. Sputtering on copper single crystals. Nucl. Instrum. Methods Phys. Res. B 233, 684 (1984) Denmark
02E80 T	D02: Undef	Undef	Smith, A. E.; Johnson, C.H.J. On the computer solution of the nonlinear Boltzmann equation and its use in sputtering theory. Nucl. Instrum. Methods Phys. Res. B 230, 689 (1984) Australia
02E81 T	D02: Ar^+ + Si	15 keV	Roush, M. L.; Devarya, P.; Chambers, G. P.; Andreadis, T. D.; Ee, J.; Goktepe, O. F.; Pine, J. Distribution of origins of sputtered particles and the shape of the target region affected by the cascade recoils. Nucl. Instrum. Methods Phys. Res. B 233, 693 (1984) United States
02E82 T	D02: Undef D03: Undef D09: Undef	Undef	Falcone, G.; Oliva, A. An interpretation of SIMS measurements as a tool for investigating the ionization process. Nucl. Instrum. Methods Phys. Res. B 233, 697 (1984) Italy
02E83 T	D01: H^+ + H; H_2^+ + H	10-15 keV	Bou, H. The spatial configuration of collisin cascades induced by 10 and 15 keV per atom molecular ions in polycrystals. Nucl. Instrum. Methods Phys. Res. B 233, 715 (1984) Belgium
02E84 E	C04: N_2^+ + SS	300-330 keV	Ferguson, M. H.; Evan, G. T.; Plettner, E. H.; Swanson, M. L.; Whitton, J. L. Planar contributions to axial flux peaks in nitrogen implanted single crystal stainless steel. Nucl. Instrum. Methods Phys. Res. B 233, 741 (1984) West Germany
02E85 E	C04: $^4He^+$ + Au; $^4He^+$ + Bi	35 keV	Geissel, H.; Leonard, W. H.; Alexander, T. K.; Ball, G. C.; Forster, J. S.; Lone, M. A.; Milosi, L.; Phillips, D.; Plattner, H. H. Influence of 1.3 MeV ^4He post-bombardment on the depth profiles of 35 keV ^3He ions implanted into Bi and Au. Nucl. Instrum. Methods Phys. Res. B 230, 770 (1984) Canada

Ref. No.	Reactants	Energy Range	Reference
02886 E	C04: N^+ + Cu C35: N^+ + Cu	0.25-2.5 keV	Malherbe, J. B. Implantation parameters of low energy nitrogen in copper. Nucl. Instrum. Methods Phys. Res. B 230, 774 (1984) Australia
02887 E-T	D17: Review	Undef	Wang, Z. L. Atomic mixing induced by ion-beams. Nucl. Instrum. Methods Phys. Res. B 230, 784 (1984) Republic of China
02888 E	D17: Ar^+ + Ag + Si	45 keV	Jimenez-Rodriguez, J. J.; Tognetti, N. P.; Marsh, T.; Collins, R. Atomic mixing of silver into a silicon substrate using a 45 keV beam of Ar^+ ions. Nucl. Instrum. Methods Phys. Res. B 230, 792 (1984) United Kingdom
02889 E	C04: N_2^+ + Si	3 keV	Snowdon, K.; Onsgaard, J.; Tougaard, S. Observation of a surface peak in low energy implant depth profiles in silicon. Nucl. Instrum. Methods Phys. Res. B 230, 797 (1984) Denmark
02890 E	D17: Ar^+ + Ta_2O_5	1 keV	Varga, P.; Taglauer, E. Depth profiling of the altered layer in Ta_2O_5 produced by sputtering with Ne ions. Nucl. Instrum. Methods Phys. Res. B 230, 830 (1984) West Germany
02891 T	D17: Undef	Undef	Collins, R. On the "collective current" concept in the theory of atomic mixing. Nucl. Instrum. Methods Phys. Res. B 230, 839 (1984) United Kingdom
02892 T	A07: H^+ + PERT	Undef	Paul, H. An analytical cross-section formula for K x-ray production by protons. Nucl. Instrum. Methods Phys. Res. B 231, 5 (1984) Austria
02893 E	D12: H^+ + Al	1.5-4.0 MeV	Folkmann, F.; Cramon, K. B.; Hertel, N. Angular distribution of particle-induced x-ray emission. Nucl. Instrum. Methods Phys. Res. B 231, 11 (1984) Denmark
02894 T	A07: H^+ + Al; H^+ + Ti; H^+ + Cu; D^+ + Al; D^+ + Ti; D^+ + Cu	0.06-50 MeV/amu	Montenegro, E. C.; Baptista, G. B. A new approach to obtain an analytical expression for K shell ionization cross section in PWBA. Nucl. Instrum. Methods Phys. Res. B 231, 16 (1984) Brazil
02895 E	A03: H^+ + I; H^+ + Cs; H^+ + Ba; H^+ + La; H^+ + Ce; H^+ + Br A07: H^+ + I; H^+ + Cs; H^+ + Ba; H^+ + La; H^+ + Ce; H^+ + Br	1.5-3.0 MeV	Avaldi, L.; Mitchell, I. V.; Eschbach, H. L. Precise x-ray production cross-section measurements of medium Z elements by protons. Nucl. Instrum. Methods Phys. Res. B 231, 21 (1984) Belgium
02896 E	A07: H^+ + Mo; H^+ + Pd; H^+ + Sn; H^+ + Ba; H^+ + Ce; H^+ + Nd; H^+ + Sm	0.5-6.0 MeV/amu	Divoux, S.; Smith, O.; Gonsior, B. K-shell ionisation of heavy target elements (42 less than or equal to Z(sub T) less than or equal to 62) bombarded with protons in the energy range 0.5 MeV-6 MeV. Nucl. Instrum. Methods Phys. Res. B 231, 27 (1984) West Germany
02897 E	A07: H^+ + + Mo; H^+ + Au	1-3 MeV	Pfuetzner, M.; Szerypo, J.; Zelazny, Z.; Zylicz, J.; Goclowski, M.; Jaskola, M.; Zemlo, L.; Horashoj, P. The cross sections for K-shell ionisation of atoms with Z less than or equal to 64 induced by low energy protons. Nucl. Instrum. Methods Phys. Res. B 231, 33 (1984) Poland
02898 E	A07: H^+ + Lu; H^+ + W; H^+ + Au; H^+ + Tl; H^+ + Pb; H^+ + Th; H^+ + U	0.5-0.9 MeV	Budnar, M.; Cindro, V.; Kregar, M.; Ravnikar, M.; Ramsak, V.; Smit, Z. Measurements of proton induced L shell x-ray cross sections on thin Lu, W, Au, Tl, Pb, Th and U targets. Nucl. Instrum. Methods Phys. Res. B 231, 39 (1984) Yugoslavia
02899 T	A07: C^{++} + Ar; F^{++} + Ar; Si^{+++} + Ar; H^+ + Ar; Ne^{++} + Ar	0.25-1.5 MeV/amu	Becker, R. L.; Ford, A. L.; Reading, J. F. Rate of saturation of target L shell vacancy probability, P(sub L), with projectile charge as given by coupled-channels calculations. Nucl. Instrum. Methods Phys. Res. B 231, 43 (1984) United States
02900 E	A03: H^+ + Dy; H^+ + W; H^+ + Au; H^+ + Pb; H^+ + Th; H^+ + U; He^+ + Dy; He^+ + W; He^+ + Au; He^+ + Pt; He^+ + Th; He^+ + U A07: H^+ + Dy; H^+ + W; H^+ + Au; H^+ + Pb; H^+ + Th; H^+ + U; He^+ + Dy; He^+ + W; He^+ + Au; He^+ + Pt; He^+ + Th; He^+ + U	1-3 MeV	Cohen, D. D. L subshell x-ray production by 1 to 3 MeV protons with He^+ ions. Nucl. Instrum. Methods Phys. Res. B 231, 47 (1984) Australia

Ref. No.	Reactants	Energy Range	Reference
02901 E	D12: H^{+} + S	2.3 MeV	Katsanos, A. A.; Kokkoris, P. K.; Kallithrakas-Kontos, N. The x-ray continuum from proton bombardment of thick targets in He. Nucl. Instrum. Methods Phys. Res. B 231, 52 (1984) Greece
02902 E	D12: H^{+} + C; H^{+} + Al	1-6 MeV	Ishii, K.; Morita, S. Continuum x rays produced by a few MeV proton bombardment. Nucl. Instrum. Methods Phys. Res. B 231, 57 (1984) Japan
02903 E-T	A03: Review A07: Review	Undef	Raman, S.; Vane, C. R. Implications of heavy-ion-induced satellite x-ray emission: I. Introduction. Nucl. Instrum. Methods Phys. Res. B 231, 71 (1984) United States
02904 E	A03: Ar^{+} + V; Ar^{+} + Cu; Ar^{+} + Nb; Ar^{+} + Ta; Ar^{+} + Pt A07: Ar^{+} + V; Ar^{+} + Cu; Ar^{+} + Nb; Ar^{+} + Ta; Ar^{+} + Pt	36-103 MeV	O'Kelley, G. D.; Auble, R. L.; Hulett, L. D., Jr.; Kim, H. J.; Milner, W. T.; Raman, S.; Shahal, O.; Vane, C. R.; Young, J. P.; Lapicki, G. Implications of heavy-ion-induced satellite x-ray emission: II. Production of K and L x rays by 0.9-2.6 MeV/u argon ions in thick targets of vanadium, copper, niobium, tantalum and platinum. Nucl. Instrum. Methods Phys. Res. B 231, 78 (1984) United States
02905 T	C02: Cl^{+} + C; Cl^{+} + Al; C^{+} + C; C^{+} + Ni; O^{+} + C	0.03-30 MeV	Roy, S. C.; Apfel, R. E. Semi-empirical formula for the stopping power of ions. Nucl. Instrum. Methods Phys. Res. B 232, 23 (1984) India
02906 E	A03: Xe^{31+} + A; Xe^{42+} + Xe; Xe^{43+} + Xe; Xe^{44+} + Xe; Xe^{48+} + Xe	2.2-3.6 MeV/amu	Mokler, P. H.; Hoffmann, D.H.H.; Schoenfeldt, W. A.; Mann, R.; Meyerhof, W. E.; Stachura, Z. Atomic collision studies at moderate projectile velocities using highly charged, decelerated heavy ions from the GSI-UNILAC. Nucl. Instrum. Methods Phys. Res. B 232, 34 (1984) West Germany
02907 E	D02: Kr^{+} + Xe; Ar^{+} + Xe; Ar^{+} + Kr; Xe^{+} + Kr	2-8 keV	Haring, R. A.; Pedrys, R.; Haring, A.; de Vries, A. E. Sputtering of condensed noble gases by keV heavy ions. Nucl. Instrum. Methods Phys. Res. B 232, 40 (1984) The Netherlands
02908 E	C02: Cl^{15+} + C; Cl^{16+} + C; Cl^{17+} + C C06: Cl^{15+} + C; Cl^{16+} + C; Cl^{17+} + C	130 MeV	Pender, L. F.; Hay, H. J. The measurement of pre-equilibrium heavy ion energy loss. Nucl. Instrum. Methods Phys. Res. B 232, 72 (1984) Australia
02909 E	D07: Review K04: Charge state	1-10 keV	Boers, A. L. Charge state of low energy reflected particles. Nucl. Instrum. Methods Phys. Res. B 232, 98 (1984) The Netherlands
02910 E-T	A07: H^{+} + PERT	Undef	Paul, H. K-shell ionization due to light ions: the status of cross-sections. Nucl. Instrum. Methods Phys. Res. B 232, 211 (1984) Austria
02911 T	A07: H^{+} + Ti; H^{+} + Au; H^{+} + Ag; O^{+} + PERT; Cl^{+} + Pt; He^{2+} + Dy; F^{+} + Ne	0.07-136 MeV	Jakob, A.; Trautmann, D.; Rosel, F.; Baur, G. Wave function effects in inner shell ionization. Nucl. Instrum. Methods Phys. Res. B 232, 218 (1984) Switzerland
02912 T	C02: $PERT^{+}$ + PERT	Undef	Basbas, G. Inner-shell ionization and the Z_1^3 and Barkas effects in stopping power. Nucl. Instrum. Methods Phys. Res. B 232, 227 (1984) Denmark
02913 T	A07: H^{+} + Ti; H^{+} + Cu; He^{+} + Ti; He^{+} + Cu; H^{+} + Ni; D^{+} + Ni; He^{+} + Ni	50-350 keV	Land, D. J.; Simons, D. G. Nonperturbative effects in inner-shell ionization. Nucl. Instrum. Methods Phys. Res. B 232, 235 (1984) United States
02914 T	A07: Undef	Undef	Kocbach, L. On the binding effect on inner shell ionization in asymmetric ion-atomic collisions. Nucl. Instrum. Methods Phys. Res. B 232, 248 (1984) Denmark
02915 E	A03: H^{+} + F; H^{+} + Na; H^{+} + Mg; H^{+} + Al; H^{+} + Si; H^{+} + P; H^{+} + Cl; H^{+} + Ca; H^{+} + Ti; He^{+} + F; He^{+} + Na; He^{+} + Mg; He^{+} + Al; He^{+} + Si; He^{+} + P; He^{+} + Cl; He^{+} + Ca; He^{+} + Ti; Li^{+} + F; Li^{+} + Na; Li^{+} + Mg; Li^{+} + Al; Li^{+} + Si; Li^{+} + P; Li^{+} + Cl; Li^{+} + Ca; Li^{+} + Ti	0.2-0.26 MeV/amu	Lennard, W. N.; Forster, J. S.; Geissel, H.; Ferfoot, K. B.; Phillips, D. K-shell x-ray cross-section ratios for ^{1}H, ^{4}He and ^{7}Li projectiles on targets from fluorine to titanium. Nucl. Instrum. Methods Phys. Res. B 232, 242 (1984) Canada

Ref. No.	Reactants	Energy Range	Reference
02916 T	A37: H^+ + Cu; H^+ + Al	3.32-3.75 MeV/amu	Reading, J. F.; Ford, A. L.; Smith, J. S.; Alexander, J.; Becker, B. L. Progress in numerical calculations of ion-atom collisions. Nucl. Instrum. Methods Phys. Res. B 232, 266 (1984) United States
02917 T	A37: C^{6+} + Ne	1-10 MeV/amu	Becker, B. L.; Ford, A. L.; Reading, J. F. The role of Pauli correlations, channel couplings, and shake-off in ion-induced KL(sup Mu) and K^2L(sup Mu) multiple-vacancy production. Nucl. Instrum. Methods Phys. Res. B 232, 271 (1984) United States
02918 T	A05: Review A07: Review	Undef	Benka, O. The influence of multiple ionization upon fluorescence yield. Nucl. Instrum. Methods Phys. Res. B 232, 279 (1984) Austria
02919 E	A07: Si^+ + Au; S^+ + Au A18: Si^+ + Au; S^+ + Au	2.25-2.5 MeV/amu	Perinde, A.; Ciortea, C.; Enulescu, A.; Fluerasu, D.; Fitiu, I.; Zoran, V.; Trautmann, D. Au L-shell ionization by Si and S ions: integral and differential cross sections and alignment. Nucl. Instrum. Methods Phys. Res. B 232, 283 (1984) Romania
02920 T	A37: H^+ + Au	3.2-3.6 MeV	Jitschin, W. Projectile dependence of Au L-substrate ionization cross sections. Nucl. Instrum. Methods Phys. Res. B 232, 292 (1984) West Germany
02921 T	A07: H^+ + Ag; F^+ + Au; Ne^+ + Au; Li^+ + Au; Ne^+ + Au; C^+ + Au; N^+ + Au; O^+ + Au; H^+ + Ag; F^+ + Xe; H^+ + Dy; H^+ + Au; H^+ + U; C^+ + Ba; C^+ + Dy; C^+ + Au; C^+ + U; N^+ + Ba; N^+ + Dy; N^+ + Au; N^+ + U; Ne^+ + Ba; Ne^+ + Dy; Ne^+ + Au; Ne^+ + U; S^+ + Ba; S^+ + Dy; S^+ + Au; S^+ + U	0.15-2.0 MeV/amu	Sarkadi, L.; Mukoyama, T. Higher order processes in L-shell ionization. Nucl. Instrum. Methods Phys. Res. B 232, 296 (1984) Hungary
02922 E-T	A37: H^+ + Lu; H^+ + W; H^+ + Au; H^+ + Tl; H^+ + Pb; H^+ + Th; H^+ + Au	0.5-0.9 MeV	Budnar, M. L-subshell ionization cross sections of Lu, W, Au, Tl, Pb, Th, and U by protons of 0.5-0.9 MeV energy. Nucl. Instrum. Methods Phys. Res. B 232, 303 (1984) Yugoslavia
02923 E	A37: D^+ + Sm; D^+ + Er; D^+ + Au; He^+ + Sm; He^+ + Er; He^+ + Au; C^+ + Sm; C^+ + Er; C^+ + Au; N^+ + Sm; N^+ + Er; N^+ + Au	3.2 MeV/amu	Papp, T.; Palinkas, J.; Sarkadi, L.; Schlenk, B.; Torok, I.; Kiss, K. Investigation of the projectile atomic number dependence of the L-subshell ionization. Nucl. Instrum. Methods Phys. Res. B 232, 311 (1984) Hungary
02924 E	C35: H^+ + N_2; H^+ + D_2; H^+ + He; H^+ + N_2; H^+ + Ar	9.9-13.9 MeV	Kuhn, S.; Eversheim, P. D.; Hinterberger, F.; Von Rossen, P.; Trelle, H. P. Multiple scattering of protons in thick gas targets. Nucl. Instrum. Methods Phys. Res. B 232, 332 (1984) West Germany
02925 E	C02: H^+ + Al; F^+ + Si; H^+ + Sc; H^+ + V; H^+ + Cu; F^+ + Zn; H^+ + Ga; H^+ + Ge; H^+ + Y; H^+ + Zr; H^+ + Nb; H^+ + Mo; H^+ + Ag; F^+ + Cd; H^+ + In; H^+ + Sn; H^+ + La; F^+ + Sm; H^+ + Gd; H^+ + Yb; H^+ + Hf; H^+ + Ta; H^+ + W; H^+ + Pt; H^+ + Au; F^+ + Pb	3.1-6.3 MeV	Sirotirin, F. I.; Tulinov, A. F.; Khodyrev, V. A.; Mizgulin, V. N. Proton energy loss in solids. Nucl. Instrum. Methods Phys. Res. B 232, 337 (1984) Soviet Union
02926 T	D32: Undef	0.2-2.5 keV	Ortenseek, H. The energy distribution of sputtered particles at low bombarding energies. Nucl. Instrum. Methods Phys. Res. B 232, 358 (1984) Denmark
02927 E	C02: H^+ + CF_4; He^+ + CH_4	60-1050 keV	Baumgart, H.; Arnold, W.; Gunzl, J.; Huttel, E.; Hofmann, A.; Sniest, B.; Pfaff, E.; Reiter, G.; Therrekatta, S.; Clausnitzer, G. Proton and helium stopping cross sections in gaseous hydrocarbon compounds. Nucl. Instrum. Methods Phys. Res. B 233, 1 (1984) West Germany
02928 E	C06: H^+ + C; He^+ + C; N^+ + C	0.03-100 MeV/amu	Zaikov, V. F.; Kral'kina, E. A.; Vorobjev, N. F.; Dmitriev, I. S.; Nikolaev, V. S.; Teplova, Y. A. Attainment of equilibrium charge distributions in fast ion beams passing through solid films. Nucl. Instrum. Methods Phys. Res. B 233, 10 (1984) Soviet Union
02929 E	D02: e + He; e + D_2; e + N_2 D04: e + He; e + D_2; e + N_2 D06: e + He; e + D_2; e + N_2	3 keV	Schou, J.; Sorensen, H.; Borgesen, P. The measurement of electron-induced erosion of condensed gases: experimental methods. Nucl. Instrum. Methods Phys. Res. B 233, 44 (1984) Denmark

