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1985
BIBLIOGRAPHY OF ATOMIC AND MOLECULAR PROCESSES

MASTER

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ABSTRACT

This annotated bibliography includes papers on atomic and molecular processes published during 1985. 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 1985 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⁺, N₂, 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 H₂, H₃, HeH, N₂, O₂, CO, CO₂, OH, H₂O, CH₂, CH₃, CH₄, their ions and dissociated fragments.

ATOMIC COLLISIONS BIBLIOGRAPHY CATEGORIZATIONS (1973)

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)
16. Electron Detachment from Negative Ions into Continuum
17. Interaction Potentials
18. Angular Scattering
20. Atomization (unspecified process)

B. INTERACTIONS OF ATOMIC PARTICLES WITH FIELDS

1. Interaction of Individual Atoms or Molecules with External Fields
2. Collisions in Presence of Static 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
18. 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 ($h\nu < 100$ keV)

1. General
2. Total Absorption
3. Elastic Scattering
4. Excitation
5. Dissociation
6. Ionization
7. Photoelectron
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:

L? Seq - sequence (L?)

PERT - periodic table

Undef -- undefined

No molecules except H₂, H₂, HeH, H₂, O₂, CO, CO₂, OH, H₂O, CH₂, CH₃, CH₄, and their ions

H or "hydrogen" also includes D and T

COUNTRY CODE:

- | | |
|--------------------|------------------------------------|
| 1. United States | 26. Brazil |
| 2. United Kingdom | 27. Australia |
| 3. Soviet Union | 28. East Germany |
| 4. Japan | 29. Sweden |
| 5. West Germany | 30. Greece |
| 6. France | 31. South Africa |
| 7. Canada | 32. Taiwan |
| 8. Mexico | 33. Argentina |
| 9. The Netherlands | 34. People's Republic of China |
| 10. Denmark | 35. Saudi Arabia |
| 11. Finland | 36. Algeria |
| 12. Norway | 37. People's Republic of Singapore |
| 13. Switzerland | 38. Malaysia |
| 14. India | 39. Nigeria |
| 15. Israel | 40. Egypt |
| 16. Italy | 41. Jordan |
| 17. Czechoslovakia | 42. New Zealand |
| 18. Yugoslavia | 43. Chile |
| 19. Romania | 44. Turkey |
| 20. Poland | 45. Bulgaria |
| 21. Austria | 46. Pakistan |
| 22. Hungary | 47. Portugal |
| 23. Belgium | |
| 24. Spain | |