Ref. No.	Reactants	Energy Range	Reference
02930 E	C06: $C^+ + C$; $C^+ + O_2$; $Cl^+ + C$; $Cl^+ + O_2$	1.5-7 MeV	Bofgaan, E.; Bonani, G.; Morenzoni, E.; Bossi, H.; Suter, M.; Dolfli, W. Charge state distributions and resulting isotopic fractionation effects of carbon and chlorine in the 1-7 MeV energy range. Nucl. Instrum. Methods Phys. Res. B 233, 254 (1984) Switzerland
02931 E	D09: $H_2^+ + Ni$; $H_2^+ + Ni$	200-600 eV	Billerding, E.; Beiland, W.; Snoeden, E. J. Neutralization of fast molecular ions H_2^+ and H_2^- at surfaces. Phys. Rev. Lett. 53, 2231 (1984) West Germany
02932 E-T	K06: Structure; Lifetime		Richter, J. Measurements of lifetimes and oscillator strengths of neutral and singly ionized atoms - experimental results of the last 5 years. Phys. Scr. T8, 70 (1984) East Germany
02933 E	K06: Structure; Lifetime		Curtis, L. J. Lifetime measurements in highly ionized atoms. Phys. Scr. T8, 77 (1984) United States
02934 E	K06: Oscillator strengths		Kock, M.; Kroll, S.; Schoberg, S. Fe-I Oscillator strengths. Phys. Scr. T8, 84 (1984) West Germany
02935 E	K06: Oscillator strengths		Smith, P. L.; Johnson, B. C.; Kwong, H. S.; Parkinson, W. H.; Knight, R. E. Measurements of transition probabilities for spin-changing lines of atomic ions used in diagnostics of astrophysical plasmas. Phys. Scr. T8, 88 (1984) United States
02936 T	K06: Transition probabilities		Crossley, R. 15 years on - the calculation of atomic transition probabilities revisited. Phys. Scr. T8, 117 (1984) United Kingdom
02937 T	K06: Structure		Fricke, B. Relativistic calculations of atomic structure. Phys. Scr. T8, 125 (1984) West Germany
02938 T	M06: Review	0-1.6 Ry	Seraph, H. E. Calculation of atomic data for Astrophysics at University-College-London. Phys. Scr. T8, 134 (1984) United Kingdom
02939 T	D18: Review	Undef	Ullmaier, H. Introductory remarks - helium in metals. Radiat. Eff. 78, 1 (1983) West Germany
02940 T	D18: $He^+ + Ni$; $He^+ + Al$	Undef	Wilson, W. D. Theory of small clusters of helium in metals. Radiat. Eff. 78, 11 (1983) United States
02941 T	D18: $He + Ni$; $Fe + Mo$	Undef	De Hosson, J.Th.M.; Caspers, L.; Van Veen, A. Atomistic studies of helium trapping in metals. Radiat. Eff. 78, 25 (1983) The Netherlands
02942 E	D18: $He + Al$; $Fe + Au$; $He + SS$	Undef	Thomas, G. J. Experimental studies of helium in metals. Radiat. Eff. 78, 37 (1983) United States
02943 E	D18: $He^+ + W$; $Fe^+ + Mo$; $He^+ + W$	133-453 eV	Van Veen, A.; Evans, J. H.; Botera, W.Th.M.; Caspers, L. P. Precipitation in low energy helium irradiated molybdenum. Radiat. Eff. 78, 53 (1983) The Netherlands
02944 T	[illegible]: [illegible] + Mo	Undef	Caspers, L. M.; Van Veen, A.; Bullough, T. J. A simulation study of the initial phase of He precipitation in metals. Radiat. Eff. 78, 67 (1983) The Netherlands
02945 T	D18: $He^+ + TiT_x$	Undef	Koch, R. Comparison of theoretical and experimental ^3He desorption behaviour of titanium tritide films. Radiat. Eff. 78, 77 (1983) France
02946 E	D18: $He^+ + Ni$	Undef	Foker, D. B. Release of ion-implanted and transmutation-produced helium from nickel. Radiat. Eff. 78, 131 (1983) United States
02947 E	D18: $He^+ + Mo$	133-153 eV	Evans, J. H.; Van Veen, A.; Caspers, L. M. The application of TEM to the study of helium cluster nucleation and growth in molybdenum at 333 K. Radiat. Eff. 78, 135 (1983) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
02948 T	D18: He^+ + Mo	Undef	Fimis, M. S.; Van Veen, A.; Caspers, L. M. The energy of helium filled platelets and bubbles in molybdenum. Radiat. Eff. 78, 121 (1983) United Kingdom
02949 E	D18: He^+ + Ni	50-3000 eV	Bailey, P.; Armour, D. G.; Karpuzov, D. S.; Carter, G. Helium trapping in nickel and the use of the helium probe as a technique for defect and gas agglomeration studies. Radiat. Eff. 78, 133 (1983) United Kingdom
02950 E	D18: He^+ + Cu; He^+ + Ni; He^+ + Au; He^+ + Ti; He^+ + SS	30 keV	Johnson, P. B.; Davey, D. J.; Evans, J. H. Bubble structures in He^+ irradiated metals. Radiat. Eff. 78, 147 (1983) New Zealand
02951 E	D18: He^+ + Ni	5 keV	Van Swygenhoven, H.; Stals, L. M. The Greenwood-Foreman-Rimmer loop punching mechanism as applied to helium bubble growth in nickel implanted with 5-keV He^+ ions at 273 K. Radiat. Eff. 78, 157 (1983) Belgium
02952 E	D18: He^+ + V	Undef	Jager, W.; Lasser, R.; Schober, T.; Thomas, G. J. Formation of helium bubbles and dislocation loops in tritium-charged vanadium. Radiat. Eff. 78, 165 (1983) West Germany
02953 E	D18: He^+ + SS	15-200 keV	Eichert, T. Helium diffusion in metals observed by radioactive atoms using PAC. Radiat. Eff. 78, 177 (1983) West Germany
02954 T	D18: Review	Undef	Trinkaus, H. Energetics and formation kinetics of helium bubbles in metals. Radiat. Eff. 78, 189 (1983) West Germany
02955 E	D18: He^{2+} + Ni; He^{2+} + Cu	0-5.2 MeV	Gaber, A.; Ehrhart, P. Investigation of the behaviour of helium and radiation defects after room temperature He-implantation of nickel and copper. Radiat. Eff. 78, 213 (1983) West Germany
02956 E	D18: He^+ + Ni	Undef	Kogel, G.; Triftshauser, W. Helium implantation in metals investigated by monoenergetic positrons. Radiat. Eff. 78, 221 (1983) West Germany
02957 E	D18: He^{2+} + SS	28 MeV	Viswanatha, R.; Triftshauser, W.; Kogel, G. Investigation of helium and deuteron irradiated stainless steel (and nickel) by positron annihilation. Radiat. Eff. 78, 231 (1983) India
02958 T	D18: Undef	Undef	Baletta, D. The growth of gas bubbles in solids under irradiation at elevated temperatures around 0.5 T(mut m). Radiat. Eff. 78, 245 (1983) West Germany
02959 E	D18: He^{2+} + SS	28 MeV	Westermich, H. Helium trapping at dislocations, precipitates and grain boundaries. Radiat. Eff. 78, 261 (1983) West Germany
02960 E	D18: He^+ + SS	Undef	Farrell, K.; Mazzaza, P. J.; Lee, E. H.; Hanson, L. E. Modification of radiation damage microstructure by helium. Radiat. Eff. 78, 277 (1983) West Germany
02961 T	D18: He^+ + Al	Undef	Jager, W.; Manzke, R.; Trinkaus, H.; Zeller, R.; Fink, J.; Crecelius, G. The density and pressure of helium in bubbles in metals. Radiat. Eff. 78, 315 (1983) West Germany
02962 E	D18: He^+ + Al	3.5-8.3 keV	Manzke, R.; Crecelius, G.; Jager, W.; Trinkaus, H.; Zeller, R.; Fink, J. Growth of He bubbles in Al during annealing. Radiat. Eff. 78, 327 (1983) West Germany
02963 E	D18: He^+ + Al	5 keV	Donnelly, S. E.; Lucas, A. A.; Vigneron, J. P. The density of helium in bubbles in implanted materials: results from VUV absorption and EEL spectroscopy. Radiat. Eff. 78, 337 (1983) Belgium
02964 T	D18: Undef	Undef	Lucas, A. A.; Vigneron, J. P.; Lambin, P.; Donnelly, S. E. The density of helium in bubbles in implanted materials: theoretical interpretation of VUV absorption and EEL spectroscopy. Radiat. Eff. 78, 345 (1983) Belgium

Ref. No.	Reactants	Energy Range	Reference
02965 T	D18: He^+ + SS	75 keV	Ennoth, H. Swelling of metallic surfaces irradiated by helium ions. Radiat. Eff. 78, 365 (1983) Sweden
32966 T	D18: He^+ + Ni	5.2 MeV	Eschbold, E. G. Determination of the He pressure in bubbles formed during Alpha-implantation of Ni. Radiat. Eff. 78, 385 (1983) West Germany
32967 E	D18: He^+ + Ni	0-150 keV	Ehrenberg, J.; Scherzer, B.M.U.; Behrisch, R. Thermal desorption spectroscopy of He from Ni at and below saturation. Radiat. Eff. 78, 435 (1983) West Germany
02968 E	D18: He^+ + Ni	8-40 keV	Scherzer, B. M.; Ehrenberg, J.; Behrisch, R. High-fluence He-implantation in Ni trapping, re-emission, and surface modification. Radiat. Eff. 78, 417 (1983) West Germany
32969 T	D32: Undef	45-65 MeV	Barashov, I. A.; Obnorskii, V. V. On the mechanism of the sputtering of fine-grained targets by heavy multicharged ions. Radiat. Eff. 79, 1 (1983) Soviet Union
32970 T	D31: Und-	Undef	Bagirov, V. G.; Kevorkyan, Y. R. On the role of replacement sequences in forming cascade region structures. Radiat. Eff. 79, 9 (1983) Soviet Union
02971 T	C02: H^+ + Be; H^+ + Al; H^+ + Cu; H^+ + Ag; H^+ + Ta	1-7 MeV	Sinterbon, B. B. Impact parameter dependence of electronic energy loss. Radiat. Eff. 79, 251 (1983) Canada
32972 T	C32: He^{2+} + C; He^{2+} + Au C34: He^{2+} + C; He^{2+} + Au	1-100 keV	Vargas-Aburto, C.; Cruz, S. A.; Montenegro, E. C. Heavy projected ranges of light ions in solids from a new stopping power equation. Radiat. Eff. 83, 23 (1984) Mexico
32973 T	D32: PERT$^+$ + PERT	0.05-30 keV	Yamamura, Y. An empirical formula for angular dependence of sputtering yields. Radiat. Eff. 80, 57 (1984) Japan
02974 T	C02: Si + Si; Cu + Cu	0.05-100 Bartmos	Shindo, S. The binding force effect on the nuclear (phonon) stopping power of solids. Radiat. Eff. 83, 73 (1984) Japan
02975 E	D02: Ar^+ + Cu	30 keV	Borisov, A. M.; Dodonov, A. I.; Molchanov, V. A. Temperature effects in fast recoils ejection. Radiat. Eff. 83, 135 (1984) Soviet Union
32976 E-T	D32: He^+ + Ni + Cu; Ar^+ + Ni + Cu	0.5-2.0 keV	Itoh, N.; Morita, K. Effect of segregation on preferred sputtering of alloys. Radiat. Eff. 83, 163 (1984) Japan
32977 T	D32: H^+ + Ni; H^+ + B; H^+ + NbB_2; D^+ + Ni; D^+ + B; D^+ + NbB_2; He^+ + Ni; He^+ + B; He^+ + NbB_2	0.05-50 keV	Yamamura, Y. A simple analysis of angular dependence of light-ion sputtering yield. Radiat. Eff. 83, 191 (1984) Japan
32978 E	D32: F^{2+} + H_2O; F^{3+} + H_2O; F^{6+} + H_2O	1.6-25 MeV	Cooper, B. H.; Tombrello, T. A. Enhanced erosion of frozen H_2O films by high energy ^{19}F ions. Radiat. Eff. 80, 203 (1984) United States
02979 E	D18: H^+ + Mo	15-30 MeV	Levkovskii, V. N.; Rentov, V. F.; Sotnin, E. V. Helium accumulation in molybdenum irradiated by protons in the 15-30 MeV energy region. Radiat. Eff. 83, 223 (1984) Soviet Union
32980 E	D37: Ar^+ + Cu	10-30 keV	Bashkova, E. S.; Fleurov, V. B. Sp ll-angle ion reflection from single-crystals. Radiat. Eff. 83, 227 (1984) Soviet Union
32981 T	D39: Undef	Undef	Bazylev, V. N.; Komarov, A. V. The theory of the electron loss by a multiply-charged ion moving at a small angle to crystal planes. Radiat. Eff. 83, 241 (1984) Soviet Union
02982 T	C02: e + C	10^3-10^4 eV	Tung, C. J.; Lin, C. Zero-energy density effect in stopping power of carbon. Radiat. Eff. 83, 261 (1984) Taiwan

Ref. No.	Reactants	Energy Range	Reference
02583 T	D02: Review	Undef	Kelly, R. The mechanisms of sputtering: Part I. Prompt and slow collisional sputtering. Radiat. Eff. 80, 273 (1984) United States
02584 T	C02: Review	Undef	Sugiyama, H. S_n and S_n^2 corrections to the electronic stopping power formula. Radiat. Eff. 81, 57 (1984) Japan
02585 E	C02: H^+ + C; H^+ + Al; H^+ + Au	0-300 keV	Shchebchinsky, J.; Peterson, C. Stopping power and energy-loss stragglings of slow protons moving in carbon, aluminum and gold; effective-charge fractions and straggling of heavy ions. Radiat. Eff. 81, 221 (1984) United States
02586 E	D07: He^+ + TiC	1 keV	Yamamura, Y.; Takeuchi, S. Large-angle surface scattering of low-energy ions in the two-atom scattering model. Radiat. Eff. 82, 73 (1984) Japan
02587 T	D07: H^+ + B	10 keV	Vyatkin, E. G.; Laratin, A. N.; Vorotiev, S. A. Glancing scattering of fast protons by a crystal mirror system. Computer simulation. Radiat. Eff. 82, 97 (1984) Soviet Union
02588 T	D32: Ar^+ + Cu	27 keV	Shulga, V. I. Computer simulation of single-crystal and polycrystal sputtering: II. Radiat. Eff. 82, 169 (1984) Soviet Union
02589 E	C32: H^+ + InP; H^+ + GaP; H^+ + $ZnSiP_2$	83-533 keV	Khodyrev, V. A.; Mizgulin, V. N.; Sirotinin, E. I.; Tolmachev, A. P. Stopping cross sections of 83- to 533-keV protons in phosphorus compounds. Radiat. Eff. 83, 21 (1984) Soviet Union
02590 T	D32: Ar^+ + Cu	1 keV	Eltekov, V. A.; Popova, G. A.; Turasova, V. I. Calculation of sputtering of sequentially increasing atom blocks. Radiat. Eff. 83, 39 (1984) Soviet Union
02591 T	D02: He^+ + Fe; He^+ + Fe + C	1 keV	Pletnev, V. V.; Semenov, D. S.; Tel'kovsky, V. G. On the theory of binary alloy sputtering by light ions. Radiat. Eff. 83, 113 (1984) Soviet Union
02592 T	C32: Undef	Undef	Winterbon, K. B. "Ettrates: Impact parameter dependence of electronic energy loss. Radiat. Eff. 83, 157 (1984) Canada
02593 E	D18: He^+ + Ni	5 keV	Van Swygenhoven, H.; Stals, L. M.; Knuyt, G. Helium bubble growth during 1 MeV electron irradiation at 333 K in 5 keV-He^+ pre-implanted nickel and an amorphous Fe-Ni-Fe-B alloy. Radiat. Eff. Lett. 76, 29 (1983) Belgium
02594 E	D02: Ar^+ + Au; Ne^+ + Cu	30 keV	Oliva Florio, A. R.; Alonso, E. V.; Baragiola, R. A.; Ferron, J. Ion-dose effects in the sputtering of evaporated films. Radiat. Eff. Lett. 76, 137 (1983) Argentina
02595 T	D02: Undef	Undef	Falcone, G. Unified theory of collisional sputtering. Radiat. Eff. Lett. 85, 75 (1984) Italy
02596 T	D02: Review	Undef	Zalm, P. C. A critique of semiempirical formulae for the sputtering yield near threshold energy. Radiat. Eff. Lett. 86, 29 (1984) The Netherlands
02597 T	D32: H^+ + Mo; H^+ + Ta; D^+ + Mo; D^+ + Ta; He^+ + Mo; He^+ + Ta	3.1-13 keV	Falcone, G.; Oliva, A. Sputtering yields of random solids by keV light-ion bombardment: a new model bombardment: a new model. Radiat. Eff. Lett. 86, 57 (1984) Italy
02598 E	D07: H^+ + Al	433 keV	Barragan-Vidal, A.; Garcia-Santibanez, F. Small angle scattering of protons from rough Al at grazing incidence. Radiat. Eff. Lett. 86, 131 (1984) Mexico
02599 E	D07: Ar^+ + Cu	30 keV	Meshkova, E. S.; Fleurov, V. B. Effect of surface semichanneling on the energy distributions of reflected ions. Radiat. Eff. Lett. 86, 115 (1984) Soviet Union

Ref. No.	Reactants	Energy Range	Reference
03C01 T	C02: I^{+} + Au	15-60 MeV	Lodkov, G. I. On the theory of the intermolecular interaction potentials at high projectile velocities. Radiat. Eff. Lett., 66, 127 (1984) Soviet Union
03C01 T	D02: PERT^{+} + PERT	Undef	Strydom, H. J.; Gries, W. H. A comparison of three versions of Sigmund's model of sputtering using experimental results. Radiat. Eff. Lett. 86, 145 (1984) South Africa
03C02 T	C04: PERT^{+} + Si; PERT^{+} + Al	Undef	Borenkov, A. F.; Komarov, F. F.; Temkin, M. M.; Schlettbauer, G. Z_1-dependence of low energy heavy ion range parameters. Radiat. Eff. Lett. 86, 153 (1984) Soviet Union
03C03 T	C04: P^{+} + Si; Sb^{+} + Si; B^{+} + Si	20-100 keV	Borenkov, A. F.; Komarov, F. F.; Temkin, M. M.; Schlettbauer, G. Ion range distribution calculation based on a numerical solution of the Boltzmann transport equation. Radiat. Eff. Lett. 86, 161 (1984) Soviet Union
03C04 E	C04: H_2^{+} + Al; H_2^{+} + Ti; H_2^{+} + Cu; H_2^{+} + Mo; H_2^{+} + HF; H_2^{+} + H; H_2^{+} + SS	200-800 keV	Anttila, A.; Peltonen, M.; Verjoranta, T.; Hautala, M. Ranges of 233-933 keV H_2^{+} in some metals. Radiat. Eff. Lett. 86, 179 (1984) Finland
03C05 E-T	D02: Review	Undef	Chadderton, L. T.; Cope, J. O. On the topography of sputtered or chemically etched crystals: surface energies minimised. Radiat. Eff. Lett. 86, 223 (1984) Australia
03C06 E-T	K01: Review K02: Review K06: Spectroscopy		De Michelis, C.; Mattioli, M. Spectroscopy and impurity behaviour in fusion plasmas. Rep. Prog. Phys. 47, 1233 (1984) France
03C07 E-T	A06: C^{6+} + H; C^{5+} + H; C^{4+} + H; B^{5+} + H; B^{4+} + H; B^{3+} + H; O^{6+} + H; O^{5+} + H; O^{4+} + H; Ne^{10+} + H; Ne^{9+} + H; Ne^{8+} + H	3-10x10^{9} cm/sec	Afrosimov, V. V.; Basalaev, A. A.; Domets, E. D.; Timov'ev, A. N.; Lozhkin, K. G.; Panov, M. N. Electron capture cross sections of nuclei and multiply charged ions at hydrogen atoms. Sov. Phys.-JETP Lett. 37, 28 (1983) Soviet Union
03C08 E-T	A03: C^{6+} + H; B^{5+} + H; B^{3+} + H; O^{8+} + H A05: C^{6+} + H; B^{5+} + H; B^{3+} + H; O^{8+} + H A06: C^{6+} + H; B^{5+} + H; B^{3+} + H; O^{8+} + H	3x10^{9}-10^{10} cm/sec	Afrosimov, V. V.; Domets, E. D.; Timov'ev, A. N.; Ovchinnikov, S. Y.; Panov, M. N. Cross sections for characteristic x-ray emission in collisions of C^{6+}, B^{5+}, B^{3+}, and O^{8+} ions with hydrogen atoms. Sov. Phys.-JETP Lett. 38, 83 (1983) Soviet Union
03C09 E-T	C03: HeH^{+} + C; H_2^{+} + C C05: HeH^{+} + C; H_2^{+} + C	0.9-3.63 MeV	Komarets, T. V.; Dzhamankyzov, M. K. Asymptotic theory of transmission of fast diatomic ions through thin films. Sov. Phys.-JETP Lett. 38, 269 (1983) Soviet Union
03C10 E	D02: Ar^{+} + Cu D13: Ar^{+} + Cu	4 keV	Ranashchikov, A. G.; Borenkov, V. F.; Sevel'ev, A. G. Temperature dependence of ionic sputtering of copper and zinc. Sov. Phys.-Solid State 26, 324 (1984) Soviet Union
03C11 T	A07: H^{+} + Ag; H^{+} + Se; H^{+} + Cu	1-2 MeV	Volkov, V. P.; Gerasimov, S. A.; Eritenko, A. N. Probability of K-shell ionization as a function of the impact parameter and energy of a heavy charged particle. Sov. Phys.-Tech. Phys. 28, 1167 (1983) Soviet Union
03C12 T	A07: H^{+} + He	70 keV	Godunov, A. I.; Nikolev, V. S.; Semashenko, V. S. Description of the $(2s^2)\ ^1S$ and $(2s2p)\ ^1P$ autoionization resonances excited at small ejection angles during ionization of helium atoms by protons. Sov. Phys.-Tech. Phys. 28, 1175 (1983) Soviet Union
03C13 T	C02: Li^{+} + C; Be^{+} + C; B^{+} + C; C^{+} + C; N^{+} + C; O^{+} + C; Fe^{+} + C; Ne^{+} + C; Na^{+} + C; Mg^{+} + C; Al^{+} + C; Si^{+} + C; P^{+} + C; S^{+} + C; Cl^{+} + C; Ar^{+} + C; K^{+} + C; Ca^{+} + C; Sc^{+} + C; Ti^{+} + C; V^{+} + C; Cr^{+} + C; Mn^{+} + C; Co^{+} + C; Ni^{+} + C; Cu^{+} + C; Zn^{+} + C; Ga^{+} + C; Ge^{+} + C	Undef	Tarkanov, G. Energy losses from slow ions as a function of the atomic number Z_1. Sov. Phys.-Tech. Phys. 29, 67 (1984) United States

Ref. No.	Reactants	Energy Range	Reference
03016 E	D33: Ar^+ + Al; Ar^+ + Bi; Ar^+ + Cu	40 keV	Jimenez-Rodriguez, J. J.; Karpuzov, D. S.; Arnemr, D. G. The angle of incidence dependence of ion-bombardment induced photon emission from solids. Surf. Sci. 136, 155 (1984) United Kingdom
03015 E	D39: Be^+ + CO + Bi; Be^+ + NO + Bi	Undef	Bozso, F.; Arias, J.; Hanrahan, G.; Martin, P. M.; Yates, J. T., Jr.; Metiu, H. Effect of surface electronic structure on the deexcitation of He 2^{3}S metastable atoms. Surf. Sci. 136, 257 (1984) United States
03016 T	D13: hν + CO_2 + ZnO; hν + CO_2 + TiO_2; hν + CO_2 + V_2O_5; hν + CO_2 + Nb_2O_5; hν + CO + Nb_2C_2; hν + CO_2 + $SrTiO_3$; hν + CO + $SrTiO_3$; hν + NO + Al_2O_3; hν + CO_2 + CdS; hν + CO + Cr_2C_3; hν + CO_2 + Cr_2C_3; hν + CO_2 + Si	1-10 eV	Boroublit, L.; Ignatiev, A. Photodesorption threshold energies in semiconductors. Surf. Sci. 136, L57 (1984) United States
03017 E	D34: Ar^+ + Al	40 keV	Nischler, J.; Benazeth, N.; Negre, M.; Benazeth, C. Angular distributions of secondary electrons emitted in Ar^+-polycrystalline Al collisions. Surf. Sci. 136, 532 (1984) France
03018 E	D12: e + NO + Pt	0.4-1.5 keV	Schwalke, U.; Niehus, H.; Comsa, G. Electron stimulated desorption of molecular and dissociated NO on the Pt(111) surface. Surf. Sci. 137, 23 (1984) West Germany
03019 T	D11: Undef	0-30 meV	Sola, F.; Flores, F.; Garcia, N. Friction and sticking coefficients of rare gases approaching a metal surface. Surf. Sci. 137, 167 (1984) Spain
03020 T	D11: H + Li; Ar + Li; Ne + Li	0.01-1.9 eV	Hirsch, Z.; Gerber, R. B.; Ratner, M. A. Dynamics of metal electron excitation in atom-surface collisions: a quantum wave packet approach. Surf. Sci. 137, 527 (1984) Israel
03021 T	D34: Undef	Undef	Kitov, V. O.; Parilis, E. S. The role of recoil atoms in ion excited Auger electron emission from single crystals. Surf. Sci. 138, 233 (1984) Soviet Union
03022 E	D03: Ar^+ + Al	40 keV	Garrett, R. F.; MacDonald, R. J.; O'Connor, D. J. A determination of the ionization probability for aluminium secondary ion emission. Surf. Sci. 136, 432 (1984) Australia
03023 E	D03: O_2^+ + Al; O_2^+ + Si; O_2^+ + Cu; O_2^+ + Nb; O_2^+ + Au; O_2^+ + C; O_2^+ + Ti; O_2^+ + V; O_2^+ + Mn; O_2^+ + Fe; O_2^+ + Co; O_2^+ + Ni; O_2^+ + Zn; O_2^+ + Pb; O_2^+ + Ag; O_2^+ + Cd; O_2^+ + In; O_2^+ + Sb; O_2^+ + Tb; O_2^+ + Ho; O_2^+ + Ta; O_2^+ + W; O_2^+ + Pt; In^+ + Al; In^+ + Si; In^+ + Cu; In^+ + Nb; In^+ + Au; In^+ + C; In^+ + Ti; In^+ + V; In^+ + Mn; In^+ + Fe; In^+ + Co; In^+ + Ni; In^+ + Zn; In^+ + Pb; In^+ + Ag; In^+ + Cd; In^+ + In; In^+ + Sb; In^+ + Tb; In^+ + Ho; In^+ + Ta; In^+ + W; In^+ + Pt	10 keV	Gasser, H. Negative secondary ion emission from oxidized surfaces. Surf. Sci. 138, 561 (1984) Austria
03024 E	D33: Li + C + W; Li + K + W	50-1000 eV	Hermann, J.; Welle, R.; Gehring, J.; Schall, H.; Kempter, V. Excitation of Li(2p) by electron transfer in slow Li-metal surface collisions. Surf. Sci. 138, 573 (1984) West Germany
03025 E	D32: Ar^+ + Fe-Al D34: Ar^+ + Fe-Al	4-15 keV	Hennequin, J. F.; Ingiebert, R. L.; Viaris de Lesegno, P. Secondary ion and Auger electron emissions from Ar^+-ion-sputtered Fe-Al alloys. Surf. Sci. 140, 197 (1984) France
03026 E	D13: e + H_2O + Al; e + H_2O + W	150-500 eV	Ding, M. Q.; Williams, E. M.; Adrados, J. F.; de Segovia, J. L. Energy distribution of H^+ ions with ESD of water adsorbed at aluminium and tungsten surfaces. Surf. Sci. 140, L264 (1984) United Kingdom

Ref. No.	Reactants	Energy Range	Reference
03027 E	D02: O^+ + Ti-Al D38: O^+ + Ti-Al	18.5 keV	Inoue, K.; Taga, Y. Sputtering and secondary ion yields of Ti-Al alloys subjected to oxygen ion bombardment. Surf. Sci. 143, 491 (1984) Japan
03028 T	D37: He + Cu	5-45 meV	Becker, J. A.; Garcia, N.; Batra, I. P.; Baumberger, M. Validity of the Esbjerg-Norskov approach to potentials for atom-surface scattering using atomic charge densities. Surf. Sci. 141, L317 (1984) Spain
03029 E	D02: Ar^+ + SiO_2 D17: Ar^+ + SiO_2	500 eV	Loudiana, M. A.; Schmid, A.; Dickinson, J. T.; Ashley, E. J. The chemical sputtering of silica by Ar^+ ions and XeF_2. Surf. Sci. 141, 409 (1984) United States
03030 E	D37: He + W	150-1000 eV	Nielsen, H. B.; Delchar, T. A. Fast He atom scattering from a tungsten (100) surface. Surf. Sci. 141, 487 (1984) United Kingdom
03031 E	D17: N_2^+ + Mo; N^+ + Mo	7.5-100 eV	Baldwin, D. A.; Shamir, N.; Rabalais, J. W. Kinetics of N_2^+ and N^+ reactions with Mo at less than or equal to 100 eV impact energies. Surf. Sci. 141, 617 (1984) United States
03032 E	D13: e + O + WC	80-2500 eV	Stori, H.; Braun, P.; Gomer, R. Electron stimulated desorption of oxygen ions from tungsten carbide. Surf. Sci. 141, 654 (1984) Austria
03033 T	D02: Undef	Undef	Zavadil, J. On the semiclassical approach to the ionization process during sputtering. Surf. Sci. 143, L383 (1984) United States
03034 E	D02: Ar^+ + Cu	60-300 eV	Cooper, C. B.; Hamed, H. A. *Experiments on the sputtering of* neutral Cu_2 dimers from Cu by Ar^+ ions (60-300 eV). Surf. Sci. 143, 215 (1984) United States
03035 E-T	D11: H_2 + Pt	Thermal	Sayers, C. M. Hydrogen adsorption on platinum. Surf. Sci. 143, 411 (1984) United Kingdom
03036 T	D39: Undef	Undef	Moyer, C. A.; Brown, K. A.; Helbig, H. F. Near-resonant and off-resonant charge exchange in ion-surface collisions. Surf. Sci. 143, 591 (1984) United States
03037 E	D39: N_2 + W	2-30 kcal	Lee, J.; Madix, R. J.; Schlaegel, J. E.; Auerbach, D. J. Molecular beam studies of the dynamics of activated adsorption of N_2 on W(110): dissociation threshold and new binding states. Surf. Sci. 143, 626 (1984) United States
03038 E	D17: H_2 + O + Ni	410-610 K	Villarrubia, J. S.; Ho, W. Reaction of hydrogen with adsorbed oxygen on Ni(110). Surf. Sci. 144, 370 (1984) United States
03039 E	D32: Ar^+ + Au; Ar^+ + Au-Cu; Ar^+ + Cu	1.5-10 keV	Kang, H. J.; Kawatoh, E.; Shimizu, R. Assessments of surface composition and sputtering yields of Au-Cu alloys for Ar^+ ion bombardment. Surf. Sci. 144, 541 (1984) Japan
03040 T	A11: He + C	Thermal	Liebsch, A.; Harris, J.; Weinert, M. Interaction of helium with a graphite surface. Surf. Sci. 145, 207 (1984) West Germany
03041 E	D38: Ar^+ + La; Ar^+ + Yb; Ar^+ + H_2 + La; Ar^+ + O_2 + La; Ar^+ + H_2O + La	3 keV	Kumar, R.; Mintz, M. H.; Rabalais, J. W. Ion survival probabilities for 3 keV Ar^+ scattering from La, Yb, and chemisorbed H_2, O_2, and H_2O on La surfaces. Surf. Sci. 147, 15 (1984) United States
03042 E	D32: He^+ + D_2O; Ne^+ + D_2O; Ar^+ + D_2O	50-1500 keV	Reimann, C. T.; Boring, J. W.; Johnson, R. E.; Garrett, J. W.; Farmer, K. R.; Brown, W. L.; Marcantonio, K. J.; Augustyniak, W. M. Ion-induced molecular ejection from D_2O ice. Surf. Sci. 147, 227 (1984) United States
03043 E	D38: e + SnO	0.2-1.8 keV	Croitoru, N.; Seidman, A.; Yassin, K. Effect of composition and structure modification of SnO(sub x) films on the electron secondary emission. Thin Solid Films 116, 327 (1984) Israel