BIBLIOGRAPHY

Controlled Fusion Atomic Data Center

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|-----------|--|------------------------|---|
| 03072 E-Z | K α : Excitation; Scattering | | Avouris, P.; Deseth, J. Electron energy loss spectroscopy in the study of surfaces. <i>Ann. Rev. Phys. Chem.</i> 35, 69 (1984) United States |
| 03073 E-Y | K α 1: Excitation | | Lorne, S. P. State-resolved molecular reaction dynamics. <i>Ann. Rev. Phys. Chem.</i> 35, 139 (1984) United States |
| 03076 E | D α 1: Ar $^+$ + Pt ₃ Pb | 1 keV | Unger, B.; Marton, J. Chlorine induced positive secondary ion yield enhancement in SIMS experiments on a Pt ₃ Pb alloy sample. <i>Appl. Surf. Sci.</i> 23, 89 (1984) East Germany |
| 03075 Y | K α 6: hv + C | undef | Wesshauser, H.; Storey, P. J. Bound-bound radiative transitions in C. <i>Astron. Astrophys.</i> 143, 34 (1984) Switzerland |
| 03076 Y | A12: H $^+$ + H; H $^+$ + H $^+$ B37: H $^+$ + H; H $^+$ + H $^+$ | undef | Mathys, G. A theory of hydrogen line broadening in the presence of a magnetic field accounting for ion dynamics. <i>Astros. Astrophys.</i> 141, 248 (1984) Switzerland |
| 03077 Y | H γ 6: hv + B | undef | Butler, K.; Zeppen, C. J. H γ forbidden lines revisited. <i>Astron. Astrophys.</i> 141, 274 (1984) United Kingdom |
| 03078 Y | A33: He + CO; H ₂ + CO | 50-250 K | Bekand, J.; Kartaliker; Mehrotra, S. C. Collisional excitation of interstellar molecules. III. The effective straight-line trajectory approach. <i>Astrophys. Space Sci.</i> 133, 129 (1986) India |
| 03079 Y | A06: He $^+$ + He | 0.025-0.74 eV | Cooper, D. L.; Kirby, K.; Baljarno, A. Radiative charge transfer and radiative association of helium ions with neon atoms. <i>Can. J. Phys.</i> 62, 1622 (1984) United Kingdom |
| 03080 Y | E33: e + Na | 2-5333 eV | Gaas, P. S. Excitation of sodium atoms by electron impact. <i>J. Appl. Phys.</i> 57, 154 (1985) United States |
| 03081 Y | C32: e + Be; e + Al | 2-3 keV | Liljequist, D. Simple generalized oscillator strength density model applied to the simulation of keV electron-energy-loss distributions. <i>J. Appl. Phys.</i> 57, 457 (1985) Sweden |
| 03082 E | D α 6: e + Al; e + Ca; e + Au; e + Ag | 0.05-3.0 keV | Soen, G.; Ahaed, H.; Arsal, Y.; Jouffrey, M.; Verlier, P. Determination of the backscattering and transmission coefficients for nonkinetic electrons (0.05-3 keV). <i>J. Microsc. (Paris)</i> 9, 1 (1984) France |
| 03083 E | H β 6: hv + Ca; 2hv + Ca; 3hv + Ca | 1364-563 nm | Agostini, P.; Petite, G. Multiphoton ionisation of calcium with picosecond pulses. <i>J. Phys. B</i> 17, L811 (1984) France |
| 03084 E | H α 6: h ν + Fe; h ν + Fe | 1044-532 nm | Lompre, L. A.; L'Huilier, A.; Hainfray, G.; Fan, J. Y. Electron energy measurements in multiphoton ionisation of neon and neon. <i>J. Phys. B</i> 17, L817 (1984) France |
| 03085 Y | A11: CG $^+$ + H ₂ | 0.026-0.136 eV | Baker, D. J.; Flower, D. B. Vibrational relaxation in collisions between ¹² C ¹⁶ O and para-H ₂ . <i>J. Phys. B</i> 17, L829 (1984) United Kingdom |
| 03086 Y | A33: He $^+$ + He A12: He $^+$ + He | 17.5 eV | Von Busch, J. Comment on the integration of impact parameter equations and application to He $^+$ -He inelastic scattering. <i>J. Phys. B</i> 17, L833 (1984) West Germany |
| 03087 Y | H β 6: 2hv + Ca | 21530-22200 cm $^{-1}$ | Jacobs, H.; Lepasche, G.; Rechen, A. Use of the Green's function formalism in resonant two-photon ionisation of alkali-metal atoms: II. Two-photon ionisation of Ca near the $7P_{1/2}$ - $7P_{3/2}$ resonance. <i>J. Phys. B</i> 17, 4665 (1984) West Germany |
| 03088 Y | A37: He $^+$ + He A11: He $^+$ + He | 3.325-3.21 eV | Femelle, A.; Bunge, S. Molecular autoionisation width for He(3 1P) + He: Penning and associative ionisation cross sections. <i>J. Phys. B</i> 17, 4689 (1984) France |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|--------------|--|
| 33289 E | A36: $\text{Au}^{2+} + \text{H}_2; \text{Au}^{2+} + \text{CO}; \text{Au}^{2+} + \text{Ar};$ $\text{Au}^{3+} + \text{H}_2; \text{Au}^{3+} + \text{CO}; \text{Au}^{3+} + \text{Ar};$ $\text{Au}^{4+} + \text{H}_2; \text{Au}^{4+} + \text{CO}; \text{Au}^{4+} + \text{Ar};$ $\text{Au}^{5+} + \text{H}_2; \text{Au}^{5+} + \text{CO}; \text{Au}^{5+} + \text{Ar};$ $\text{Au}^{6+} + \text{H}_2; \text{Au}^{6+} + \text{CO}; \text{Au}^{6+} + \text{Ar};$ $\text{Au}^{7+} + \text{H}_2; \text{Au}^{7+} + \text{CO}; \text{Au}^{7+} + \text{Ar};$ $\text{Au}^{8+} + \text{H}_2; \text{Au}^{8+} + \text{CO}; \text{Au}^{8+} + \text{Ar};$ $\text{Au}^{9+} + \text{H}_2; \text{Au}^{9+} + \text{CO}; \text{Au}^{9+} + \text{Ar};$ $\text{Au}^{10+} + \text{H}_2; \text{Au}^{10+} + \text{CO}; \text{Au}^{10+} + \text{Ar};$ $\text{Au}^{11+} + \text{H}_2; \text{Au}^{11+} + \text{CO}; \text{Au}^{11+} + \text{Ar};$ $\text{Au}^{12+} + \text{H}_2; \text{Au}^{12+} + \text{CO}; \text{Au}^{12+} + \text{Ar};$ $\text{Au}^{13+} + \text{H}_2; \text{Au}^{13+} + \text{CO}; \text{Au}^{13+} + \text{Ar};$ $\text{Au}^{14+} + \text{H}_2; \text{Au}^{14+} + \text{CO}; \text{Au}^{14+} + \text{Ar};$ $\text{Au}^{15+} + \text{H}_2; \text{Au}^{15+} + \text{CO}; \text{Au}^{15+} + \text{Ar};$ $\text{Au}^{16+} + \text{H}_2; \text{Au}^{16+} + \text{CO}; \text{Au}^{16+} + \text{Ar};$ $\text{Au}^{17+} + \text{H}_2; \text{Au}^{17+} + \text{CO}; \text{Au}^{17+} + \text{Ar};$ $\text{Au}^{18+} + \text{H}_2; \text{Au}^{18+} + \text{CO}; \text{Au}^{18+} + \text{Ar};$ $\text{Au}^{19+} + \text{H}_2; \text{Au}^{19+} + \text{CO}; \text{Au}^{19+} + \text{Ar};$ $\text{Au}^{20+} + \text{H}_2; \text{Au}^{20+} + \text{CO}; \text{Au}^{20+} + \text{Ar};$ A37: $\text{Au}^{2+} + \text{H}_2; \text{Au}^{2+} + \text{Ar}; \text{Au}^{3+} + \text{H}_2; \text{Au}^{3+} + \text{Ar};$ $\text{Au}^{4+} + \text{H}_2; \text{Au}^{4+} + \text{Ar}; \text{Au}^{5+} + \text{H}_2; \text{Au}^{5+} + \text{Ar};$ $\text{Au}^{6+} + \text{H}_2; \text{Au}^{6+} + \text{Ar}; \text{Au}^{7+} + \text{H}_2; \text{Au}^{7+} + \text{Ar};$ $\text{Au}^{8+} + \text{H}_2; \text{Au}^{8+} + \text{Ar}; \text{Au}^{9+} + \text{H}_2; \text{Au}^{9+} + \text{Ar};$ $\text{Au}^{10+} + \text{H}_2; \text{Au}^{10+} + \text{Ar}; \text{Au}^{11+} + \text{H}_2; \text{Au}^{11+} + \text{Ar};$ $\text{Au}^{12+} + \text{H}_2; \text{Au}^{12+} + \text{Ar}; \text{Au}^{13+} + \text{H}_2; \text{Au}^{13+} + \text{Ar};$ $\text{Au}^{14+} + \text{H}_2; \text{Au}^{14+} + \text{Ar}; \text{Au}^{15+} + \text{H}_2; \text{Au}^{15+} + \text{Ar};$ $\text{Au}^{16+} + \text{H}_2; \text{Au}^{16+} + \text{Ar}; \text{Au}^{17+} + \text{H}_2; \text{Au}^{17+} + \text{Ar};$ $\text{Au}^{18+} + \text{H}_2; \text{Au}^{18+} + \text{Ar}; \text{Au}^{19+} + \text{H}_2; \text{Au}^{19+} + \text{Ar};$ $\text{Au}^{20+} + \text{H}_2; \text{Au}^{20+} + \text{Ar}; \text{Au}^{21+} + \text{H}_2; \text{Au}^{21+} + \text{Ar};$ | 20 keV | Anderson, L. H.; Frost, H.; Sveinlund, P.; Knudsen, H. Experimental investigation of the mechanism creating projectile continuous electrons in highly charged ion-atom collisions. <i>J. Phys. B 17, 6791 (1984)</i> Denmark |
| 33290 E | A36: $\text{Au}^{2+} + \text{H}_2; \text{Au}^{3+} + \text{H}_2; \text{Au}^{4+} + \text{H}_2;$ $\text{Au}^{5+} + \text{H}_2; \text{Au}^{6+} + \text{H}_2; \text{Au}^{7+} + \text{H}_2;$ $\text{Au}^{8+} + \text{H}_2$ | 100 keV/amu | Sorensen, J.; Anderson, L. H.; Sveinlund, P.; Knudsen, H.; Liljebj, L.; Nielsen, K. H. Cross sections signs (sub all) for electron capture collisions between sodium velocity, highly charged ions and molecular hydrogen. <i>J. Phys. B 17, 6763 (1984)</i> Denmark |
| 33291 F | E32: $e + \text{Ar}$ F18: $e + \text{Ar}$ | 0-13 eV | Bell, K. L.; Scott, H. S.; Lennon, G. A. The scattering of low-energy electrons by argon atoms. <i>J. Phys. B 17, 6757 (1984)</i> United Kingdom |
| 33292 F | E33: $e + \text{H}_2; e + \text{CO}; e + \text{H}_2; e + \text{ND}$ E08: $e + \text{H}_2; e + \text{CO}; e + \text{H}_2; e + \text{ND}$ | 2-13 eV | Kozansky, A. M.; Yelich, I. S. The semiclassical approximation in the local theory of resonance inelastic interaction of slow electrons with molecules. <i>J. Phys. B 17, 6767 (1984)</i> Soviet Union |
| 33293 F | A37: $\text{He}^+ + \text{He}$ | 5-25 keV | Yokoro, H.; Oda, S. Measurement of electrons ejected from 5-25 keV $\text{He}^+ - \text{He}$ collisions: collision-velocity-dependent features of electron emission peaks. <i>J. Phys. B 17, L871 (1984)</i> Japan |
| 33294 F | A00: $\text{Ar}^+ + \text{Ar}; \text{Ar}^{2+} + \text{Ar}; \text{Ar}^{3+} + \text{Ar};$ $\text{Ar}^{4+} + \text{Ar}; \text{Ar}^{5+} + \text{Ar}; \text{Ar}^{6+} + \text{Ar};$ $\text{Ar}^{7+} + \text{Ar}; \text{Ar}^{8+} + \text{Ar}; \text{Ar}^{9+} + \text{Ar}$ A37: $\text{Ar}^+ + \text{Ar}; \text{Ar}^{2+} + \text{Ar}; \text{Ar}^{3+} + \text{Ar};$ $\text{Ar}^{4+} + \text{Ar}; \text{Ar}^{5+} + \text{Ar}; \text{Ar}^{6+} + \text{Ar};$ $\text{Ar}^{7+} + \text{Ar}; \text{Ar}^{8+} + \text{Ar}; \text{Ar}^{9+} + \text{Ar}$ A38: $\text{Ar}^+ + \text{Ar}; \text{Ar}^{2+} + \text{Ar}; \text{Ar}^{3+} + \text{Ar};$ $\text{Ar}^{4+} + \text{Ar}; \text{Ar}^{5+} + \text{Ar}; \text{Ar}^{6+} + \text{Ar};$ $\text{Ar}^{7+} + \text{Ar}; \text{Ar}^{8+} + \text{Ar}; \text{Ar}^{9+} + \text{Ar}$ | 1.0-16.2 keV | Astac, G.; Barony, L.; Cedergvist, H.; Benard, H.; Haldt, S.; Sveinlund, P.; Johnson, A.; Knudsen, H.; Liljebj, L.; Bonafelt, K. C. Absolute cross sections for multielectron processes in low-energy $\text{Ar}(\text{any } q^+) + \text{Ar}$ collisions as measured with a new technique. <i>J. Phys. B 17, L877 (1984)</i> Sweden |
| 33295 E | A30: $\text{Na}^+ + \text{He}$ A18: $\text{Na}^+ + \text{He}$ | 79-33 eV | Kita, S.; Izawa, H.; Hasegawa, F.; Inoue, H. Charge exchange reactions arising from a quasi-sigma (sub u) - sigma (sub g) crossing in collisions of Na^+ ions with He atoms. <i>J. Phys. B 17, L885 (1984)</i> Japan |
| 33296 F | E33: $e + \text{He}$ F17: $e + \text{He}$ | 83 eV | Anderson, H.; Hertel, T. V.; Klempfner, H. Shape and dynamics of states excited in electron-atom collisions: a comment on orientation and alignment parameters by consideration of attractive and repulsive forces. <i>J. Phys. B 17, L931 (1984)</i> United States |
| 33297 E | F30: $e + \text{H}_2^+; e + \text{ND}_2^+; e + \text{D}_2^+$ F36: $e + \text{H}_2^+; e + \text{ND}_2^+; e + \text{D}_2^+$ | 0.31-1 eV | Mitchell, J. B. A.; Ng, C. T.; Forand, L.; Janssen, H.; McGowan, J. H. Total cross sections for the dissociative recombination of H_2^+ , ND_2^+ and D_2^+ . <i>J. Phys. B 17, L939 (1984)</i> Canada |