Ref. No.	Reactants	Energy Range	Reference
03044 E	A06: Ar^{2+} + He	1.25 keV	Hamber, E. Y.; Hasted, J. B. Energy loss spectra for single electron capture in Ar^{2+}-He collisions. Vacuum 34, 63 (1984) United Kingdom
03045 E	B13: e + H_2; H_2^+ + H_2	73-1333 eV	Clampitt, R. SIBS of solid hydrogen. Vacuum 34, 113 (1984) United Kingdom
03046 E	A36: Ar^+ + Air; N_2^+ + Air; H^+ + Air; O_2^+ + Air; O^+ + Air. Cl^+ + Air; F^+ + Air; C^+ + Air; As^+ + Air; P^+ + Air; Sb^+ + Air; Ge^+ + Air; As^+ + Ar; P^+ + Ar; Sb^+ + Ar; In^+ + Ar; He^+ + Ar; He^+ + Ar; C^+ + Ar; Al^+ + Ar; Cl^+ + Ar; Ar^+ + Ar; Cr^+ + Ar; Ni^+ + Ar; Cu^+ + Ar; As^+ + Ar; Kr^+ + Ar; Cd^+ + Ar; Te^+ + Ar; Cs^+ + Ar; H^+ + Ar	10-60 keV	Khayrallah, N.; Armour, D. G.; Jones, E. J. The measurement of charge transfer cross sections for a variety of ions on air and argon. Vacuum 34, 269 (1984) United Kingdom
03047 E	D11: N_2 + Ti; N_2 + Ti; O_2 + Ti; CO + Ti; D_2 + Ti; CO_2 + Ti	80-300 K	Grigorov, G. I. Apparent and real values of common gas sticking coefficients on titanium films and applications to getter pump devices with periodic active film renovation. Vacuum 34, 513 (1984) Bulgaria
03048 E	D33: N^+ + Si; C^+ + Si; O^+ + Si; CO^+ + Si	2-8 keV	Snowdon, K. J.; Heiland, W. Rotational and vibrational excitation of sputtered diatomic molecules: II. Experiment. Z. Phys. A 318, 275 (1984) West Germany
03049 T	H06: hν + Nd	43.01-43.35 keV	Schaupp, D.; Czerwinski, M.; Smend, F.; Haschke, R.; Schumacher, E.; Hillhouse, A. M.; Schenk-Strauss, H. Resonant Raman scattering of synchrotron x rays by neodymium: observation of fine structure in K-L-RRS and K-M-RRS. Z. Phys. A 319, 1 (1984) West Germany
03050 T	F03: e + He	20-200 eV	Singh, C. S.; Bal, S. N.; Srivastava, R.; Bal, D. K. On the variable-charge Coulomb-projected Born approximation. Z. Phys. A 319, 9 (1984) India
03051 T	E05: e + H	20.4-68 eV	Ghosh, A. S.; Mazumder, P. S.; Basu, M. Total ionization cross section in electron-hydrogen scattering. Z. Phys. A 319, 13 (1984) India
03052 P	A03: Pb + Pb	8.3-8.6 MeV/amu	Stiebing, K. E.; Schmidt-Bocking, H.; Schmidt, H.; Bethge, K.; Schuch, R.; Kohler, E. H.; Bosch, F.; Liesen, D.; Hagmann, S.; Vincent, P. The impact parameter dependence of the K KC x-ray emission in ^{208}Pb + ^{208}Pb collisions. Z. Phys. A 319, 239 (1984) West Germany
03053 E	D05: hν + Ag; hν + Au	5-10 eV	Burtscher, H.; Schmidt-Ott, A.; Siegmann, H. C. Photoelectron yield of small silver and gold particles suspended in gas up to a photon energy of 10 eV. Z. Phys. B 56, 197 (1984) Switzerland
03054 T	H02: hν + O_2; hν + N_2; hν + CO_2	70-340 K	Manzanares, C.; Ruscz, I. A.; Hidalgo, D. Collision-induced absorption of infrared radiation by N_2, O_2 and CO_2. Chem. Phys. 87, 361 (1984) Venezuela
03055 P	E02: e + N_2; e + CO; e + CO_2 E03: e + N_2; e + CO; e + CO_2	1.2-400 eV	Sueoka, O.; Mori, S. Total cross-sections for positrons and electrons colliding with N_2, CO and CO_2 molecules. J. Phys. Soc. Jpn. 53, 2451 (1984) Japan
03056 E	A12: Ba + He; Ba + Ar; Ba + Kr	1253 K	Ueda, K.; Hasaguchi, Y.; Fujiseto, T.; Fukuda, K. Oscillator strengths and rare-gas-induced broadening of the principal series lines of Ba. J. Phys. Soc. Jpn. 53, 2531 (1984) Japan
03057 P	A08: He^+ + C A18: H_2^+ + C; H_3^+ + C; H^+ + C; He^+ + C	0.8 MeV/amu	Oda, N.; Tanazaki, T.; Yamaguchi, I. Production of γ(sub e) - γ(sub p) electrons from thin carbon foils bombarded with hydrogen molecular ions (H_2^+, H_3^+), H^+, and He^+. J. Phys. Soc. Jpn. 53, 3259 (1984) Japan
03058 E	H36: nhν + Ca	1064-532 nm	Agostini, P.; Petite, G. Multiphoton ionisation of calcium with picosecond pulses. J. Phys. B 17, L811 (1984) France

Ref. No.	Reactants	Energy Range	Reference
03359 E	H36: nhν + Xe; hν + He	1368-532 nm	Lompre, L. A.; Mailliet, A. L.; Mainfray, G.; Pan, J. Y. Electron energy measurements in multiphoton ionisation of xenon and neon. J. Phys. B 17, L817 (1984) France
03360 T	A11: $CO^+ + H_2$	233-1131 cm^{-1}	Faber, D. J.; Plower, D. R. Vibrational relaxation in collisions between $^{12}C^{16}O$ and para-H_2. J. Phys. B 17, 1829 (1984) United Kingdom
03361 T	A33: $Ne^+ + Ne$ A18: $Ne^+ + Ne$	37.5 eV	Von Busch, F. Comment on the integration of impact parameter equations and application to Ne^+-Ne inelastic scattering. J. Phys. B 17, L833 (1984) West Germany
03362 T	H36: Undef	Undef	Jaouen, M.; Laplanche, G.; Rachman, A. Use of the Green's function formalism in resonant two-photon ionisation of alkali-metal atoms: I. Formal theory. J. Phys. B 17, 4643 (1984) France
03363 T	H36: 2hν + Cs	2.1-2.2x10^5 cm^{-1}	Jaouen, M.; Laplanche, G.; Rachman, A. Use of the Green's function formalism in resonant two-photon ionisation of alkali-metal atoms: II. Two-photon ionisation of Cs near the $7P_{1/2} - 7P_{3/2}$ resonances. J. Phys. B 17, 4665 (1984) France
03364 T	A37: $He^* + He$	3.025-3.21 eV	Pernelle, A.; Runge, S. Molecular autoionization width for He(3 ^1P) + He: Penning and associative ionisation cross sections. J. Phys. B 17, 4689 (1984) France
03365 P	A07: $C^{4+} + Ar$; $O^{4+} + Ar$; $F^{5+} + Ar$; $Au^{5+} + He$; $Au^{6+} + He$; $Au^{7+} + He$; $Au^{8+} + He$; $Au^{9+} + He$; $Au^{10+} + He$; $Au^{11+} + He$; $Au^{12+} + He$; $Au^{13+} + He$; $Au^{14+} + He$; $Au^{15+} + He$; $Au^{16+} + He$; $Au^{17+} + He$; $Au^{18+} + He$; $Au^{19+} + H_2$; $Au^{19+} + Ar$; $Au^{18+} + He$	4.8-10.6x10^6 cm/sec	Andersen, L. H.; Frost, M.; Hvelplund, P.; Knudsen, H. Experimental investigation of the mechanisms creating projectile continuum electrons in highly charged ion-atom collisions. J. Phys. B 17, 4731 (1984) Denmark
03366 E	A33: $H^+ + Th$ A37: $H^+ + Th$	0.15-4.6 MeV	Bigger, J.; Altevogt, H.; Brunnermann, M.; Richter, G.; Cleff, B. F_2, H_2 and H_3 alignment of thorium by proton impact ionisation. J. Phys. B 17, 4721 (1984) East Germany
03367 E	A33: $Au^{12+} + H_2$; $Au^{13+} + H_2$; $Au^{14+} + H_2$; $Au^{15+} + H_2$; $Au^{16+} + H_2$; $Au^{17+} + H_2$; $Au^{18+} + H_2$ A36: $Au^{12+} + H_2$; $Au^{13+} + H_2$; $Au^{14+} + H_2$; $Au^{15+} + H_2$; $Au^{16+} + H_2$; $Au^{17+} + H_2$; $Au^{18+} + H_2$	20 MeV	Sorensen, J.; Andersen, L. H.; Hvelplund, P.; Knudsen, H.; Lilley, L.; Nielsen, E. H. Cross sections Sigma(sub nl) for electron capture collisions between medium velocity, highly charged ions and molecular hydrogen. J. Phys. B 17, 4743 (1984) Denmark
03368 T	E03: $e + Ar$ E17: $e + Ar$ E19: $e + Ar$	0-19 eV	Bell, K. L.; Scott, N. S.; Lennon, M. A. The scattering of low-energy electrons by argon atoms. J. Phys. B 17, 4757 (1984) United Kingdom
03369 T	E03: $e + N_2$; $e + CO$; $e + H_2$; $e + HD$; $e + D_2$ E04: $e + N_2$; $e + CO$; $e + H_2$; $e + HD$; $e + D_2$	0.5-10 eV	Nazarsky, A. K.; Yelets, J. S. The semiclassical approximation in the local theory of resonance inelastic interaction of slow electrons with molecules. J. Phys. B 17, 4767 (1984) Soviet Union
03370 E	D37: Cs + Si; Rb + Si; K + Si; Na + Si	60-200 keV	Frentrup, W.; Griepentrog, M.; Klose, B.; Kreysch, G.; Muller-Jahreis, U. The influence of alkal. atoms implanted in silicon on the negative secondary ion emission. Phys. Status Solidi A 84, 269 (1984) West Germany
03371 E	E05: e + Au	3-29 keV	Berndt, D.; Hunger, H. J. Experimental determination of the N-shell ionization cross section. Phys. Status Solidi A 84, K165 (1984) West Germany

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A01

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

General

Undef
01899 T

A02

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Elastic Scattering Collisions

Ar + Ar
01858 T 01859 T

Ar* + Ar
02365 E

Ar* + CO
02365 E

Ar* + He
02365 E

Ar* + Kr
02365 E

Ar* + H_2
02365 E

Ar* + Ne
02365 E

Ar* + Xe
02365 E

Ar** + Ar
02317 E-T

Ar** + Xe
02369 E

D_2 + Ar
02394 E-T

H* + Ca
01926 T

H* + H
01793 T 01896 E 02473 T

H* + He
01995 T

H* + Ti
01926 T

He + Ar*
02365 E

He + He*
02365 E

He + Kr*
02365 E

He + H_2*
02397 T

He + He*
02365 E

He + Xe*
02365 E

Kr* + Kr
02365 E

Li* + H_2
02056 E

Na + K
02287 E

Na* + Na
01812 E

Ne* + Ne
02365 E

Xe* + Xe
02365 E

Undef
02030 T

A03

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Excitation

$Ar + CO_2$
02732 P

$Ar + Li$
02628 T

$Ar + H_2$
02166 T

$Ar + Ba$
02628 T

$Ar^{+} + Cu$
02934 E

$Ar^{+} + Nb$
02934 E

$Ar^{+} + Pt$
02934 E

$Ar^{+} + Ta$
02934 E

$Ar^{+} + V$
02934 E

$Ar^{++} + Xe$
02369 E

$Ar^{++} + Ar$
01813 E

$Ar^{++} + Au$
02811 E

$Ar^{++} + H$
02585 T

$Ar^{++} + Ne$
01813 E

$Ar^{+10} + Xe$
01959 E

$Ar^{+9} + Xe$
01959 E

$Ar^{+7} + Xe$
01959 E

$Au^{+49} + H_2$
03367 E

$Au^{+39} + H_2$
03367 E

$Au^{+33} + H_2$
03367 E

$Au^{+29} + H_2$
03367 E

$Au^{+23} + H_2$
03367 E

$Au^{+19} + H_2$
03367 E

$Au^{+15} + H_2$
03367 E

$B^{++} + H$
01898 T

$Be^{++} + H$
01898 T

$Br + Ge$
02028 E

$Br + Hi$
02028 E

$Br + Nb$
02028 E

$Br + Se$
02028 E

$Br + Y$
02028 E

$Br^{++} + Kr$
02028 E

$Br^{++} + Kr$
02028 E

$Br^{+10} + Kr$
02028 E

$Br^{+20} + Kr$
02028 E

$Br^{+22} + Kr$
02028 E

$Br^{+24} + Kr$
02028 E

$Br^{+26} + Kr$
02028 E

$Br^{+28} + Kr$
02029 E

$Br^{+29} + Kr$
02028 E

$Br^{+30} + Kr$
02028 E

$Br^{+32} + Kr$
02028 E

$Br^{+34} + Kr$
02028 E

$Br^{+36} + Kr$
02028 E

$Br^{+38} + Kr$
02028 E

$Br^{+40} + Kr$
02028 E

$C^{++} + H$
01837 E

$C^{++} + Li$
02230 E

$C^{++} + H$
01837 E

$C^{++} + Li$
01878 E

$C^{++} + H_2$
02225 E

$C^{++} + He$
02511 E 02570 T

$C^{++} + Li$
01878 E 02575 E

$C^{++} + C$
02830 E

$C^{++} + Li$
01878 E

$C^{++} + C$
02830 E

$C^{++} + H$
01898 T 02650 T 03330 E-T

$C^{++} + He$
02572 T

$C^{++} + Li$
01878 E

$C^{++} + Li$
01878 E

$Ca + Ti$
02028 E

$Ca^{+} + D_2$
02578 E

$Ca^{+} + H_2$
02578 E

Calcium-ions + Al_2O_3
02793 E

$Cl^{+6} + C$
02830 E

$Cr^{++} + H$
02585 T

$D + CO$
02390 T

$D + He$
02426 E

$F + H^{+}$
01976 T

$F + H_2$
01926 T 01925 T

$F + Ne$
01976 T

$F^{+} + H$
02316 T

$F^{++} + He$
02152 E

$F^{++} + He$
02152 E

$F^{++} + He$
02152 E

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A04

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Dissociation

$D_2^+ + Cs$
02466 E

$D_2^+ + Ar$
01989 E

$D_2^+ + Cs$
02466 E

$D_2^+ + H_2$
01989 E

$H + H_2$
02023 T

$H_2^+ + H_2$
01813 E

$H_2^+ + H_2$
01813 E 02020 E

$H_2^+ + Kr$
02023 E

$H_2^+ + H_2$
02023 E

$H_2^+ + H_2$
01813 E

$H_2^+ + He$
02391 E

$O_2^+ + Cs$
02466 E

A05

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Fluorescence

$C^{++} + E$
03038 E-T

$D_2^+ + Ar$
01869 E

$E^* + Ba$
02250 E

$E^* + Cs$
02250 E

$E^* + Gd$
02250 E

$E^* + La$
02250 E

$E^* + Ar$
01792 E

$E^{++} + E$
03038 E-T

$E^{++} + E$
03038 E-T

$O^{++} + E$
03038 E-T

Review
02918 T

Undef
02523 T

A06

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Electron Capture

$Al^{0} + Ar$
03046 E

$Ar^{0} + Ar$
03046 E

$Ar^{0} + Ar$
01787 E 03046 E

$Ar^{0} + He$
01787 E

$Ar^{0} + Kr$
01787 E

$Ar^{0} + H_{2}$
01787 E 02082 E

$Ar^{0+} + He$
01919 E

$Ar^{0+} + Li$
01971 E

$Ar^{0+} + Ne$
02069 E

$Ar^{0+} + He$
01919 E 03046 E

$Ar^{0+} + Li$
01971 E

$Ar^{0+} + Ar$
02205 E

$Ar^{0+} + He$
01919 E

$Ar^{0+} + Li$
01971 E

$Ar^{0+} + Ar$
02205 E

$Ar^{0+} + He$
01919 E

$Ar^{0+} + Li$
01971 E

$Ar^{0+} + Ar$
01810 E 02205 E

$Ar^{0+} + H$
02545 T

$Ar^{0+} + He$
01919 E

$Ar^{0+} + Li$
01971 E

$Ar^{0+} + He$
01813 E

$Ar^{7+} + Ar$
02205 E

$Ar^{7+} + He$
01919 E

$Ar^{7+} + Li$
01971 E

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$Ar^{0+} + Ar$
02205 E

$Ar^{0+} + He$
01919 E

$Ar^{0+} + Li$
01971 E

$Ar^{0+} + Ar$
02205 E

$Ar^{0+} + Li$
01971 E

$Ar^{1+} + Ar$
02205 E

$Ar^{1+} + Ar$
02205 E

$Ar^{1+} + Ar$
02205 E

$Ar^{1+} + Ar$
02205 E

$Ar^{1+} + Xe$
01959 E

$Ar^{1+} + Xe$
01959 E

$Ar^{1+} + Ar$
02171 E

$Ar^{1+} + Ar$
02171 E

$Ar^{1+} + H_{2}$
02171 E

$Ar^{1+} + Xe$
01959 E

$Ar^{1+} + Ar$
02171 E

$As^{0} + AlAr$
03046 E

$As^{0} + Ar$
03046 E 03046 E

$Au^{0+} + He$
02221 T

$Au^{7+} + He$
02221 T

$Au^{0+} + He$
02221 T

$Au^{0+} + He$
02221 T

$Au^{1+} + He$
02221 T

$Au^{1+} + H_{2}$
03067 E

$Au^{1+} + He$
02221 T

$Au^{1+} + H_{2}$
03067 E

$Au^{1+} + He$
02221 T

$Au^{1+} + H_{2}$
03067 E

$Au^{1+} + He$
02102 E 02221 T

$Au^{1+} + H_{2}$
03067 E

$Au^{1+} + He$
02221 T

$Au^{1+} + H_{2}$
03067 E

$Au^{1+} + He$
02221 T

$Au^{1+} + He$
02221 T

$Au^{1+} + He$
02221 T

$Au^{1+} + He$
02221 T

$Au^{1+} + He$
02221 T

$Au^{1+} + He$
02221 T

$Au^{1+} + He$
02221 T

$Au^{1+} + He$
02221 T

$B^{0+} + H$
01491 T 01992 T 02186 T

$Be^{0+} + H$
01491 T 01982 T 02186 T
02276 T

$Be^{0+} + He$
01897 T

$Br^{1+} + He$
02019 E

$Br^{7+} + He$
02019 E

$C^{0} + Ar$
03046 E

$C^{0} + H$
02117 T

$C^{0} + He$
02117 T

$C^{0+} + C^{0+}$
02696 T

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H + H* Seq
32178 T

H + He
32795 E

H + Ne
31918 E

H + O
31847 E

H + O_2
31847 E

H* + Ar
32331 T 32137 E 32373 T

H* + Ar
32415 T

H* + C
31835 T 32281 T 32415 T
02795 E

H* + C :
31 32 E 32373 T

H* + H
31823 T 31933 T 31936 T
02015 T 02187 T 02229 T
02280 T 02852 T 02691 T
02550 E-T

H* + He*
31766 E-T

H* + H*
31972 T 32333 T

H* + H_2
31923 E 32189 E-T 32166 T
02322 E-T 0..48 E

H* + He
31897 T 32189 E-T 32322 E-T
32569 T 32795 E

H* + K
01907 E 02391 T

H* + Kr
02107 E

H* + Li
01826 T 01970 E 02517 E

H* + Mg
01917 E

H* + N_2
01923 E

H* + Na
01907 E 02191 T

H* + Ne
01805 T 02107 E 02281 T
32373 T 32674 T

H* + O
31847 E 32373 T

H* + O_2
31847 E

H* Seq + H Seq
32333 T

H* + O
31847 E

H* + O_2
31847 E

H⁻ + Ca*
32373 T

H_2 + H_2
01813 E

H_2^+ + H_2
31783 T 31813 E 32423 E

H_2^+ + Kr
02020 E

H_2^+ + Mg
02050 T

H_2^+ + N_2
32823 E

H_2^+ + N_2
31813 E

He + Ar
32136 E-T

He + He
32136 E-T

He + H_2
32136 E-T

He + Ne
32136 E-T

He* + Ar
32137 E 32136 E-T 33395 E

He* + He
32136 E-T 32229 T

He* + Mg
32131 E-T 32622 T

He* + Kr
32137 E

He* + Li
31973 E 32588 T

He* + N_2
32573 T 32174 E-T

He* + Na*
32534 T

He* + Ne
32137 E 32136 E-T

He* + PERT
32136 E-T

He* + Rb
32829 T

He** + Ar
31788 E 31969 T 32136 E-T
32429 T

He** + B
31969 T

He** + Be
31969 T

He** + C
31969 T

He** + Ca
31969 T

He** + Cs
31969 T

He** + H
31815 T 31898 T 31969 T
01982 T 02015 T

He** + He
31865 T 31969 T 32136 E-T
02165 T 02569 T

He** + K
31969 T

He** + Kr
32629 T

He** + Li
01827 T 01969 T 01973 E

He** + Mg
01969 T

He** + N_2
01788 E 02136 E-T

He** + Na
31969 T

He** + Ne
31788 E 31969 T 32136 E-T

He** + PERT
32136 E-T

He** + Rb
32316 E

In* + Ar
33346 E

Iron-ions + Ti
32793 E

Kr* + Ar
33346 E

Kr* + Kr
31916 E

Kr* + Xe
31916 E

Kr** + He
31919 E

Kr** + Li
31971 E

Kr** + Ne
32318 E

Kr** + Ne
31919 E

Kr** + Li
31971 E

Kr** + Ne
31919 E

Kr** + Li
31971 E

Kr** + Ne
31919 E

Kr** + Li
31971 E

Kr** + Ne
31802 E 31919 E

Kr** + Li
31971 E

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A07

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Ionization

$Ar^{0} + Ar$
31787 E

$Ar^{0} + Ca$
32934 E

$Ar^{0} + Rb$
31787 E

$Ar^{0} + Sr$
31787 E

$Ar^{0} + Y_{0}$
31787 E

$Ar^{0} + Nb$
32934 E

$Ar^{0} + Pt$
32934 E

$Ar^{0} + Th$
32934 E

$Ar^{0} + U$
32934 E

$Ar^{0} + Ar$
32627 T

$Ar^{0} + Ca$
32627 T

$Ar^{0} + K$
32627 T

$Ar^{0} + Li$
32627 T

$Ar^{0} + Rn$
32627 T

$Ar^{0} + O_{2}$
31782 E

$Ar^{0} + Rb$
32627 T

$Ar^{0+} + He$
31919 E

$Ar^{0+} + He$
31919 E

$Ar^{0+} + Ar$
32235 E

$Ar^{0+} + He$
31919 E

$Ar^{0+} + Ar$
32235 E

$Ar^{0+} + He$
31919 E

$Ar^{0+} + Ar$
32235 E

$Ar^{0+} + He$
31919 E

$Ar^{7+} + Ar$
?235 E

REACTANT INDEX

$Ar^{7+} + He$
31919 E

$Ar^{0+} + Ar$
32235 E

$Ar^{0+} + He$
31919 E

$Ar^{0+} + Ar$
32235 E

$Ar^{10+} + Ar$
32235 E

$Ar^{14+} + Ar$
32235 E

$Ar^{18+} + Ar$
32235 E

$Ar^{14+} + Ar$
32235 E

$Ar^{14+} + Xe$
31959 E

$Ar^{18+} + Xe$
31959 E

$Ar^{17+} + Xe$
31959 E

$Au^{0+} + He$
33065 E

$Au^{0+} + He$
32221 T 33065 E

$Au^{7+} + He$
32221 T 33065 E

$Au^{0+} + He$
32221 T 33065 E

$Au^{0+} + He$
32221 T 33065 E

$Au^{10+} + He$
32221 T 33065 E

$Au^{14+} + He$
32221 T 33065 E

$Au^{18+} + He$
32221 T 33065 E

$Au^{14+} + He$
32221 T 33065 E

$Au^{14+} + He$
32221 T 33065 E

$Au^{17+} + He$
32221 T 33065 E

$Au^{18+} + He$
32221 T 33065 E

$Au^{14+} + Ar$
33065 E

$Au^{14+} + O_{2}$
33065 E

$Au^{14+} + He$
32192 E 32221 T 33065 E

$Au^{14+} + He$
32221 T 33065 E

$Au^{17+} + He$
32221 T 33065 E

$Au^{18+} + He$
32221 T 33065 E

$Au^{14+} + He$
32221 T 33065 E

$Au^{0+} + He$
32221 T 33065 E

$Au^{0+} + He$
32221 T

$Au^{14+} + He$
32221 T

$Au^{14+} + He$
32221 T

$Au^{14+} + He$
32221 T

$Au^{14+} + He$
32221 T

$B^{0+} + He$
32486 E

$Ba^{0+} + Ar$
32921 T

$Bi + Ge$
32328 E

$Bi + Si$
32328 E

$Bi + Rb$
32328 E

$Bi + Se$
32328 E

$Bi + I$
32328 E

$Bi^{0+} + Kr$
32328 E

$Bi^{0+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{17+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

$Bi^{14+} + Kr$
32328 E

REACTANT IONS

Be^{+} + Kr
02928 E

Be^{++} + Kr
02928 E

Be^{++} + Kr
02928 E

Be^{++} + Kr
02928 E

Be^{++} + Kr
02928 E

Be^{++} + Kr
02928 E

Be^{++} + Kr
02928 E

C + H
02232 E

C^{+} + Ar
02921 T 02921 T 02923 E

C^{+} + Be
02921 T

C^{+} + Be
02919 E

C^{+} + C
02613 E

C^{+} + Dy
02921 T

C^{+} + Er
02923 E

C^{+} + H
02117 T

C^{+} + He
02117 T

C^{+} + Sn
02923 E

C^{+} + U
02921 T

C^{++} + Ar
03365 E

C^{++} + H
02117 T

C^{++} + He
02117 T

C^{++} + H
02117 T

C^{++} + He
02117 T

C^{++} + Ar
01981 E

C^{++} + H
02117 T

C^{++} + He
01981 E 02117 T

C^{++} + Kr
01981 E

C^{++} + Ne
01981 E

C^{++} + Ar
01981 E

C^{++} + H
02117 -

C^{++} + He
01981 E 02117 T

C^{++} + Kr
01981 E

C^{++} + He
01981 E

C^{++} + Ar
01981 E 02472 T 02899 T

C^{++} + H
02117 T

C^{++} + He
01981 E 02117 T 02486 E

C^{++} + Kr
01981 E

C^{++} + Ne
01981 E 02917 T

Ca + Tl
02928 E

Cl^{+} + Pb
02911 T

CO^{+} + C
02613 E

Cu + Mo
02952 E

Cu + O_2
02952 E

D^{+} + Al
02894 T

D^{+} + As
02921 T 02923 E

D^{+} + Ca
02894 T

D^{+} + Er
02923 E

D^{+} + Hf
02913 T

D^{+} + Se
02923 E

D^{+} + Ti
02894 T

F + H
02232 E

F^{+} + Ne
02911 T

F^{++} + Ar
03365 E

F^{++} + C
02678 E

F^{++} + Ar
01981 E

F^{++} + Ne
01981 E

F^{++} + Kr
01981 E

F^{++} + Ne
01981 E

F^{++} + Ar
01981 E 02472 T 02899 T

F^{++} + C
02678 E

F^{++} + Ne
01981 E

F^{++} + Kr
01981 E

F^{++} + Ne
01981 E

H^{+} + C^{+}
01998 T

H^{+} + D^{+}
01998 T

H^{+} + + Ne
02897 E

H^{+} + Ag
01968 E 02551 E-T 02911 T
02921 T 03011 T

H^{+} + Al
01862 E-T 02121 T 02431 E
02807 E 02894 T 02916 T

H^{+} + Ar
01816 E 01877 E 02107 E
02227 E 02321 E-T 02472 T
02899 T

H^{+} + As
02222 E 02383 T 02432 E
02897 E 02898 E 02933 E
02911 T 02923 T 02921 T
02921 T 02922 E-T 02922 E-T

H^{+} + Be
02895 E 02896 E

H^{+} + Br
02895 E

H^{+} + C
01862 E-T

H^{+} + Co
02896 E

H^{+} + CH_4
02395 T

H^{+} + CO
01862 E-T

H^{+} + Cs
02895 E

H^{+} + Cu
01862 E-T 01926 T 01968 E
02807 E 02894 T 02895 E

REACTANT INDEX

REACTANT INDEX

$Kr^{**} + Ba$
01919 E

$Kr^{**} + Be$
01919 E

$Kr^{**} + Ba$
01919 E

$Kr^{**} + Be$
01919 E

$Kr^{**} + Be$
01919 E

$Kr^{**} + Be$
01919 E

$Kr^{**} + Be$
01919 E

$Kr^{**} + Be$
01919 E

$Kr^{2+} + Be$
01919 E

$Li^{*} + Au$
02921 T

$Li^{*} + Li^{*}$
01854 E

$H^{*} + Au$
01792 E 02921 T 02921 T
02923 E

$H^{*} + Ba$
02921 T

$H^{*} + Be$
02919 E

$H^{*} + Dy$
02921 T

$H^{*} + Er$
02923 E

$H^{*} + H$
02117 T

$H^{*} + He$
02117 T

$H^{*} + Sm$
02923 E

$H^{*} + U$
02921 T

$H^{**} + H$
02117 T

$H^{**} + He$
02117 T

$H^{3+} + H$
02117 T

$H^{3+} + He$
02117 T

$H^{**} + H$
02117 T

$H^{**} + Be$
02117 T

$H^{**} + Ar$
01981 E

$H^{**} + H$
02117 T

$H^{**} + He$
01981 E 02117 T

$H^{**} + Kr$
01981 E

$H^{**} + Ne$
01981 E

$H^{**} + H_2$
01831 E

$H^{**} + He$
01831 E 01981 E 02117 T
02257 E

$H^{**} + Kr$
01981 E

$H^{**} + Ne$
01981 E

$H^{2+} + Ar$
01981 E

$H^{2+} + H$
02117 T

$H^{2+} + H_2$
01838 E

$H^{2+} + He$
01838 E 01981 E 02117 T

$H^{2+} + Kr$
01981 E

$H^{2+} + Ne$
01981 E

$Ne^{*} + He$
02639 T

$Ne^{*} + Ne^{*}$
02237 E 02619 E

$Ne^{*} + Xe$
02639 T

$He^{*} + Ar$
01863 E-T

$He^{*} + Au$
02921 T

$He^{*} + Ba$
02921 T

$He^{*} + Be$
02919 E

$He^{*} + Dy$
02921 T

$He^{*} + He$
02126 E-T

$He^{*} + U$
02921 T

$He^{*} + Ar$
02627 T

$He^{*} + Cs$
02627 T

$He^{*} + H$
02627 T

$He^{*} + K$
02627 T

$He^{*} + Kr$
02627 T

$He^{*} + Li$
02627 T

$He^{*} + Na$
02627 T

$He^{*} + Be$
02627 T

$He^{*} + He^{*}$
02135 E

$He^{*} + O_2$
01782 E

$He^{*} + Rb$
02627 T

$He^{*} + Xe$
02627 T

$He^{2+} + Ar$
01863 E-T

$He^{2+} + Ba$
01919 E

$He^{2+} + Ic$
01797 E

$He^{2+} + Ba$
01919 E

$He^{2+} + Ba$
01919 E

$He^{2+} + Be$
01919 E

$He^{2+} + Be$
01919 E

$He^{2+} + Be$
01919 E

$He^{2+} + Be$
01919 E

$O + Gd$
02202 E

$O + Th$
02202 E

$O + U$
02202 E

$O^{*} + Ag$
01968 E

$O^{*} + Au$
02921 T

$O^{*} + Be$
02919 E

$O^{*} + Cu$
01968 E

$O^{*} + H$
02117 T

$O^{*} + Be$
02117 T

$O^{*} + O_2$
02126 E-T

REACTANT INDEX

O^{+} + Pb
31968 E

O^{+} + PENT
32911 T

O^{+} + Xe
31968 E

O^{2+} + H
32117 T

O^{2+} + He
32117 T

O^{2+} + H
32117 T

O^{2+} + He
32117 T

O^{2+} + Ar
33065 E

O^{3+} + H
32117 T

O^{3+} + He
32117 T

O^{4+} + H
32117 T

O^{4+} + He
32117 T

O^{4+} + Ar
31981 E

O^{4+} + H
32117 T

O^{4+} + He
31981 E 32117 T

O^{4+} + Kr
31981 E

O^{4+} + He
31981 E

O^{5+} + Ar
31981 E

O^{5+} + H
32117 T

O^{5+} + He
31981 E 32117 T

O^{5+} + Kr
31981 E

O^{5+} + He
31981 E

O^{6+} + Ar
31981 E

O^{6+} + H
32117 T

O^{6+} + He
31981 E 32117 T 32486 E

O^{6+} + Kr
31981 E

O^{6+} + He
31981 E

Rb^{0} + CO
32639 T

S^{0} + Ar
32919 E 32921 T

S^{0} + Ne
32921 T

S^{0} + Ny
32921 T

S^{0} + H
32921 T

Si^{0} + Ar
32919 E

Si^{2+} + He
32328 E

Si^{3+} + Al
32328 E

Si^{3+} + He
32328 E

Si^{4+} + He
32328 E

Si^{5+} + He
32328 E

Si^{6+} + He
32328 E

Si^{7+} + He
32328 E

Si^{8+} + He
32328 E

Si^{9+} + He
32328 E

Si^{10+} + He
32328 E

Si^{11+} + C
32678 E

Si^{12+} + C
32678 E

Si^{14+} + Ar
32472 T 32899 T

Si^{14+} + C
32678 E

U^{+++} + Ar
32567 E

U^{73+} + Ar
32583 E

U^{+++} + Cu
32131 E

U^{+++} + Ta
32131 E

U^{91+} + Cu
32131 E

U^{91+} + Ta
32131 E

Xe^{0} + Cu
32627 T

Xe^{0} + K
32627 T

Xe^{0} + Li
32627 T

Xe^{0} + Na
32627 T

Xe^{0} + Rb
32627 T

Xe^{0} + Xe
32627 T

Xe^{0} + Xe^{0}
31868 E

Xe^{2+} + Ar
31919 E

Xe^{2+} + He
31919 E

Xe^{3+} + He
31919 E

Xe^{4+} + He
31919 E

Xe^{5+} + He
31919 E

Xe^{6+} + He
31919 E

Xe^{7+} + He
31919 E

Xe^{8+} + He
31919 E

Xe^{9+} + He
31919 E

Xe^{10+} + He
31919 E

Xe^{11+} + He
31919 E

Xe^{12+} + He
31919 E

Xe^{13+} + He
31919 E

Xe^{14+} + He
31919 E

Review
32903 E-T 32918 T

Undef
31786 T 31988 T 32771 T
32914 T

REACTANT INDEX

A00

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Stripping

A09

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Recombination or Mutual Neutralization Leading to Neutral Products (ion-ion)