| Ref. No. | Abstracts | Energy Range | Reference |
|----------|---|--------------|---|
| 03098 F | 733: He + He; He + O ₂ ; He + N ₂ ; He + CO | 15-500 eV | Bocher, P.; Focant, J. L.; Letzer, P. W.; McCookey, J. B. Dipole and non-dipole excitation in collisions of low-energy electrons with diatomic molecules. <i>J. Phys. B</i> 17, 1915 (1984) Canada |
| 03099 F | 762: He + He; He + N ₂ ; He + O ₂ ; He + CO | 12-100 nm | Man-field, E.C.D. Subvalence s-shell excitation in He, Ne and Ar atoms. <i>J. Phys. B</i> 17, 4851 (1984) Ireland |
| 03100 F | 801: He + He | 0-61 eV | Terakawa, T.; Ishikawa, Y.; Inoue, H. Emission of Balmer lines in the collision of He ⁺ ions with He molecules in the He energy range 0-61 eV. <i>J. Phys. B</i> 17, 4911 (1984) Japan |
| 03101 F | 802: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ ; He + H ₂ O; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₃ H ₈ ; He + C ₂ H ₄ ; He + C ₂ H ₂ ; He + H ₂ | 0-1 eV | Kamber, E. V.; Brenton, A. G.; Payne, J. G. Single-electron capture collisions of ground and metastable He ⁺ ions with atomic and molecular gases. <i>J. Phys. B</i> 17, 4919 (1984) United Kingdom |
| 03102 F | 870: He + He; He + N ₂ ; He + O ₂ ; He + CO | 10-1000 eV | Shrivastava, S. K.; Roy, A. B. Ionization of He ⁺ , Ne ⁺ and Ar ⁺ due to electron impact. <i>J. Phys. B</i> 17, 4935 (1984) India |
| 03103 E | 174: He + He | 5535 Å | Bowen, J. L.; Thonar, A. P. Time-resolved fluorescence and population measurements in laser-pumped barium vapour. <i>J. Phys. B</i> 17, 15 (1984) United Kingdom |
| 03104 E | 175: He + He; He + Ne | 12-14 eV | Morioka, T.; Matsuda, Y.; Kawanishi, T.; Fujishita, A.; Sakamura, N. Angular distributions of photoelectrons from the autoionizing states between the $2p_{3/2}$ and $2p_{1/2}$ ionization thresholds of Kr and Xe. <i>J. Phys. B</i> 18, 71 (1985) Japan |
| 03105 F | 172: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ | 4501-6000 Å | Lemaire, J. L.; Chotin, J. L.; Costes, P. Broadening and shift parameters of the sodium D lines perturbed by atomic hydrogen. <i>J. Phys. B</i> 18, 95 (1985) France |
| 03106 E | 177: He + He; He + N ₂ ; He + O ₂ ; He + CO | 10-50 keV | Valluri, S. P.; Becker, G.; Graf, H.; Scheid, H. Comparison of ionization probabilities in the semiclassical approximation calculated with Rutherford and modified straight-line trajectories. <i>J. Phys. B</i> 18, 111 (1985) West Germany |
| 03107 F | 180: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ ; He + H ₂ O; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₂ H ₄ ; He + C ₂ H ₂ ; He + H ₂ | 0-1 eV | Kamber, E. V.; Dennis, A. G.; Brenton, A. G.; Nasted, J. S.; Payne, J. G. Double electron capture by Ar ⁺ from rare-gas atoms. <i>J. Phys. B</i> 18, 117 (1985) United Kingdom |
| 03108 E | 181: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ ; He + H ₂ O; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₂ H ₄ ; He + C ₂ H ₂ ; He + H ₂ | 0-100 eV | Nickel, J.; Jure, E.; Register, D. F.; Frajser, S. Total electron scattering, cross sections for He, Ne, Ar, Kr. <i>J. Phys. B</i> 18, 125 (1985) United States |
| 03109 E | 182: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ ; He + H ₂ O; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₂ H ₄ ; He + C ₂ H ₂ ; He + H ₂ | 20-200 eV | Kumar, N.; Vayal, S. S.; Tripathi, A. B. Electron impact excitation of the 1s state of lithium at intermediate and high energies. <i>J. Phys. B</i> 18, 135 (1985) India |
| 03110 E | 183: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ ; He + H ₂ O; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₂ H ₄ ; He + C ₂ H ₂ ; He + H ₂ | 0-1 eV | Daoud, A.; Lehmann-Brenani, A.; Deywet, A.; Del Cappello, G.; Tavaré, C. Coincidence study of the electron impact ionization of neon: momentum density determination and test of various scattering models. <i>J. Phys. B</i> 18, 141 (1985) France |
| 03111 E | 184: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ ; He + H ₂ O; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₂ H ₄ ; He + C ₂ H ₂ ; He + H ₂ | 0-10 eV | Tennyson, J.; Noble, J. J. Low-energy electron-He ⁺ collisions: variation of form factors with internuclear separation. <i>J. Phys. B</i> 18, 155 (1985) United Kingdom |
| 03112 F | 185: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ ; He + H ₂ O; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₂ H ₄ ; He + C ₂ H ₂ ; He + H ₂ | 10-100 eV | Čirić, D.; Dijkkamp, J.; Vilek, E.; de Neuf, F. J. Shell-selective electron capture cross sections in collisions of He ⁺ and Ne ⁺ with atomic hydrogen. <i>J. Phys. B</i> 18, 117 (1985) The Netherlands |
| 03113 E | 186: He + He; He + N ₂ ; He + O ₂ ; He + CO; He + H ₂ ; He + H ₂ O; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₂ H ₄ ; He + C ₂ H ₂ ; He + H ₂ | 0-100 eV | Bonnart, J. J.; Fleury, A.; Gombert, H.; Politis, N. P.; Chabouat, M.; Bissin, S.; Dousson, S.; Metz, D. Electron capture into different (nl) states in slow collisions of He ⁺ projectiles on He and H ₂ targets. <i>J. Phys. B</i> 18, 123 (1985) France |