REACTANT INDEX

REACTANT INDEX

A12

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Collisional Line Broadening

REACTANT INDEX

$Ar + O_2$
02006 E

Ba + Ar
03056 E

Ba + Be
03056 E

Ba + Kr
03056 E

Ba^0 + Ar
02055 E

Ba^0 + Be
02055 E

Ca + Kr
02512 E

$CO^+ + CO_2$
02611 E 02618 E

$CO^+ + H_2O$
02611 E 02618 E

Cs + Ar
02025 E 02026 E

Cs + Be
02025 E

Cs + Kr
02025 E 02026 E

Cs + Be
02025 E

Cs + Xe
02521 E-T

Cs^0 + Ar
01857 E 02582 E

Cs^0 + Be
01857 E 02582 E

$Cs^0 + Kr$
01857 E 02582 E

Cs^0 + Be
01857 E 02582 E

Cs^0 + Xe
01857 E 02582 E

$E^+ + Be$
02613 T

$H_2 + H_2$
02558 T

Ke + Ar
02568 T

Ke + Be
02568 T

Ke + Kr
02568 T

Ke + Be
02568 T

Ke + Xe
02568 T

Hg + Ar
02199 E

Hg + Kr
02199 E

K + Rb
02200 E

Kr^0 + Kr
02126 E-T

$N_2 + O_2$
02006 E

Na + Ar
02522 E-T

Na + Cs
02017 E

Na + Be
02522 E-T

Na + K
02017 E

Na + Kr
02522 E-T

Na + Rb
02017 E

Na + Be
02522 E-T

Na^0 + Ar
02454 T 02582 E

Na^0 + Be
02454 T 02582 E

Na^0 + Kr
02454 T 02582 E

Na^0 + Be
02582 E

Na^0 + Xe
02454 T 02582 E

Na^0 + Be
02126 E-T

$O_2 + O_2$
02006 E

$O_2 + O_2$
02006 E

Rb + Be
02522 E-T

Rb + Xe
02522 E-T

Rb^0 + Ar
01857 E

Rb^0 + Be
01857 E

Rb^0 + Kr
01857 E

Rb^0 + Be
01857 E

Rb^0 + Xe
01857 E

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HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Heavy Particle Interchange (must involve some form of hydrogen or helium)

REACTANT 1 ET

$C^+ + H_2$
02303 E

$CH + O_2$
02616 T

$CH^+ + H$
02106 E

$CH^+ + H_2$
02136 E

$CH_2 + O_2$
02533 E

$CH_2^+ + H_2$
02138 E

$CO^+ + H_2$
02136 E

$CO_2^+ + H$
02080 E

$D + H_2^+$
02958 E 02959 T

$DO^- + H_2O$
02011 E

$DO^- + H_2$
02011 E

$DO^- + HD$
02011 E

$F + D_2$
01779 T 02304 T 02729 T

$F + H_2$
01924 T 01925 T 02729 T

$F + HD$
02729 T

$Fe^+ + H_2$
02312 E

$H + CH_4$
02136 E

$H + D_2$
02087 E 02285 T 02286 T

$H + H_2O$
02344 E 02728 T

$H + H_2$
02333 T

$H + O_2$
01785 T

$H_2 + CH$
02364 E

$H_2^+ + He$
02391 T 02730 E

$HD^+ + He$
02708 E

$HO^- + D_2O$
02311 E

$HO^- + D_2$
02311 E

$HO^- + HD$
02011 E

$O + CH_4$
02363 T

$O + D_2$
02313 T

$O + H_2$
01777 T 02085 T 02310 T

$O + OH$
02616 T

$O^+ + H_2$
02106 E 02255 T

$OH^+ + Ar$
02062 E

$OH^+ + CH_4$
02362 E

$OH^+ + CH_4$
02062 E

$OH^+ + CO_2$
02062 E

$OH^+ + H_2O$
02362 E

$OH^+ + H_2O$
02062 E

$OH^+ + H_2$
02062 E

$OH^+ + He$
02362 E

$OH^+ + H_2$
02062 E

$OH^+ + O_2$
02062 E

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HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Electron Detachment from Negative Ions into Continuum

$Cl^- + Ar$
02111 E

$Cl^- + He$
02111 E

$Cl^- + Kr$
02111 E

$Cl^- + Ne$
02111 E

$Cl^- + Xe$
02111 E

$Br^- + Ar$
32168 E

$Br^- + He$
32168 E

$F^- + Ar$
01937 E

$F^- + CO_2$
02252 E

$F^- + D_2$
02252 E

$F^- + He$
01937 E

$F^- + Kr$
01937 E

REACTANT INDEX

$F^- + H_2$
32252 E

$F^- + Ne$
01937 E

$F^- + O_2$
32252 E

$F^- + Xe$
01937 E

$H^- + Ar$
31895 E 32168 E 32231 E
02226 E 02228 E

$H^- + CO_2$
31839 E 32231 E

$H^- + Cs$
31832 E

$H^- + H^+$
31831 T

$H^- + H_2$
32231 E

$H^- + He$
31895 E 32137 E-T 32168 E
32231 E 32223 E 32228 E
32277 T

$H^- + N_2$
32231 E

$H^- + Ne$
31895 E 32223 E

$H^- + O$
31867 E

$H^- + O_2$
31867 E 32231 E

$I^- + Ar$
32630 E

$I^- + He$
32630 E

$I^- + Kr$
32630 E

$I^- + Ne$
32630 E

$I^- + Xe$
32630 E

$K^- + Ar$
32223 E

$K^- + He$
32223 E

$K^- + Ne$
32223 E

$Li^- + Ar$
32223 E

$Li^- + He$
32223 E

$Li^- + Ne$
32223 E

$Na^- + Ar$
32223 E

$Na^- + He$
32223 E

$Na^- + Ne$
32223 E

Undef
31933 T 31931 T

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HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Interaction Potentials

Al + Al
02675 T

Ar + Ar
01788 T 01858 T 01859 T
02675 T 02731 T

Ar + Kr
02731 T

Ar + Xe
02731 T

Ar* + Ar
02317 E-T

Br⁻ + Ar
02306 T

Br⁻ + Br
01781 T

Br⁻ + Kr
01781 T

Cd + Ar
02210 T

Cd + Kr
02210 T

Cd + Xe
02210 T

Cl⁻ + Ar
02306 T

Cl⁻ + Br
01781 T

Cl⁻ + Kr
01781 T

Co + H_2
02308 T

Cs + Br
02112 T

Cs + Cl
02112 T

Cs + F
02112 T

Cs + I
02112 T

Cs + Xe
02521 E-T

Cs⁺ + Ar
02306 T

Cs⁺ + Br
01781 T

Cs⁺ + Kr
02306 T

Cs⁺ + Kr
01781 T

REACTANT INDEX

Cs⁺ + Xe
02336 T

Cu + Cu
02675 T

Cu + H_2
02338 T

D_2 + Ar
02396 E-T

F + D_2
02729 T

F + H_2
01778 T 02302 T 02729 T

F + HD
02729 T

Fe + H_2
02338 T

H + Cs
02373 T

H + He
02203 E

H_2 + Ar
02731 T

H_2 + CO
02092 T

H_2 + D_2
02739 T

H_2 + H_2
02739 T

H_2 + He
02731 T

H_2 + Ne
02731 T

H_2^+
02396 T 02596 T

H_2O + H_2O
02312 T

H_2
0 780 T 02396 T

He + Ar
02731 T

He + H_2
02353 T

He + He
02389 T 02618 T 02731 T

He + Kr
02731 T

He + Ne
02731 T

He + O_2
02737 T

He + Xe
02731 T

Hg + Ar
02199 E

Hg + Kr
02199 E

K + Ar
02513 E-T

K + Br
02112 T

K + Cl
02112 T

K + F
02112 T

K + I
02112 T

K + Rb
02200 E

K⁺ + Ar
02336 T

K⁺ + CO
02105 T

K⁺ + CO_2
02105 T

K⁺ + H_2O
02105 T

K⁺ + H_2
02105 T

K⁺ + He
01781 T

K⁺ + Kr
02336 T

K⁺ + N_2
02105 T

K⁺ + Ne
01781 T

K⁺ + NO
02105 T

K⁺ + O_2
02105 T

K⁺ + OH
02105 T

Kr + Kr
01788 T 02731 T

Kr + Xe
02731 T

Kr⁺ + Kr
02126 E-T

Li + Br
02112 T

Li + Cl
02112 T

Li + F
02112 T

Li + I
02112 T

Li⁺ + Ar
02336 T

Li⁺ + He
01781 T 02317 T 02618 T

Li⁺ + Kr
02336 T

REACTANT INDEX

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HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Angular Scattering

Ar^{0} + Ar
32317 E-T

Br + Ge
02020 E

Br + Si
02020 E

Br + Sb
02020 E

Br + Se
02020 E

Br + Y
02020 E

Br^{0+} + Kr
02020 E

Br^{0+} + Kr
02020 E

Br^{0+} + Kr
02020 E

Br^{1+} + Kr
32320 E

Br^{2+} + Kr
32320 E

Br^{3+} + Kr
32320 E

Br^{4+} + Kr
02020 E

Br^{5+} + Kr
02020 E

Br^{6+} + Kr
02020 E

Br^{7+} + Kr
02020 E

Br^{8+} + Kr
02020 E

Br^{9+} + Kr
02020 E

Br^{0+} + Kr
02020 E

Br^{1+} + Kr
02020 E

Br^{2+} + Kr
02020 E

Br^{3+} + Kr
02020 E

Br^{4+} + Kr
02020 E

Br^{5+} + Kr
02020 E

Br^{6+} + Kr
02020 E

REACTANT INDEX

Br^{2+} + Kr
32320 E

Br^{0+} + Kr
32320 E

Ca + Si
32320 E

D^{-} + Ar
32160 E

D^{-} + He
32160 E

F + H_2
01926 T 01925 T

H + H_2
02300 T

H + He
02103 E

H^{+} + Ar
02031 T 02227 E 02373 T

H^{+} + C
02201 T 03057 E

H^{+} + CH_4
02095 T

H^{+} + H
01793 T 01896 E 02107 T
32452 T 32691 T 32692 T

H^{+} + H^{0}
32492 T

H^{+} + H_2O
32595 T

H^{+} + H_2
32149 E-T 32160 T 32322 E-T
02048 E

H^{+} + He
31995 T 32169 E-T 32227 E
02322 E-T

H^{+} + Ne
02227 E 02201 T 02078 T

H^{-} + Ar
02160 E

H^{-} + He
02160 E 02277 T

H_2^{+} + C
03057 E

H_2^{+} + H
02172 E-T

H_2^{+} + C
03057 E

H_2^{+} + He
02391 E

He + H_2
02020 T

He + He
02078 E

He + H_2^{+}
02097 T

He^{+} + C
03057 E

He^{+} + H_2
31979 T

He^{+} + Kr
32269 E

He^{+} + Kr
32462 E

He^{+} + Xe
32462 E

He^{2+} + He
32165 T

Kr^{+} + Kr
01996 E

Kr^{+} + Xe
01996 E

Li^{+} + Li
02242 T

Li^{+} + Na
01984 T

N^{+} + Ar
01792 E

N_2 + He
02093 T

Na + S
02287 E

Na^{+} + Li
31984 T

Na^{+} + Na
32236 T 33361 T

Ne^{+} + Xe
31935 T

Si + Pb
02010 T

S + Pb
02010 T

S^{+} + Ar
02979 E

Si^{+} + Ar
02979 E

Si^{0+} + He
02028 E

Si^{2+} + Al
02028 E

Si^{2+} + He
02028 E

Si^{0+} + He
02028 E

Si^{0+} + He
02028 E

Si^{0+} + He
02028 E

Si^{7+} + He
02028 E

Si^{0+} + He
02028 E

Si^{0+} + He
02028 E

REACTANT INDEX

Si^{8+} + Ne
    02028 E

Undef
    31936 T   32036 T

A20

HEAVY PARTICLE - HEAVY PARTICLE
INTERACTIONS

Attenuation (unspecified process)

He^{*} + Ar
    31864 E

He^{*} + He
    31844 E

Undef
    32116 T

C02

PARTICLE PENETRATION IN MACROSCOPIC MATTER (IONS, NEUTRALS, AND ELECTRONS)

Energy Loss and Stopping Power

Al + C
02121 T

Al + Li
02121 T

Al+ + C
03013 T

Al+ + Ta
02758 T

Ar+ + C
03013 T

B+ + Ag
02770 E-T

B+ + Al
02770 E-T

B+ + Au
02762 E 02770 E-T

B+ + Bi
02762 E 02770 E-T

B+ + C
02770 E-T 03013 T

B+ + Cr
02770 E-T

B+ + Cu
02770 E-T

B+ + Dy
02762 E

B+ + Fe
02770 E-T

B+ + In
02762 E

B+ + La
02762 E

B+ + Lu
02762 E

B+ + Nd
02762 E

B+ + Ni
02770 E-T

B+ + PMMT
02761 E

B+ + Pt
02762 E 02770 E-T

B+ + Re
02762 E

B+ + Ta
02762 E

B+ + Tb
02762 E

B+ + V
02770 E-T

REACTANT INDEX

B+ + Zn
02770 E-T

Be+ + Ag
02770 E-T

Be+ + Al
02770 E-T

Be+ + Au
02762 E 02770 E-T

Be+ + Bi
02762 E 02770 E-T

Be+ + C
02770 E-T 03013 T

Be+ + Cr
02770 E-T

Be+ + Cu
02770 E-T

Be+ + Dy
02762 E

Be+ + Fe
02770 E-T

Be+ + In
02762 E

Be+ + La
02762 E

Be+ + Lu
02762 E

Be+ + Nd
02762 E

Be+ + Ni
02770 E-T

Be+ + Pt
02762 E 02770 E-T

Be+ + Re
02762 E

Be+ + Ta
02762 E

Be+ + Tb
02762 E

Be+ + V
02770 E-T

Be+ + Zn
02770 E-T

C + C
02121 T

C + Li
02121 T

C+ + C
02768 E 02797 E 02935 T
03013 T

C+ + Ni
02935 T

C+ + C
02369 E

C++ + C
02272 T

C++ + C
02272 T 02369 E

Ca+ + C
03013 T

Cl+ + Al
02935 T

Cl+ + C
02935 T 03013 T

Cl11+ + C
02938 E

Cl16+ + C
02938 E

Cl17+ + C
02938 E

Co+ + C
02797 E

Co+ + C
03013 T

Cr+ + C
03013 T

Cu + Cu
02976 T

Cu+ + C
03013 T

Cu+ + Cu
02668 T

D+ + Ag
02736 E 02776 E

D+ + Ar
02776 E

D+ + CD_4
02121 T 02123 T

D+ + Cu
02763 E 02776 E

D+ + Ni
02668 T

e + Al
02938 T 02935 T 02367 T
02526 T

e + Au
02935 T 02526 T

e + C
02938 T 02813 T 02982 T

e + Cu
02938 T 02935 T 02367 T
02526 T

e + GaAsP
02682 E

e + Si
02035 T

e + Xe
01867 T

Fe+ + C
03013 T

Ga+ + C
03013 T

Ge+ + C
03013 T

H+ + Ag
02148 E 02736 E 02770 E-T

REACTANT INDEX

REACTANT INDEX

REACTANT INDEX

H + Pb
01866 E-T

H + Sn
01866 E-T

H + Ti
01866 E-T

H + V
01866 E-T

H + Zr
01866 E-T

H* + C
33313 T

H + Ag
01866 E-T

H + Au
01866 E-T

H + C
01866 E-T

H + Cu
01866 E-T

H + Hf
01866 E-T

H + Hg
01866 E-T

H + Mo
01866 E-T

H + Bi
01866 E-T

H + Pb
01866 E-T

H + Sn
01866 E-T

H + Ti
01866 E-T

H + V
01866 E-T

H + Zr
01866 E-T

He + Ag
01866 E-T

He + Au
01866 E-T

He + C
01866 E-T

He + Cu
01866 E-T

He + Hf
01866 E-T

He + Hg
01866 E-T

He + Mo
01866 E-T

He + Bi
01866 E-T

He + Pb
01866 E-T

He + Sn
01866 E-T

He + Ti
01866 E-T

He + V
01866 E-T

He + Zr
01866 E-T

He* + H
32668 T

He* + C
33313 T

Review
32908 T

Undef
32110 T 32275 T 32636 T
02771 T 02992 T

C03

PARTICLE PENETRATION IN MACROSCOPIC MATTER (IONS, NEUTRALS, AND ELECTRONS)

Energy to Create an Ion Pair

Pb Si
02783 E-T

Undef
02787 T

Kr* + Si
02783 E-T

REACTANT INDEX

C08

PARTICLE PENETRATION IN MACROSCOPIC MATTER (IONS, NEUTRALS, AND ELECTRONS)

Particle Range

Al^+ + Ge
02755 E

Al^+ + Si
02755 E

Al^+ + Zn
02758 T

B^+ + Si
03303 T

C^+ + Ge
02755 E

C^+ + Si
02755 E

D_2^+ + CO
02778 E

D_2^+ + O_2
02778 E

D_3^+ + CO
02778 E

D_3^+ + O_2
02778 E

e + Al
02008 T 02347 T 02526 T

e + Au
02526 T

e + C
02003 T

e + Cu
02008 T 02347 T

e + D_2O
02556 E

e + H_2O
02556 E

e + H_2
02730 T

H^+ + GaAlAs
01775 E

H_2^+ + CO
02778 E

H_2^+ + O_2
02778 E

H_3^+ + CO
02778 E

H_3^+ + O_2
02778 E

He^+ + Al
02745 E

He^+ + Au
02885 E

He^+ + Nb
02885 E

He^{2+} + Au
02972 T

He^{2+} + C
02972 T

Mg^+ + Ge
02755 E

N^+ + Cu
02886 E

N^+ + Ge
02755 E

N^+ + Si
02755 E

N_2^+ + Ag
02664 E

N_2^+ + Al
03334 E

N_2^+ + Cu
02664 E 03004 E

N_2^+ + HF
03004 E

N_2^+ + Be
03004 E

N_2^+ + Si
02809 E

N_2^+ + SS
02808 E 03004 E

N_2^+ + Ti
03334 E

N_2^+ + W
03334 E

P^+ + Si
03303 T

Pb^+ + Al
02758 T

$PMMT^+$ + Al
03302 T

$PMMT^+$ + Ge
02654 T

$PMMT^+$ + Si
02654 T 02604 T 03302 T

S^+ + Si
01776 E

Sb^+ + Si
03303 T

Xe^+ + W
02772 T

C05

PARTICLE PENETRATION IN MACROSCOPIC MATTER (IONS, NEUTRALS, AND ELECTRONS)

Multiple Scattering

Br^{+} + Au
32759 E

C^{+} + C
32613 E

Cl^{+} + Au
32759 E

CO^{+} + C
32613 E

e + Al
02347 T

e + C
02610 T

e + Cu
02347 T

F^{++} + C
32678 E

F^{++} + C
32678 E

F^{++} + C
32678 E

Fe^{+} + Au
32759 E

Ge^{+} + Au
32759 E

H^{+} + C
32782 T

REACTANT INDEX

H^{+} + Al
32783 E 32782 T

H^{+} + Ar
32926 E

H^{+} + C
32783 E

H^{+} + Cu
32782 T

H^{+} + D_2
32926 E

H^{+} + H_2
32926 E

H^{+} + He
32926 E

H^{+} + N_2
32926 E

H^{+} + PERT
01920 T

H_2^{+} + C
02766 E 02767 T 03009 E-T

He^{+} + Al
32745 E 32783 E 32782 T

He^{+} + C
32783 E 32782 T

He^{+} + Cu
32782 T

He^{+} + Ta_2O_5
32784 E

HeH^{+} + C
32767 T 33339 E-T

H^{+} + Cu
32886 E

Ha^{+} + Al
32782 T

Ha^{+} + C
32782 T

Ha^{+} + Cu
32782 T

Hb^{+} + Au
32759 E

Hi^{+} + Ag
32759 E

Hi^{+} + Al
32759 E

Hi^{+} + Au
32759 E

Hi^{+} + Cu
32759 E

$PERT^{+}$ + Ie
02781 T

Si^{+} + Au
02759 E

Si^{++} + C
32678 E

Si^{++} + C
32678 E

Si^{++} + C
32678 E

Ti^{+} + Au
32759 E

Undef
32633 T

C06

PARTICLE PENETRATION IN MACROSCOPIC MATTER (IONS, NEUTRALS, AND ELECTRONS)

Charge State Population

Al + C
02121 T

B* + C
32842 T

Be* + C
32792 E

C + Be
02121 T

C + Li
02121 T

C + H_2
02155 E

C + He
02155 E

C* + C
02813 E 02842 T 02930 E

C* + H_2
02155 E

C* + He
02155 E

C* + O_2
02930 E

C2* + H_2
02155 E

C2* + He
02155 E

C3* + H_2
02155 E

C3* + He
02155 E

C4* + C
01[illegible] E

C5* + C
01816 E 02800 E

C6* + C
01816 E 32122 E-T

CH* + C
01921 E

Cl + Ag
01863 E

Cl + Al
01863 E

Cl + Au
01863 E

Cl + Be
01863 E

Cl + Bi
01863 E

Cl + C
01863 E

REACTANT INDEX

Cl + Cr
31863 E

Cl + Cu
31863 E

Cl + Fe
31863 E

Cl + Ge
31863 E

Cl + HCl
31863 E

Cl + Hg
31863 E

Cl + Ho
31863 E

Cl + In
31863 E

Cl + Pb
31863 E

Cl + Se
01863 E

Cl + Sn
01863 E

Cl + Sn
01863 E

Cl + Te
01863 E

Cl + Ti
01863 E

Cl + Yb
01863 E

Cl + Zr
01863 E

Cl* + C
02930 E

Cl* + O_2
02930 E

Cl10* + C
02861 E

Cl11* + C
02861 E 02908 E

Cl12* + C
02861 E

Cl13* + C
02861 E 02908 E

Cl14* + C
02861 E

Cl15* + C
02800 E 02861 E

Cl17* + C
02861 E 02908 E

CO* + C
02813 E

Cs + CH_3
02121 T

D* + C
02851 E

D_2* + Ar
31989 E

D_2* + H_2
31989 E

F** + C
32678 E

F** + C
32678 E

F** + FHET
31906 E

F** + C
32678 E

F** + FHET
31906 E

H + C
32833 E

H* + Al
32646 T

H* + C
02929 E

H* + Cu
01832 E

H- + Ba
01918 E

H_2* + C
02766 E 02803 E

H_3* + C
02803 E

He* + C
02803 E 02928 E

He2* + Al
02666 T

Li* + Al
02838 T

Li* + Au
02838 T

Li* + Sn
02838 T

N + Ar
02155 E

N + H_2
02155 E

N + He
02155 E

N + O_2
02155 E

N* + Ar
02155 E

N* + C
02928 E

N* + H_2
02155 E 02842 T

N* + He
02155 E

N* + O_2
02155 E

REACTANT INDEX

C07

PARTICLE PENETRATION IN MACROSCOPIC MATTER (IONS, NEUTRALS, AND ELECTRONS)

Excited State Population

Ar^{**} + Al
02753 E

Ar^{**} + Mg
02753 E

Ar^{**} + Si
02753 E

D* + C
32051 E

E + C
32833 E

H* + As
32815 T 32793 T

H* + C
31934 E 31951 E 32329 E
32815 T 32832 E

H_2^+ + C
31934 E 31951 E 32329 E
32832 E 32833 E

H_2^+ + C
31951 E 32329 E 32832 E

02883 E

Be^+ + C
31934 E 32833 E

BeH^+ + C
31934 E

Be^+ + C
31934 E

Si^{++} + C
31934 E

Si^{++} + C
32188 E

D01

PARTICLE INTERACTIONS WITH SOLID SURFACES

General

E + Al
02719 T

E + B
02719 T

E + Be
02719 T

E + C
02719 T

E + Cu
02719 T

E + Fe
02719 T

E + Inconel
02719 T

E + Mo
02719 T

E + Ni
02719 T

E + Si
02719 T

E + SS
02719 T 02721 E 02722 T

E + Ta
02719 T

E + Ti
02719 T

E + V
02719 T

E + W
02719 T

E + Zr
02719 T

H_2 + D_2 + Pt
02303 E

Be^+ + Be
0.328 T

H + H
02883 T

H_2 + H
02883 T

Undef
02723 T 02822 T 02973 T

PARTICLE INTERACTIONS WITH SOLID SURFACES

Sputtering by Electrons, Neutrons, and Heavy Particles (total removal coefficients)

REACTANT INDEX

REACTANT INDEX

B03

PARTICLE INTERACTIONS WITH SOLID SURFACES

Sputtered Particle Charge and Quantum (Excited) State Distribution

Ar^{o} + Ag
02657 E 02701 E 02839 E

Ar^{o} + Al
02783 E 02864 E 03316 E
03322 E

Ar^{o} + Al_2O_3
02138 E

Ar^{o} + As
02839 E

Ar^{o} + B
02845 E

Ar^{o} + B_2O_3
02138 E

Ar^{o} + Ba
02845 E

Ar^{o} + BaO
02138 E

Ar^{o} + Bi_2O_3
02138 E

Ar^{o} + Ca
02353 E

Ar^{o} + CaO
02138 E

Ar^{o} + CaO_2
02138 E

Ar^{o} + Cd
02850 E

Ar^{o} + CoO
02138 E

Ar^{o} + Cr
02353 E 02657 E 02701 E

Ar^{o} + Cr_2O_3
02138 E

Ar^{o} + Cs
02657 E 02701 E 02839 E
03010 E 03014 E

Ar^{o} + CuSi
02398 E

Ar^{o} + CuO
02108 E

Ar^{o} + Fe
02352 E 02680 E

Ar^{o} + Fe_2O_3
02108 E

Ar^{o} + GaAs
02784 E-?

Ar^{o} + GeO_2
02108 E

Ar^{o} + H_2O
02850 E

Ar^{o} + In_2O_3
02138 E

Ar^{o} + InAs
02784 E-?

Ar^{o} + La_2O_3
02138 E

Ar^{o} + Mg
02845 E

Ar^{o} + MgO
02108 E

Ar^{o} + MnO
02138 E

Ar^{o} + MnO_2
02138 E

Ar^{o} + NH_3
02850 E

Ar^{o} + Ni
03316 E

Ar^{o} + NiO
02138 E 02873 E-?

Ar^{o} + O + Al
02864 E

Ar^{o} + PbO
02138 E

Ar^{o} + Pr_6O_{11}
02138 E

Ar^{o} + Si
02877 E

Ar^{o} + SiO_2
02138 E

Ar^{o} + Sn_2O_3
02138 E

Ar^{o} + SnO_2
02138 E

Ar^{o} + Ti
02752 E

Ar^{o} + TiO_2
02138 E

Ar^{o} + Y_2O_3
02108 E

Ar^{o} + ZnO
02138 E

Ar^{+} + ZnO
02108 E

Ar^{o} + Zr
02657 E 02701 E

Br^{oo} + Ce
02738 E

Br^{oo} + Sb
02738 E

Br^{oo} + Te
02738 E

C^{o} + Si
03048 E

CO^{o} + Si
03048 E

D^{o} + Zr
02337 ?

H^{o} + Au
02337 ?

H_2^{o} + CO
02850 E

H_2^{o} + H_2O
02850 E

H_2^{o} + NH_3
02850 E

He^{o} + CO
02850 E

He^{o} + H_2O
02850 E

He^{o} + NH_3
02850 E

He^{o} + NiO
02873 E-?

He^{o} + Ti
02752 E

He^{o} + Zr
02337 ?

In^{o} + Ag
03023 E

In^{o} + Al
03023 E

In^{o} + Au
03023 E

In^{o} + C
03023 E

In^{o} + Cd
03023 E

In^{o} + Co
03023 E

In^{o} + Cu
03023 E

In^{o} + Fe
03023 E

In^{o} + Ho
03023 E

In^{o} + In
03023 E

In^{o} + Mn
03023 E

In^{o} + Nb
02698 E 03023 E

In^{o} + Ni
02698 E 03023 E

In^{o} + O_2 + Sb
02698 E

In^{o} + O_2 + Si
02698 E

In^{o} + O_2 + Ti
02698 E

In^{o} + Pb
03023 E

REACTANT INDEX

REACTANT INDEX

D05

PARTICLE INTERACTIONS WITH SOLID SURFACES

Photoelectric Ejection of Electrons (coefficients)

hν + Ag
02763 T 03353 E

hν + Al
02763 T

hν + Au
02763 T 03353 E

hν + Cd
02763 T

hν + CsI
02763 T

hν + Cu
02763 T

hν + Dy
02113 E-T

hν + Er
02113 E-T

hν + Gd
02113 E-T

hν + Ge
02763 T

hν + In
02763 T

hν + Y
02113 E-T

D06

PARTICLE INTERACTIONS WITH SOLID SURFACES

Reflection of Electrons from Surfaces (coefficients)

e + Al
02526 T

e + Ar + Pt
02671 E

e + Au
02526 T

e + CO + Pt
02671 E

e + D_2
02929 E

e + H_2
02929 E

e + H_2 + Pt
02671 E

e + He
02929 E

Review
02630 E-T

Unref
02156 T 02157 T 02673 T

D07

PARTICLE INTERACTIONS WITH SOLID SURFACES

Reflection of Heavy Particles from Surfaces (total reflection coefficients)

REACTANT INDEX

D08

PARTICLE INTERACTIONS WITH SOLID SURFACES

Charge and Quantum State Distributions of Reflected Heavy Particles

Ar^{+} + Cu
02789 T 02835 E

Ar^{+} + H_2 + La
03041 E

Ar^{+} + H_2O + La
03041 E

Ar^{+} + La
03041 E

Ar^{+} + O_2 + La
03041 E

Ar^{+} + Yb
03041 E

D_2^{+} + Au
02813 E

H^{+} + Cu
02836 E

H_2^{+} + Cu
02836 E

H_2^{+} + Ni
02813 E

He^{+} + Au
02791 E

He^{+} + C
02789 T

He^{+} + Cs + Si
02661 E

He^{+} + Cu
02835 E 02837 E

He^{+} + Ge
02846 E

He^{+} + Ni
02837 E

He^{+} + Pb
02791 E

He^{+} + Si
02661 E

He^{+} + Tl
02791 E

Li^{+} + Cu
02835 E 02812 E

Li^{+} + H + Cs
02116 E

N^{+} + Ag
02813 E

N^{+} + Au
02813 E

N^{+} + Cu
02835 E

N^{+} + Yb
02813 E

N_2^{+} + Cu
02813 E

N^{2+} + Cu
02799 E

Na^{+} + Cu
02812 E

Ne^{+} + Cu
02812 E

O^{+} + Ti-Al
03027 E

Rb^{+} + Cu
02835 E

H + H
01773 E-T

H^{+} + H
01773 E-T

Undef
02849 T

D09

PARTICLE INTERACTIONS WITH SOLID SURFACES

De-Excitation, Neutralization, Ionization, or Dissociation of Particles Interacting with Surfaces

Ar^{+} + O + H
02815 E

Ar^{+} + H
02815 E

Ar^{2+} + O + H
02815 E

Ar^{2+} + H
02815 E

H + Cs
02350 T

H + Cs + H
02350 T

H_2^{+} + Ni
02931 E

H_2O^{+} + Cu
02818 E

He^{+} + Cs + Si
02661 E

He^{+} + Cu
02837 E

He^{+} + Ni
02821 E 02837 E

He^{+} + Si
02661 E 02840 E

He^{+} + CO + Ni
03315 E

He^{+} + NO + Ni
03315 E

N_2 + H
03337 E

N_2^{+} + Ni
02931 E

Ne^{+} + Na
02320 T

Ne^{+} + Cu
02818 E

Ne^{+} + GaAs
02827 E

Ne^{+} + Ni
02821 E

NO + Pt
02339 T

Xe^{2+} + O + H
02815 E

Xe^{2+} + H
02815 E

Undef
02662 T 02820 T 02849 T
02882 T 02961 T 03036 T

REACTANT INDEX

D11

PARTICLE INTERACTIONS WITH SOLID SURFACES

Sticking Coefficients, Thermal Energies and Adsorption

Ar + Li
03020 T

CO + Pt
02057 T

CO + Rh
02529 E

CO + Ti
03047 E

CO_2 + Ti
03047 E

D_2 + Ti
03047 E

e + CO + Ni
02528 E

H + Li
03020 T

H + Pt
02354 E-T

H_2 + Ag
02549 T

H_2 + Al
02549 T

H_2 + Ni
02357 E

H_2 + Pt
03035 E-T

H_2 + Rh
02529 E

H_2 + Ti
03047 E

H_2 + Zr
02697 E

He + Ag
02346 T

He + Al
02346 T

He + Au
02346 T

He + Cs
02346 T

He + K
02346 T

He + Li
02346 T 03023 T

He + Mg
02346 T

He + Na
02346 T

N_2 + Ni
02816 E

N_2 + Ti
03047 E

N_2 + W
02332 E

N_2^+ + C
02322 T

O_2 + Ni
02357 E

O_2 + Pt
02350 E

O_2 + Ti
03047 E

Rb + Cs
02743 E

Review
02602 E-T

Undef
03019 T

D12

PARTICLE INTERACTIONS WITH SOLID SURFACES

Electromagnetic Radiation Induced by Electron or Heavy Particle Impact on Surfaces