| Ref. No. | Energy Range | Reference |
|----------|---------------------------------|--|
| 33116 F | 270: 1000 | 2.3-8 eV Berts, L. R.; Collins, L. A. A least-squares technique for electron scattering by atoms and molecules. J. Phys. B 10, L25 (1985) United States |
| 33115 F | 1000 10000 | 2-35 keV Sato, Y.; Kawaiishi, T.; Itikawa, Y.; Itoh, Y.; Terahashi, J.; Koyama, T.; Suzuki, T.; Tomita, S.; Fujisaki, A.; Yoshino, K. Single and double photoionization of He atoms between 15 and 42 eV. J. Phys. B 10, 225 (1985) Japan |
| 33116 F | 270: 1000 10000 | 27000 Borjesson, H. Population of fine-structure levels of Ar^{2+} ($3p^2$) in Penning ionization of Ar by metastable He. J. Phys. B 10, 251 (1985) West Germany |
| 33117 F | 270: 1000 10000 | 45 meV Hoeg, S.; Borjesson, H.; Staussner, V. Experimental and theoretical study of Penning ionization of Ar^{2+} by metastable He (2^3S). J. Phys. B 10, 259 (1985) West Germany |
| 33118 F | 101: 1000 10000 | 5.5 eV/amu Keller, I.; Pitz, S.; Schepers, B. A.; Salik, G.; Varga, D.; Varga, J.; Poretsky, D.; Koch, S. Super electron spectra in 5.5 MeV amu^{-1} He($2s^2$) $^+$ and He($2s$) $^+$ ion impact on He. J. Phys. B 10, 275 (1985) Soviet Union |
| 33119 F | 270: 1000 | 1-13 keV Aizawa, T.; Kakiya, A.; Suzuki, M.; Kikuchi, S.; Sasaki, Y. Autoionizing states of He^+ and He excited by slow He^+ impact on He. J. Phys. B 10, 283 (1985) Japan |
| 33120 F | 101: 1000 10000 | 1.3-6 keV Freitas, F. L.; Jurek, R.; Montenegro, M. J.; de Pinho, V. S.; Siqueira, G. N. Electron- and alpha-particle-induced K-shell ionization of He and Ar atoms. J. Phys. B 10, 285 (1985) Brazil |
| 33121 F | 101: 1000 10000 100000 | 1.0-15.0 keV/amu Keller, I.; Pitz, S.; Schepers, B. A.; Salik, G.; Varga, D.; Varga, J.; Poretsky, D.; Koch, S. Super electron spectra in 5.5 MeV amu^{-1} He($2s^2$) $^+$ and He($2s$) $^+$ ion impact on He. J. Phys. B 10, 275 (1985) Soviet Union |
| 33122 F | 101: 1000 10000 100000 | 5.25-11.25 keV Iwano, M.; Iwano, T.; Fusho, Y.; Gouge, T.; Kobayashi, T.; Nakamura, A.; Ohtani, S.; Iwano, K.; Ishiji, S.; Tsurubuchi, S. Electron capture processes of He^{2+} ions with very high charge states (q greater than or equal to 4 states, then or equal to 13) in collisions with He atoms. J. Phys. B 10, 317 (1985) Japan |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|-----------------|---|
| 33127 E | E33: e + Na E17: e + Na | 100 eV | Tumber, P. J. G.; Riley, J. L.; Forst, J. E.; Buchan, S. J. On the coherence of the excitation of the 3P ^o state in sodium by 100 eV electrons. <i>J. Phys. B</i> 18, 351 (1985) Australia |
| 33128 E | E31: H ^o E30: hv + H ^o | 5.4-8.1 GHz | Rayfield, J. J.; Finnánsage, L. A. Microwave multiphoton σ -decaying transitions in electrically polarised, highly excited hydrogen atoms. <i>J. Phys. B</i> 18, 189 (1985) United States |
| 33125 I | E36: hv + H ₂ | 500 Å | Hara, S.; Ogata, S. Photoionization of the H ₂ molecule. <i>J. Phys. B</i> 18, L59 (1985) Japan |
| 33126 E | A36: H ^o + CH ₂ ; H ^o + H ₂ A18: H ^o + CH ₂ ; H ^o + H ₂ | 350-1065 keV | Scheurer, J. B.; Daxer, G. K.; Hoyerhof, B. E. Large angle scattering and nuclear resonance effect in electron capture in H ^o + C and H ^o + S collisions. <i>J. Phys. B</i> 18, L65 (1985) France |
| 33127 I | E36: hv + Ar | 1000 eV | Hiltner, J.; McCarthy, I. E.; Weizel, F. Intensities of the 3s ionisation spectrum of argon. <i>J. Phys. B</i> 18, 191 (1985) Australia |
| 33128 E | A33: Ar ^o + Na ^o A11: Ar ^o + Na ^o | 1000 eV | Buchan, K. B.; Smith, D. B.; Wolfes, R. J. I sising in sodium n = 28 caused by multiple ion impact: evolution of the final-state distribution. <i>J. Phys. B</i> 18, 661 (1985) United States |
| 33129 I | A36: H ^o + H | 0.2-2 keV | Richter, J.; Ho, Y. S. Classical motion of the charge asymmetry in slow atomic collisions: I. Single-electron motion derived from Ehrenfest's theorem. <i>J. Phys. B</i> 18, 451 (1985) West Germany |
| 33130 I | A33: H ^o + H; H ^o + H ₂ ; C ^o + H; C ^o + H ₂ H ^o + H; H ^o + H ₂ A36: H ^o + H; H ^o + H ₂ ; C ^o + H; C ^o + H ₂ H ^o + H; H ^o + H ₂ | 3.331-1 keV/amu | Garand, R.; McCarroll, B. Charge transfer in low-energy collisions of H ^o , C ^o and H ^o with H and H ₂ . <i>J. Phys. B</i> 18, 663 (1985) France |
| 33131 E | A33: H ^o + H; H ^o + H ₂ A36: H ^o + H; H ^o + H ₂ | 0.6-8 keV | Vilkie, P. G.; Yousef, P. D.; McCullough, E. B.; Zedden, J.; Gilbody, S. B. Total and state-selective capture by slow H ^o ions in atomic and molecular hydrogen. <i>J. Phys. B</i> 18, 679 (1985) United Kingdom |
| 33132 E | A36: Xe ^o + H ₂ ; Ar ^o + H ₂ | 6-29 eV | Haber, D. A.; Kahlert, H. J. Vibrational excitation of H ₂ ^o in electron capture collisions of Xe ^o and Ar ^o with H ₂ . <i>J. Phys. B</i> 18, 491 (1985) West Germany |
| 33133 E | E35: e + He E17: e + He | 425 eV | Stefani, G.; Casilliani, B. Impulsive (e,2e) energy-sharing experiments on He. <i>J. Phys. B</i> 18, 679 (1985) Italy |
| 33134 I | E33: e + Li E17: e + Li | 10-60 eV | Saxena, S.; Nether, K. C. Angular correlation parameters and differential cross sections in electron-lithium scattering. <i>J. Phys. B</i> 18, 539 (1985) India |
| 33135 E | E35: e + Li; e + Na; e + K | 1-10 Threshold | Baus, G.; Hoede, H.; Baith, H.; Schroder, U. Measurement of spin asymmetries in the electron impact ionisation of alkali atoms. <i>J. Phys. B</i> 18, 531 (1985) West Germany |
| 33136 I | E02: e + H ₂ E03: e + H ₂ | 0.03-20 eV | Sur, S.; Ghosh, A. S. Model exchange potential and e ⁻ -H ₂ scattering. <i>J. Phys. B</i> 18, 539 (1985) India |
| 33137 E | E33: e + CO ^o E30: e + CO ^o E36: e + CO ^o | 8-50 eV | Mitchell, J. B. A.; Han, B. The dissociative recombination and excitation of CO ^o . <i>J. Phys. B</i> 18, 547 (1985) Canada |
| 33138 E | E36: hv + Ca | 6-8 eV | Karapetsh, N.; Neeller, H.; Scheidt, V.; Zimmermann, P. The double-electron resonances 3dnp 3p ^o in the photoionization spectrum of Ca I. <i>J. Phys. B</i> 18, L167 (1985) West Germany |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|-------------------|---|
| 03139 I | A00: Li ⁺ + B; Li ²⁺ + B | 163-1230 keV | Deincke, F. Comment on the relation between the cross section for electron stripping from a helium-like ion in collision with atomic hydrogen and the K-shell ionization cross section for proton impact. <i>J. Phys. B 10</i> , L111 (1985) |
| 03140 I | A03: He + He | 10-10000 eV | Courcia-Guenneguen, C.; Sifin, V. theoretical study of the He(2p-1p) excitation in He + He collisions. <i>J. Phys. B 10</i> , 699 (1985) France |
| 03141 I | A07: H ⁺ + CO; H ⁺ + SO; H ⁺ + Fe | 0.3-2.0 keV | Cuscorra, P.; Parillo, E.; Rosato, E.; Spadocci, G.; Vigilante, R. Proton-induced L-subshell ionization on CO, SO and Fe. <i>J. Phys. B 10</i> , 711 (1985) Italy |
| 03142 I | A10: H ⁺ + N ₂ ; H ⁺ + O ₂ ; H ⁺ + CO; H ⁺ + D ₂ ; H ⁺ + CO ₂ | 420-1020 eV | Tsun, Y. K.; Kuzlov, V.; Ganyuz, J. P.; Bernenberg, A. Electron detachment in H ⁺ -molecule collisions. <i>J. Phys. B 10</i> , 721 (1985) France |
| 03143 I | A33: C ²⁺ + He; C ³⁺ + He; C ⁴⁺ + He; N ²⁺ + He; N ³⁺ + He; N ⁴⁺ + He; O ²⁺ + He; O ³⁺ + He; O ⁴⁺ + He; Ne ²⁺ + He; Ne ³⁺ + He; Ne ⁴⁺ + He A36: C ²⁺ + He; C ³⁺ + He; C ⁴⁺ + He; N ²⁺ + He; N ³⁺ + He; N ⁴⁺ + He; O ²⁺ + He; O ³⁺ + He; O ⁴⁺ + He; Ne ²⁺ + He; Ne ³⁺ + He; Ne ⁴⁺ + He | 0.50-6.21 keV/amu | Dejhaag, B.; Gordov, I. S.; Bruntz, A.; Bruntz, A. G.; de Haer, F. J. Selective single-electron capture into (n, l) subshells in slow collisions of C ²⁺ , N ³⁺ , O ⁴⁺ and Ne ⁴⁺ with He, H ₂ and Ar. <i>J. Phys. B 10</i> , 737 (1985) The Netherlands |
| 03144 I | A36: H ⁺ + He; H ⁺ + Si; H ⁺ + N ₂ ; He ²⁺ + O; He ²⁺ + He; He ²⁺ + Si | 1.5-3.5 keV | Jakobsen-Andersen, B. E.; Andersen, P. A. Electron capture across a nuclear resonance in the strong potential Born approximation. <i>J. Phys. B 10</i> , 757 (1985) West Germany |
| 03145 I | E03: e + Al E05: e + Al | 23-503 eV | James, G. H.; Forrest, L. F.; Bone, K. J.; Wilson, B. The ejected-electron spectrum of Al I autoionizing transitions resulting from 23-503 eV electron impact excitation. <i>J. Phys. B 10</i> , 775 (1985) United Kingdom |
| 03146 I | E34: e + H ₂ ⁺ E36: e + H ₂ ⁺ | 3.2-7 eV | Schneider, I.; Mihailescu, I. U.; Wans, L.; Iovit-Popescu, I. The direct dissociative recombination of the hydrogen molecular ion at low energies. <i>J. Phys. B 10</i> , 791 (1985) Romania |
| 03147 I | E35: hv + O ₂ E36: hv + O ₂ | 490-539 eV | Frasiński, L. J.; Randall, K. J.; Collins, K. Predissociation of the c ² (sub u) state of O ₂ ⁺ . <i>J. Phys. B 10</i> , L329 (1985) United Kingdom |
| 03148 I | A03: OK + H ₂ | undef | Dorongan, B. P.; Flower, D. E. Rotational excitation of OH by H ₂ : a clarification. <i>J. Phys. B 10</i> , L137 (1985) United Kingdom |
| 03149 I | F03: e + He F05: e + He | 23.0-26.9 eV | Hammond, P.; Seed, P. H.; Crejanovic, S.; King, G. C. Energy partitioning in near-threshold excitation and ionization of helium by electron impact. <i>J. Phys. B 10</i> , L101 (1985) United Kingdom |