Ar^+ + Ni
02038 E

e + Al
02124 E 02125 E-T

e + Au
02124 E 02125 E-T

e + Cu
02124 E

e + H_2O + TiO_2
02662 E

e + Ir
02125 E-T

e + Pb
02125 E-T

e + Sb
02125 E-T

H^+ + Al
02121 T 02450 T 02893 E
02932 E

H^+ + Ni
01853 E

H^+ + C
02798 E 02932 E

H^+ + Mo
01853 E

H^+ + Pt
01853 E

H^+ + S
02931 E

H^+ + Sb
01853 E

H^+ + Ta
01853 E

H^+ + Te
01950 E

H^+ + W
01853 E

H_2^+ + C
02798 E

H_3^+ + C
02798 E

D13

PARTICLE INTERACTIONS WITH SOLID SURFACES

Desorption of Gases from Surfaces

REACTANT INDEX

D17

PARTICLE INTERACTIONS WITH SOLID SURFACES

Electron-, Ion-, and Photon-Induced Chemical Changes to Surfaces

REACTANT INDEX

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E01

ELECTRON-PARTICLE INTERACTION

General

Review
32563 E

E02

ELECTRON-PARTICLE INTERACTION

Elastic Collisions

- Ar
  01986 T 02141 E
- B^{++}
  01957 T
- Ba
  02559 E
- Be^{+}
  01957 T
- Bi
  02559 E
- CO
  01789 T 02235 T 03055 E
- CO_2
  02498 T 02518 T 03055 E
- Ca
  01822 T 02498 T 02558 T
- Cs
  02559 E
- H
  01962 T 01991 T 01997 T
  02051 T 02185 T 02273 T
  02365 T 02481 T 02536 T
  02640 T
- H_2O
  02141 E
- H_2
  01803 T 01922 T 01983 T
  01975 T 02054 T 02301 T
  02467 E 02518 T 02643 T
- He
  01986 T 01993 T 02141 E
  02146 T 02325 T 02327 E
  02493 T
- He^{+}
  01873 T
- He^{-}
  01957 T
- Hg
  01829 E 02022 T 02496 T
  02555 T
- Kr
  02231 T 02476 T
- Li
  01765 E-T 01957 T
- Na
  02559 E
- N_2
  01789 T 01922 T 01983 T
  01978 T 02153 T 02238 T
  02258 T 02519 T 03055 E
- Ne
  02328 E
- Ne
  01855 T 01968 E 01986 T
  02326 T 02493 T
- Ne^{++}
  01873 T
- Rb
  02232 E
- Tl
  02495 T 02496 T 02559 E
- Xe
  01829 E 01855 T 02231 T
- Zn
  02559 E

Undef
02158 T 02175 T

E03

ELECTRON-PARTICLE INTERACTION

Excitation

REACTANT INDEX

e + N
01769 E-T

e + Ne
01817 E 02254 E

e + Ne*
32280 T 32499 E

e + Xe
32333 E

Undef
31790 T 31947 T 32370 T
02507 T

E04

ELECTRON-PARTICLE INTERACTION

Dissociation

e + CO
03069 T

e + CO_2
02557 E

e + D_2
03069 T

e + H_2*
02691 T

e + N_2*
01881 T

e + H_2O
02073 E

e + H_2
03069 T

e + HD
03069 T

e + He_2*
02609 E

e + I_2
02638 E

e + N_2
02449 T 03069 T

E05

ELECTRON-PARTICLE INTERACTION

Ionization

e + Ag
01760 E

e + Ar
01039 E 01856 T 01967 T
02253 E 02331 E 02471 E
02612 E-T 02651 E

e + Ar^{+}
02632 E-T

e + Ar^{++}
01944 E-T

e + Au
03071 E

e + Ba
01902 E

e + Ba^{+}
02263 T

e + Ca
02233 T

e + Ca^{+}
02260 T

e + Cd
02139 T

e + CO_2
01821 E

e + Fe^{+}
02211 E

e + Fe^{++}
02593 T

e + Fe^{10+}
02593 T

e + Fe^{11+}
02593 T

e + Fe^{12+}
02593 T

e + Fe^{13+}
02593 T

e + Fe^{14+}
02593 T

e + Gd
02048 E

e + H
01873 T 01965 T 02176 E
02226 T 02273 T 02548 T
03051 T

e + H Sag**
02478 E

e + H_2
02154 T

e + He
01839 E 01892 T 01913 T
01967 T 02220 E 02259 E
02274 E 02477 E 02483 E-T
02519 T 02579 T

e + Kr^{++}
01944 E-T

e + Kr^{8+}
02634 E

e + Kr^{9+}
02634 E

e + Kr^{10+}
02634 E

e + Kr^{11+}
02634 E

e + N_2
02573 E

e + Ne
01839 E 01967 T 02508 T

e + Ne^{+}
02493 E

e + Sc^{3+}
02593 T

e + Sc^{4+}
02593 T

e + Sc^{5+}
02593 T

e + Sc^{6+}
02593 T

e + Sc^{7+}
02593 T

e + Sc^{8+}
02593 T

e + Sc^{9+}
02593 T

e + Sn
02048 E

e + Sr
02233 T

e + Ti^{3+}
02572 T

e + U^{+}
02208 E

e + Xe
02706 E

e + Xe^{+}
01843 E 01841 E 01944 E-T

e + Xe^{*}
02499 E

e + Xe^{2+}
01843 E 01841 E 01944 E-T

e + Xe^{3+}
01843 E 01841 E 01944 E-T

e + Xe^{4+}
01843 E 01841 E 01944 E-T

e + Yb
02127 E

e + Zn
02139 T

Undef
01932 T 02507 T 02644 T

N06

ELECTRON-PARTICLE INTERACTION

Recombination (electron-ion)

REACTANT INDEX

E07

ELECTRON-PARTICLE INTERACTION

Collisional De-Excitation

- e + Ar*
  32288 T

- e + Kr*
  31799 E

- e + Xe*
  31799 E 32099 E 32626 E

E08

ELECTRON-PARTICLE INTERACTION

Collisional Line Broadening

- e + H
  02609 T

- e + He
  32192 T 32613 E

- e + He*
  31673 T

- e + Hg**
  31673 T

E09

ELECTRON-PARTICLE INTERACTION

Negative Ion Formation

- e + CO_2
  02557 E

- e + H_2*
  31881 T

- e + H_2O
  02073 E

- e + N_2
  02734 E

- e + He
  32323 E

- e + H_2
  32449 T

- e + O_2 + Ar
  02307 E

- e + O_2 + CO_2
  32337 E 32338 E

- e + O_2 + O_2
  32337 E

- e + O_2 + H_2
  02307 E

- e + O_2 + He
  32337 E

- e + O_2 + Kr
  32337 E

- e + O_2 + H_2
  32337 E 32338 E

- e + O_2 + Ne
  02307 E

- e + O_2 + O_2
  32337 E

- e + O_2 + Xe
  02307 E

- e + O_2
  02338 E

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E11

ELECTRON-PARTICLE INTERACTION

Free-Free Transitions (Bremsstrahlung)

- e + C
  02170 E

- e + e
  02173 E

- e + He
  02587 E

- e + Hg
  01894 T

Undef
  02133 T

E16

ELECTRON-PARTICLE INTERACTION

Fluorescence and Luminescence

- e + Yb
  02127 E

E17

ELECTRON-PARTICLE INTERACTION

Angular Scattering (specified process)

- e + Ar
  01817 E 01986 T 02333 E
  02371 T 02651 E 03068 T

- e + Ba
  02559 E

- e + Bi
  02559 E

- e + Cd*
  01876 E

- e + CO
  01789 T 02384 T

- e + CO_2
  01821 E 02498 T

- e + Cs
  02494 T

- e + Cu
  02559 E

- e + D_2
  02234 E 02497 E

- e + H
  01870 T 01991 T 01997 T
  02351 T 02176 E 02273 T
  02365 T 02387 T 02506 T
  02548 T 02586 T 02640 T

- e + He
  02641 T

- e + H_2
  01977 T 02154 T 02238 E
  02331 T 02375 T 02447 E
  02497 E 02643 T

- e + Hg
  01817 E 01913 T 01986 T
  01990 T 02259 E 02269 E-T
  02323 E 02327 E 02483 E-T
  02493 T 02581 E 02587 E

- e + He*
  02488 T

- e + He*
  01795 E

- e + Hg
  01829 E 02496 T

- e + Kr
  01817 E 02231 T 02476 T

- e + Na
  02559 E

- e + N_2
  01789 T

- e + Ne
  02328 E

- e + No
  01817 E 01855 T 01948 E
  01949 E 01953 T 01986 T
  02326 T 02493 T 02588 T

- e + Rb
  02232 E

- e + Tl
  02496 T 02559 E

- e + Xe
  01817 E 01829 E 01855 T
  02231 T

- e + Zn
  02559 E

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E19

ELECTRON-PARTICLE INTERACTION

Momentum Transfer

- * Ar
  03068 T
- * Be
  02559 E
- * Bi
  02559 E
- * CO
  02749 E
- * Cu
  02559 E
- * Ge
  02327 E
- * Li
  01765 E-T
- * Mn
  02559 E
- * Mo
  01968 E 02326 T
- * Pt
  02559 E
- * Sn
  02559 E

E01

PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS (hν < 100 keV)

General

Undef
02182 T 02605 T

REACTANT INDEX

H02

PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS (hν < 100 keV)

Total Absorption

hν + Ag
01861 E-T

hν + Ba
01807 E 01861 E-T 01884 E

hν + Bi
01861 E-T 02630 E-T

hν + Br
01861 E-T

hν + Cd
01861 E-T

hν + Ce
02631 E-T

hν + CO
01861 E-T 02608 T

hν + CO_2
02603 E 03054 T

hν + Cr
01861 E-T

hν + Cu
01861 E-T

hν + D_2 + Ar
01869 E

hν + Dy
02113 E-T 02631 E-T

hν + Er
02113 E-T 02631 E-T

hν + Eu
02631 E-T

hν + Fe
01861 E-T

hν + Gd
02113 E-T 02631 E-T

hν + H_2O
02597 E 02631 T 02638 T

hν + H_2
02632 E

hν + Hg
01807 E 01861 E-T 02578 E
02633 E-T

hν + Ho
02631 E-T

hν + I
01861 E-T

hν + In
01861 E-T

hν + La
02631 E-T

hν + Mn
01861 E-T

hν + Mo
01861 E-T

hν + N_2
02617 T 03354 T

hν + Nd
02631 E-T

hν + Ne
02197 E

hν + Ni
01861 E-T

hν + NO
02638 T

hν + O_2
02332 E 02637 E 03354 T

hν + O_3
02638 T 02685 E

hν + OH
02299 E 02615 T

hν + Pb
01861 E-T 02633 E-T

hν + Pr
02631 E-T

hν + Sb
01861 E-T

hν + Se
01861 E-T

hν + Sm
02631 E-T

hν + Sn
01861 E-T

hν + Sr
01861 E-T

hν + Tb
02631 E-T

hν + Te
01861 E-T

hν + Th
01861 E-T 02630 E-T

hν + Tm
02631 E-T

hν + U
01861 E-T 02630 E-T

hν + W
01861 E-T 02630 E-T

hν + Y
02113 E-T 02631 E-T

hν + Yb
02631 E-T

hν + Zn
01861 E-T

Undef
02515 T

H03

PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS (hν < 100 keV)

Elastic Scattering

hν + Al
01885 T

hν + e
02593 E

hν + H_2
01922 T

hν + H_2
01922 T

hν + Pb
01885 T

REACTANT INDEX

H04

PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS (hν < 100 keV)

Excitation

hν + Ag
02195 E 02196 E

hν + Al*
02143 T

hν + Ar
02268 T

hν + As
01803 E

hν + Ba
02455 E

hν + Bi
01803 E

hν + Ca^{17+}
02263 T

hν + Cd
02195 E 02196 E

hν + Co^{2+}
01763 T

hν + CO_2
01842 E

hν + Fe^{2+}
02433 T

hν + Fe^{16+}
02623 T

hν + Fe^{23+}
02263 T 02621 E-T

hν + H
02418 T

hν + He
02418 T

hν + In
02195 E 02196 E

hν + Mn
02565 E

hν + Mo
02195 E 02196 E

hν + Nb
02195 E 02196 E

hν + Ni^{2+}
01763 T

hν + O^{2+}
02294 E

hν + Pb
01803 E

hν + Pd
02195 E 02196 E

hν + Rh
02195 E 02196 E

hν + Ru
02195 E 02196 E

hν + S^{2+}
02143 T

hν + Si^{2+}
02263 T

hν + Sb
02195 E 02196 E

hν + Si^{4+}
02143 T

hν + Sn
02195 E 02196 E

hν + Sn^{17+}
02263 T

hν + Ta
01803 E

hν + Ti^{16+}
02621 E-T

hν + Th^{27+}
02263 T

hν + Xe^{27+}
02263 T

hν + Zn^{27+}
02263 T

2hν + H
02530 T

2hν + H
02335 E

2hν + O
02335 E

Undef
c 1927 T

H05

PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS (hν < 100 keV)

Dissociation

hν + B_2
02590 E

hν + HeH+
01846 T

hν + N_2
02247 E

hν + OH+
02181 E

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PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS ($h\nu$ < 100 keV)

Ionization

$h\nu + HD$
31963 T

$h\nu + Al^{+}$
32239 T

$h\nu + Ar$
31888 E 31994 T 32264 T
32637 T

$h\nu + Au$
31833 E

$h\nu + Ba$
02217 T 02647 T

$h\nu + Ba^{+}$
32218 E

$h\nu + Be^{+}$
32463 T

$h\nu + Be^{2+}$
32278 E

$h\nu + Bi$
31833 E

$h\nu + Br$
31848 E

$h\nu + Ca^{17+}$
32263 T

$h\nu + Cl$
32334 T 02380 T

$h\nu + CO$
32381 E

$h\nu + CO_2$
31963 T 32381 E 32289 E
32713 E

$h\nu + Cr$
02283 E-T

$h\nu + Cs$
01978 E 02379 T

$h\nu + Cs^{+}$
01939 T 01992 E 01999 T

$h\nu + F$
31833 E

$h\nu + Fe^{23+}$
32263 T

$h\nu + Fe$
32161 T

$h\nu + Ga$
32213 E

$h\nu + H$
31931 T 32237 T 32238 T
02388 T

$h\nu + H_2^{+}$
31931 T

$h\nu + H_2O$
32735 T

$h\nu + H_2$
31826 T 31845 T 31887 T
01940 T 02590 E 02647 T

$h\nu + He$
31835 T 31958 E 31963 T
32198 T 32579 T

$h\nu + HeH^{+}$
31846 T

$h\nu + Hg$
31915 E-T 32161 T 32578 E

$h\nu + In$
32213 E

$h\nu + K$
32633 E-T

$h\nu + K^{+}$
31999 T 32378 T 32463 T

$h\nu + Kr$
31791 E 31994 T

$h\nu + La$
32393 T

$h\nu + Li$
32382 T 32577 T 32633 E-T

$h\nu + Li^{+}$
31963 T

$h\nu + Mg$
31914 E

$h\nu + Mg^{+}$
32[illegible] T

$h\nu + Mn$
32283 E-T 32331 E

$h\nu + N_2$
01940 T 02247 E 02337 T
02402 T 02647 T

$h\nu + Na$
32633 E-T

$h\nu + Na^{+}$
31999 T 32162 E 32167 E
32378 T

$h\nu + Nd$
33349 T

$h\nu + Ne$
31888 E 31994 T 32197 E
03059 E

$h\nu + NO$
31956 T

$h\nu + Pb$
31833 E 32246 T

$h\nu + Rn$
32161 T

$h\nu + Rb^{+}$
31823 T 31999 T

$h\nu + Sn$
32161 T

$h\nu + S^{+}$
32239 T

$h\nu + Si^{13+}$
32263 T

$h\nu + Si^{+}$
31819 T

$h\nu + Si^{2+}$
32239 T

$h\nu + Sm$
02246 T

$h\nu + Sm^{27+}$
32263 T

$h\nu + Sr^{+}$
31823 T

$h\nu + Ta$
31833 E

$h\nu + Tc$
32283 E-T

$h\nu + Th$
32393 T

$h\nu + Ti$
32213 E 32217 T

$h\nu + U$
32161 T 32393 T

$h\nu + U$
32161 T

$h\nu + Xe$
01994 T 02179 E

$h\nu + Xe^{+}$
02179 E

$h\nu + Yb^{47+}$
32263 T

$h\nu + Zn^{27+}$
32263 T

$h\nu + Zn^{27+}$
32263 T

$2h\nu + Cs$
02376 E 02377 E 03063 T

$2h\nu + H^{+}$
02635 T

$2h\nu + Ba$
01925 E

$2h\nu + Sc$
31993 T

$3h\nu + Ba$
32213 E

$3h\nu + Cs$
32377 E

$3h\nu + Ba$
31928 E

$3h\nu + Sc$
31993 T

$5h\nu + Ba$
32213 E

$nh\nu + Ar$
32486 E-T 32485 E

$nh\nu + Ca$
33350 E

$nh\nu + H_2$
32652 T

$nh\nu + Kr$
32486 E-T 32485 E

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32938 T

Undef
31932 T 32163 T 32177 T
02460 T 03062 T

hν + Be
02484 E-T

hν + Be
32215 E 32256 T 32484 E-T
02485 E 02646 T 03059 E

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PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS (hν < 100 keV)

Photodetachment

hν + Br⁻
02386 E

hν + H⁻
32226 T

hν + H⁻
31886 T

hν + Li⁻
32620 E-T

Undef
31966 T 32658 T

808

PHOTON COLLISIONS WITH HEAVY PARTICLES AND ELECTRONS (hν < 100 keV)

Fluorescence

hν + Au
02279 E

hν + H
32282 E-T

hν + H_2
32593 E

hν + Ba
32658 T

hν + Pb
32279 E

hν + Th
32279 E

hν + U
02279 E

J01

DATA COMPILATION

Heavy Particle

De-excitation
32733 E

Energy loss
32346 T

Excitation
32345 E 32733 E

Ionization
32345 E

Proton stopping power
32736 T

Stopping power
02046 T

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J02

DATA COMPILATION

Electrons

Branching ratio
32334 E

Energy loss
32346 T

Excitation
32293 E-T

Oscillator strengths
32335 E

Stopping power
02046 T

J03

DATA COMPILATION

Photons

Branching ratio
32334 E

Oscillator strengths
32335 E

J06

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32331 E-T

Desorption
32401 E-T

e secondary electron emission
32438 E-T

Electron reflection
32436 E-T

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32434 E-T

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02404 E-T

Proton stopping power
02704 T

Reflection
32431 E-T

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32435 E-T 32436 E-T 32731 E

Trapping
32402 E-T

J05

DATA COMPILATION

Transport

Ion transport in gases
32732 E

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DATA COMPILATION

Structure

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32344 E-T

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