| 03150 I | A07: H ⁺ + He; He ²⁺ + He; Li ²⁺ + He | 53-2300 keV/amu | Shah, S. B.; Gilbody, S. B. Single and double ionization of helium by H ⁺ , He ²⁺ and Li ²⁺ ions. <i>J. Phys. B 10</i> , 699 (1985) United Kingdom |
| 03151 I | D09: He ⁺ + H | undef | Janez, B. K.; Nedeljkovic, N. W. Interaction of atomic particles with solid surfaces: VI. Super neutralization of positive ions. <i>J. Phys. B 10</i> , 915 (1985) Yugoslavia |
| 03152 I | A07: He ²⁺ + H | | Goodson, T. P.; McDowell, S.R.C. A classical trajectory Monte Carlo study of collisions of He ²⁺ with H in a strong magnetic field. <i>J. Phys. B 10</i> , 921 (1985) United Kingdom |
| 03153 I | A36: O ²⁺ + He; O ³⁺ + He; O ⁴⁺ + He | 6 keV | Kemper, E. V.; Branton, A. G.; Boyson, J. R.; Hasted, J. B. Single-electron capture spectra for collisions of O ²⁺ on He, H ₂ and H ₂ . <i>J. Phys. B 10</i> , 933 (1985) United Kingdom |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|-------------------|--|
| 03154 E | A06: Ar ¹⁷⁺ + H ₂ | 250 keV | Bonnet, J. P.; Chevallier, P.; Leguennec-Piquenal, P.; Chetoui, A.; Stephan, C. Capture cross sections in highly excited p states of Ar ¹⁷⁺ in high-velocity collision of 250 keV Ar ¹⁷⁺ on H ₂ . <i>J. Phys. B</i> 18, 943 (1985) France |
| 03155 F | E03: e + Li ⁰ ; e + Be ²⁺ ; e + B ³⁺ ; e + C ⁴⁺ ; e + N ⁵⁺ ; e + O ⁶⁺ ; e + Ne ⁸⁺ ; e + Hg ¹⁸⁺ ; e + Si ¹³⁺ ; e + Ca ¹⁰⁺ ; e + Fe ²⁴⁺ | Thresh.-40F By | Radnell, N. E. Electron impact excitation of He-like ions. <i>J. Phys. B</i> 18, 955 (1985) United Kingdom |
| 03156 E | E22: e + Ar | 0.09-70 eV | Perch, J.; Granitzka, B.; Pasche, C.; Raith, V. Electron-argon total cross section measurements at low energies by time-of-flight spectroscopy. <i>J. Phys. B</i> 18, 567 (1985) West Germany |
| 03157 E | E03: e + Hg | 8.6-17.2 eV | Deveson, D. S.; Eubank, H.; King, G. C. A study of resonance structure in mercury using metastable excitation by electron impact with high resolution. <i>J. Phys. B</i> 18, 985 (1985) United Kingdom |
| 03158 E | E03: e + He E05: e + He | 57-62 eV | Van der Burgt, P.J.H.; Van Eck, J.; Heidem, H.G.M. Orbital angular momentum exchange in post-collision interaction. <i>J. Phys. B</i> 18, 999 (1985) The Netherlands |
| 03159 E-F | C02: e + Al; e + Au D9a: e + Al; e + Au | 15-60 keV | Seubert, G.; Hogauchert, S. Measurements of the back-scattering and absorption of 15-60 keV electrons for transparent solid films at various angles of incidence. <i>J. Phys. B</i> 17, 2839 (1984) East Germany |
| 03160 F | C12: e + Si C08: e + Si C05: e + Si | 100 keV | Desulvo, A.; Parisini, A.; Boss, R. Monte Carlo simulation of elastic and inelastic scattering of electrons in thin films: I. Valence electron losses. <i>J. Phys. B</i> 17, 2855 (1984) Italy |
| 03161 F | D02: Undef | Undef | King, B. V.; Tsong, T.S.T. A model for atomic sputtering and preferential sputtering effects in SIMS depth profiling. <i>J. Vac. Sci. Technol. A</i> 2, 1803 (1984) United States |
| 03162 E | D03: Ar ⁺ + CuO; Ar ⁺ + ZnO; Ar ⁺ + NiO; Ar ⁺ + Cu ₂ O ₂ ; Ar ⁺ + Cr ₂ O ₃ ; Ar ⁺ + TiO ₂ ; Ar ⁺ + Ti; Ar ⁺ + Cr; Ar ⁺ + Co; Ar ⁺ + Si; Ar ⁺ + Zn; Ar ⁺ + Cu | 10 keV | Sato, A.; Inoue, Y.; Ohno, H.; Sonono, S. Effects of gaseous oxygen on SIMS analysis of oxygen isotopes in metal oxides. <i>J. Vac. Sci. Technol. A</i> 2, 1808 (1984) Japan |
| 03163 E | C08: He ⁺ + SiC | 1-20 keV | Hiyagawa, S.; Ato, Y.; Hiyagawa, Y. Implantation profiles of low-energy helium in silicon carbide. <i>Jpn. J. Appl. Phys. Pt. 1</i> 23, 1387 (1984) Japan |
| 03164 E | D03: O ₂ ⁺ + Si | 2-20 keV | Ohnishi, T.; Tago, Y. Secondary ion emission from Si subjected to oxygen ion bombardment. <i>Jpn. J. Appl. Phys. Pt. 1</i> 23, 1466 (1984) Japan |
| 03165 F | H2a: hv + Ca ¹⁰⁺ ; hv + Ca ¹⁷⁺ ; hv + Ca ¹⁸⁺ ; hv + Sc ¹⁰⁺ ; hv + Sc ¹⁷⁺ ; hv + Ti ¹⁰⁺ ; hv + Ti ¹⁶⁺ ; hv + Ti ¹⁸⁺ ; hv + V ¹⁰⁺ ; hv + V ¹⁶⁺ ; hv + V ¹⁸⁺ ; hv + Cr ¹⁰⁺ ; hv + Cr ¹⁷⁺ ; hv + Cr ¹⁸⁺ ; hv + Mn ¹⁰⁺ ; hv + Mn ¹⁶⁺ ; hv + Mn ¹⁷⁺ ; hv + Fe ¹⁰⁺ ; hv + Fe ¹⁶⁺ ; hv + Fe ¹⁷⁺ ; hv + Co ¹⁰⁺ ; hv + Co ¹⁶⁺ ; hv + Co ¹⁷⁺ ; hv + Ni ¹⁰⁺ ; hv + Ni ¹⁶⁺ ; hv + Ni ¹⁷⁺ ; hv + Cu ¹⁷⁺ ; hv + Cu ¹⁸⁺ ; hv + Cu ¹⁹⁺ | Undef | Hata, J.; Grant, I. P. Wavelengths and radiative transition rates for selected lines of 2-, 3- and 4-electron systems for the elements from Ca to Cu. <i>Mon. Not. R. Astron. Soc.</i> 211, 589 (1984) United Kingdom |
| 03166 E | C02: Li ⁺ + C; Li ⁺ + Al; Li ⁺ + Si; Li ⁺ + Bi; Li ⁺ + Ag; Li ⁺ + Au | 0.2-1.8 keV | Santry, D. C.; Farmer, B. D. Stopping powers of C, Al, Si, Bi, Ag and Au for ⁷ Li ions. <i>Nucl. Instrum. Methods Phys. Res. B</i> 233, 889 (1984) Canada |
| 03167 F | C05: Undef | Undef | Tschalar, C. Energy dependent 8-dimensional multiple scattering distributions. <i>Nucl. Instrum. Methods Phys. Res. B</i> 233, 855 (1984) Switzerland |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|--------------|--|
| 03168 E | R03: He ⁺ + H ₂ O; He ⁺ + NH ₃ ; He ⁺ + CO; Ar ⁺ + H ₂ O; Ar ⁺ + NH ₃ ; Ar ⁺ + CO; Ne ⁺ + H ₂ O; Ne ⁺ + NH ₃ ; Ne ⁺ + CO | 3-6 keV | Marig, R. A.; Podryz, R.; Dostra, D. J.; Marig, A.; De Vries, A. E. Reactive sputtering of simple condensed gases by keV ions: II. Mass spectra. Nucl. Instrum. Methods Phys. Res. B 233, 476 (1984) The Netherlands |
| 03169 E | R02: He ⁺ + H ₂ O; He ⁺ + NH ₃ ; He ⁺ + CO; Ne ⁺ + H ₂ O; Ne ⁺ + NH ₃ ; Ne ⁺ + CO; Ar ⁺ + H ₂ O; Ar ⁺ + NH ₃ ; Ar ⁺ + CO | 3-6 keV | Marig, R. A.; Podryz, R.; Dostra, D. J.; Marig, A.; De Vries, A. E. Reactive sputtering of simple condensed gases by keV ions: III. Kinetic energy distributions. Nucl. Instrum. Methods Phys. Res. B 233, 483 (1984) The Netherlands |
| 03170 E-T | R04: hv + Ca ⁺ R36: hv + Ca ⁺ | 2.2-3.3 eV | Tarunov, A. T.; Khabibulov, S. B. Measurement of photoionization cross sections and lifetimes of excited states of the gullium atom by laser stepwise photoionization. Opt. Spectrosc. 56, 261 (1984) Soviet Union |
| 03171 E | A37: Hg ⁺ + H ₂ | 295 K | Syges, V. T.; Shvernov, V. A.; Vaisovich, V. Associative ionization during binary collisions of 6 ³ P ₁ excited mercury atoms. Opt. Spectrosc. 56, 341 (1984) Soviet Union |
| 03172 E | A12: In + He | 1000-1200 eV | Aleksandrov, E. B.; Vedenin, V. B.; Kulyakov, V. G. Broadening and shift of thallium resonance lines by helium. Opt. Spectrosc. 56, 365 (1984) Soviet Union |
| 03173 E | R03: e + Cd | 30-300 eV | Shimov, L. L.; Kuzin, I. V.; Garga, I. I. Experimental study of effective cross sections for excitation of the spectral lines of cadmium atoms by electron impact. Opt. Spectrosc. 56, 369 (1984) Soviet Union |
| 03174 E-T | R32: hv + H ₂ R36: hv + H ₂ | 17-400 eV | Kozlov, P. L.; Fedulyak, E. B. X-ray photoabsorption in molecular hydrogen in the 17-400-eV photon energy range. Opt. Spectrosc. 56, 373 (1984) Soviet Union |
| 03175 E | A33: Ar + Li ₂ ; Ar + LiH; Ar + H ₂ | 1.5J-4.2 eV | Mukhametyarov, B. E. Analytical and numerical calculations of the cross sections of the rotational excitation of diatomic molecules in collisions with atoms. Opt. Spectrosc. 56, 423 (1984) Soviet Union |
| 03176 E | A11: He ⁺ + He | 300-600 K | Karyasheko, S. V.; Malyshov, G. M.; Tolmachev, T. A. Quenching of excited helium atoms in the 2 ¹ P ₁ and 2 ³ P ₁ (sub 3) states by neutral atoms of the inert gases. Opt. Spectrosc. 56, 503 (1984) Soviet Union |
| 03177 E | C02: Cu + Cu; He + Cu; Ar + Cu; Kr + Cu; Xe + Cu | 2.5-100 keV | Karpuzov, B. S.; Yordanova, K. I. Inelastic energy-loss estimate for the Miesack-Kingler interatomic potential. Phys. Lett. A 126, 246 (1984) Bulgaria |
| 03178 E | R05: e + H; e + He R17: e + H; e + He | 250 eV | Byron, F. W., Jr.; Jouchais, G. J.; Piroux, B. On the theory of (e, 2h) reactions in atomic hydrogen and helium. Phys. Lett. A 126, 299 (1984) Belgium |
| 03179 E | A17: He ⁺ + He | | Valocco, A.; Bahal, M. Diatomic non-local model potential for He(2 ¹ S) + He(2 ³ S ₁). Phys. Lett. A 126, 391 (1984) France |
| 03180 E-T | C02: Sb + Si C04: Sb + Si | 300 keV | Tatarievics, J.; Krynicki, J.; Grószmichel, M.; Paprocki, K. Radiation damage distributions for 300 keV antineutrino ions implanted into silicon. Phys. Lett. A 127, 98 (1985) Poland |
| 03181 E | R35: e + Si; e + Ar; e + O ₂ ; e + Ne | 1.2-10 keV | Platten, H.; Schinits, G.; Wolke, J. Cross sections for K-shell ionization of Si and Ar by 0 keV to 10 keV electron impact. Phys. Lett. A 127, 83 (1985) West Germany |
| 03182 E | A03: H ⁺ + H ₂ ; H ⁺ + D ₂ A36: H ⁺ + H ₂ ; H ⁺ + D ₂ A18: H ⁺ + H ₂ ; H ⁺ + D ₂ | 2-25 keV | Lee, A. H.; Millman, D. G.; Butcher, E. I. Isotope effect in electron capture by protons into the 2S-state of hydrogen. Phys. Lett. A 127, 248 (1985) Australia |
| 03183 E-T | R35: ion mobility; diffusion | | Schenkel, E. W.; Vishland, L. A. The transport of slow ions in gases: experiment, theory, and applications. Phys. Rep. 130, 333 (1984) United States |

| Ref. No. | Abstract | Energy Range | Reference |
|-----------|---|----------------------|--|
| 33184 F | 732; Ionization | | Pat, A.R.T. The Wannier theory for two electrons escaping from a positive ion. Phys. Rep. 113, 169 (1984) United States |
| 33185 F-1 | 765; Photoemission from Cu | Unid | Courtais, P.; Rufner, S. Photoemission experiments on copper. Phys. Rep. 112, 51 (1984) West Germany |
| 33186 F | 765; Ionizability; Diffusion | | Kumar, V. The physics of swarms and some basic questions of kinetic theory. Phys. Rep. 112, 111 (1984) Australia |
| 33187 F | 765; Li + H ⁺ , He ⁺ , Ne ⁺ , Ar ⁺ , Kr ⁺ , Xe ⁺ | 2-20 keV | Amey, F.; Winter, H. Total single-electron-capture cross sections for impact of H ⁺ , He ⁺ , Ne ⁺ , and Ar ⁺ (2-20 keV) on Li. Phys. Rev. A 31, 67 (1985) Austria |
| 33188 F | 765; Ne + H ⁺ , He ⁺ , Ne ⁺ , Ar ⁺ , Kr ⁺ , Xe ⁺ , H ₂ ⁺ , H ₂ ²⁺ , H ₂ ³⁺ , H ₂ ⁴⁺ , H ₂ ⁵⁺ , H ₂ ⁶⁺ , H ₂ ⁷⁺ , H ₂ ⁸⁺ , H ₂ ⁹⁺ , H ₂ ¹⁰⁺ , H ₂ ¹¹⁺ , H ₂ ¹²⁺ , H ₂ ¹³⁺ , H ₂ ¹⁴⁺ , H ₂ ¹⁵⁺ , H ₂ ¹⁶⁺ , H ₂ ¹⁷⁺ , H ₂ ¹⁸⁺ , H ₂ ¹⁹⁺ , H ₂ ²⁰⁺ , H ₂ ²¹⁺ , H ₂ ²²⁺ , H ₂ ²³⁺ , H ₂ ²⁴⁺ , H ₂ ²⁵⁺ , H ₂ ²⁶⁺ , H ₂ ²⁷⁺ , H ₂ ²⁸⁺ , H ₂ ²⁹⁺ , H ₂ ³⁰⁺ | 0.4-21 keV | Chan, C.; Gray, F. J.; Varghese, S. L.; Hall, J. R.; Tennell, L. H. Electron-capture cross sections for low-energy highly charged neon and argon ions from molecular and atomic hydrogen. Phys. Rev. A 31, 71 (1985) United States |
| 33189 F | 777; H ₂ + H ⁺ , He ⁺ , Ne ⁺ , Ar ⁺ , Kr ⁺ , Xe ⁺ | 400 keV/amu | Clooven, S.; Gaillard, M. J.; Prist, J. C.; Benlilou, J.; Denis, A.; Deserjailles, J. Experimental study of the 1s and 2p populations of hydrogen atoms resulting from the interaction of 0.8-MeV/amu H ⁺ , He ⁺ , and Ne ⁺ projectiles with thin carbon foils. Phys. Rev. A 31, 94 (1984) France |
| 33190 F | 777; Xe + H ⁺ | 100 V | Cook, J. C.; Leichter, P. K. Collisional and radiative excitation transfer in Kr-Xe mixtures: quenching of Kr. Phys. Rev. A 31, 93 (1985) United States |
| 33191 F | 777; H ₂ + H ⁺ , He ⁺ , Ne ⁺ , Ar ⁺ , Kr ⁺ , Xe ⁺ | 0.15-1.5 MeV | Edwards, A. K.; Wool, P. R.; Ezell, R. L. Double ionization of H ₂ by fast H ⁺ and D ⁺ projectiles. Phys. Rev. A 31, 99 (1985) United States |
| 33192 F | 777; Ca + H ⁺ , He ⁺ , Ne ⁺ , Ar ⁺ , Kr ⁺ , Xe ⁺ | 771-821 eV | Hale, M. P.; Leone, S. R. Laser studies of near-resonant state-changing collisions of calcium (uses ⁴⁰ Ca) with the rare gases. Phys. Rev. A 31, 103 (1985) United States |
| 33193 F | 777; Ir, Pt, Pb + H ⁺ | 1.3-2.2 MeV | Jovik, S.; Powers, D. M-shell x-ray production cross sections in thick targets of Ir, Pt, and Pb by 1.3-2.2-MeV H ⁺ ions. Phys. Rev. A 31, 108 (1985) United States |
| 33194 F | 777; Li + H ⁺ | 4.3-5.5 eV | Christensen, P. B.; Norcross, D. W. Electron-impact excitation of Li II. A model study of wavefunction and collisional approximations and of resonance effects. Phys. Rev. A 31, 162 (1985) United States |
| 33195 F | 777; Ne + H ⁺ , He ⁺ , Ne ⁺ , Ar ⁺ , Kr ⁺ , Xe ⁺ | 0.01-1.0 MeV [2.0-1] | Cohen, J. S.; Martin, K. L.; Laaw, S. P. Theoretical calculation of Penning-ionization cross sections for collisions of Ne(2 ¹ S ₂) with sodium atoms. Phys. Rev. A 31, 157 (1985) United States |
| 33196 F | 777; Xe + H ⁺ | 1000 eV | McCarthy, I. P.; Welby, E. Noncoplanar symmetric (e,3e) reaction on argon. Phys. Rev. A 31, 160 (1985) Australia |
| 33197 F | 777; Xe + H ⁺ | Unid | Vierke, T.; Andersen, T.; Keivola, M.; Uusimäki, O. Perturbations in the B ¹ (² g ⁺) state of Xe ⁺ immediately below the predissociation limit, studied by high-resolution optical-optical double-resonance photofragment spectroscopy. Phys. Rev. A 31, 167 (1985) Denmark |

| Ref. No. | Isotants | Energy Range | Reference |
|-----------|--|------------------|---|
| 03190 E | 107; 110 + C | 033 keV | Cooker, R.; Macdonald, S. Autoionizing states in Li ⁺ observed in optical emission spectra. <i>Phys. Rev. A</i> 31, 371 (1985) United States |
| 03191 E | 120; 120 + H | 03-0.120 eV | Leino, P. A.; Copeland, K. L. Partial radiative recombination cross sections for excited states of hydrogen. <i>Phys. Rev. A</i> 31, 397 (1985) United States |
| 03192 E | 120; 120 + He 120; 120 + He 120; 120 + He | 050-020 eV | Donnerberg, L.; Yu, Y.; Miller, T. G. Ionization, excitation of high-lying atomic states, and molecular fluorescence in the vapor region of lambda = 855.7 and 857.6 nm. <i>Phys. Rev. A</i> 31, 395 (1985) United States |
| 03193 E | 127; 127 + He | Unref | Shaw, D. S.; Hubler, J. S. Analysis of the polarization-dependent rate of association ionization of radiatively excited He(2p) atoms. <i>Phys. Rev. A</i> 31, 310 (1985) United States |
| 03194 E | 130; 130 + He 130; 130 + He | Unref | Leung, T.; Sun, M.; Pillet, P.; Callaghan, V. F. Angular distributions and branching ratios of the electron-impact ionization of He(2p) states. <i>Phys. Rev. A</i> 31, 218 (1985) United States |
| 03195 E | 130; 130 + He 130; 130 + He | 1-1.3 eV | McMahon, P. V.; Schaefer, C. H. Doubly excited states of boronlike and neonlike. <i>Phys. Rev. A</i> 31, 250 (1985) United States |
| 03196 E | 133; 133 + He; 133 + He; 133 + He | 370 eV | Zeng, X.; Yu, Z.; Call, F.; Hiron, K.; Schreiber, D.; Kasper, K. Experimental determination of the rate constants for spin exchange between optically pumped He, He, and He atoms and He ⁺ nuclei in alkali-metal-noble-gas van der Waals molecules. <i>Phys. Rev. A</i> 31, 260 (1985) United States |
| 03197 E | 133; 133 + He | Unref | Costick, V. Summation of four-operator perturbation series: application to step-atom intensity-dependent correlations. <i>Phys. Rev. A</i> 31, 279 (1985) France |
| 03198 E | 137; 137 + Cr; 137 + Ni; 137 + Si; 137 + Zn; 137 + V; 137 + Pb; 137 + Ta; 137 + W; 137 + Re; 137 + Fe; 137 + Co; 137 + Ph; 137 + Ir | 3.5-3.5 eV | Stehman, R. A.; Clifles, B. D.; Gros, S.; Hoo, S. B.; Hainy, E. B. Zero-order contribution calculation of photoelectron cross sections and photoelectron spectra of transition-metal anions. <i>Phys. Rev. A</i> 31, 297 (1985) United States |
| 03199 E-T | 107; 107 + He | 300 keV | Bruch, J.; Chang, K. T.; Luke, V. L.; Luberson, J. C. Recalibration of the KLL laser spectra of carbon. <i>Phys. Rev. A</i> 31, 313 (1985) United States |
| 03200 E | 107; 107 | Unref | Dimitrijevic, M. S.; Sahal-Bruchot, S. Comparison of measured and calculated Stark broadening parameters for neutral-helium lines. <i>Phys. Rev. A</i> 31, 316 (1985) Yugoslavia |
| 03201 E | 130; 130 + Ca; 130 + Sr; 130 + Ba | 317-370 nm | Hullins, O. C.; Chinn, S.; Senter, J. E., III; Keller, J. S.; Berry, P. S. Angular distributions of photoelectrons from excited valence ^{2p, 3p} states of Ca, Sr, and Ba. <i>Phys. Rev. A</i> 31, 321 (1985) United States |
| 03202 E | 103; 103 + He 103; 103 + He 103; 103 + He | 0.61-10 keV/atom | Kimura, A.; Olson, R. E. Electron capture in pseudo-two-electron systems: Ar ⁺ + He. <i>Phys. Rev. A</i> 31, 339 (1985) United States |
| 03203 E | 137; 137 + He | 7-4000 keV | Feld, K. P.; Goffe, T. V.; Dumais, R. D.; Johnson, L. H. Cross sections for ionization of water vapor by 7-4000-keV protons. <i>Phys. Rev. A</i> 31, 392 (1985) United States |
| 03204 E | 130; 130 + He 130; 130 + He | 0.233-5.03 eV | Buchkardt, C. H.; Gervog, B. P.; Leventhal, J. J. Off-resonance production of ions in laser-excited sodium vapor. <i>Phys. Rev. A</i> 31, 555 (1985) United States |

| Ref. No. | Isotants | Energy Range | Reference |
|----------|---|--------------------|--|
| 03218 F | 037: hv + Ca 036: hv + Ca | 545-536 nm | Klots, C. E.; Compton, R. B. Effects of uniform dc electric fields on multiphoton ionization of cesium atoms. Phys. Rev. A 31, 525 (1985) United States |
| 03219 F | 037: hv + H ⁺ 036: hv + H ⁺ | 365 nm | Glab, P. L.; BayEck, H. G. Stark-induced resonances in the photoionization of hydrogen. Phys. Rev. A 31, 539 (1985) United States |
| 03220 F | 036: v + H ⁺ ; e + C ²⁺ ; e + Ca ⁺ | 0-5 eV | Griffin, D. C.; Pindrolik, R. S.; Dettcher, C. Distorted-wave calculations of dielectronic recombination cross sections in the Li isoelectronic sequence. Phys. Rev. A 31, 568 (1985) United States |
| 03221 F | 036: K ⁺ + Na 037: K ⁺ + Na | 0.3025-2.23 keV/nm | Hsu, Y. P.; Kinsca, R.; Olson, R. K. Laser-assisted charge-transfer collisions: K ⁺ + Na. Phys. Rev. A 31, 576 (1985) United States |
| 03222 F | 033: e + H ₂ | 1-10 eV | Jordan, K. A.; Emery, R. J. Energy-modified frame-transformation theory: application to near-threshold vibrational excitation of hydrogen molecules by electrons. Phys. Rev. A 31, 585 (1985) United States |
| 03223 F | 033: H ⁺ + He ⁺ 036: H ⁺ + He ⁺ | 1.2-7.5 keV | Kings, A.; Kim, C. A. Unified treatment of slow atom-atom and ion-atom collisions. Phys. Rev. A 31, 593 (1985) United States |
| 03224 F | 037: Hg ²⁺ + C | 48 keV | Palinkas, J.; Pedrazzini, G. J.; Church, P. A.; Kosefich, E. A.; Fulton, C. A.; Fytton, R. L.; Yang, D. S. Alignment of H _u - and H _g -like F states of 40-keV foil-excited Hg ions. Phys. Rev. A 31, 590 (1985) United States |
| 03225 F | 036: hv + H ₂ ; hv + Hg ⁺ | 5-40 eV | Roscigno, T. B. Atomic photoionization by the complex-basis-function expansion method: application to ground-state and metastable Hg. Phys. Rev. A 31, 607 (1985) United States |
| 03226 F | 036: hv + H ₂ ⁺ | 3-8 a.u. | Roscigno, T. B.; McCurdy, C. W. Locally complex distortions of the energy spectrum in the calculation of scattering amplitudes and photoionization cross sections. Phys. Rev. A 31, 624 (1985) United States |
| 03227 F | 033: H ⁺ + H 036: H ⁺ + H 038: H ⁺ + H | 0.02-10 keV | Buryakovic, J.; Dobe, I. J. Population of Rydberg states by electron capture in fast-ion-atom collisions. Phys. Rev. A 31, 638 (1985) West Germany |
| 03228 F | 032: e + H ₂ 037: e + H ₂ | 0-10 eV | Bornan, R.; Rindler, C.; Doehle, H. Projection-operator calculations for molecular shape resonances: the ² Σ _u ⁺ resonance in electron-hydrogen scattering. Phys. Rev. A 31, 641 (1985) West Germany |
| 03229 F | 033: e + He 037: e + He | 100-200 eV | Kumar, R.; Srivastava, R.; Tripathi, A. K. Systematic approach for discrete excitation of helium in the Coulomb-Born model. Phys. Rev. A 31, 652 (1985) India |
| 03230 F | 031: Under | | Ho, Y. S.; Chu, S. I. Semiclassical many-node Floquet theory: III. SU (2) dynamical evolution of three-level systems in intense microwave fields. Phys. Rev. A 31, 659 (1985) United States |
| 03231 F | 033: He ⁺ + He; He ⁺ + CH ₂ ; He ⁺ + Ar; He ⁺ + He; He ⁺ + CH ₂ ; He ⁺ + Ar; He ⁺ + He; He ⁺ + CH ₂ ; He ⁺ + Ar; 038: He ⁺ + He; He ⁺ + CH ₂ ; He ⁺ + Ar; He ⁺ + He; He ⁺ + CH ₂ ; He ⁺ + Ar; He ⁺ + He; He ⁺ + CH ₂ ; He ⁺ + Ar | 73-133 keV | Stoh, A.; Schneider, D.; Schneider, Y.; Doucas, T. J. R.; Volts, G.; Schirmer, G.; Lohs, H.; Stoltenberg, W. Selective production of H _u , H _g , and F-like K vacancy states in fast He projectiles studied by X-ray-charge transfer spectroscopy. Phys. Rev. A 31, 684 (1985) West Germany |
| 03232 F | 036: hv + He ⁺ | 67.5-91 eV | Liedle, D. W.; Foyratt, T. A.; Becker, V.; Kohris, P. H.; Traudole, C. K.; Kerkhoff, R. J.; Shirley, D. A. Photoionization of helium above the He ⁺ (n = 2) threshold: autoionization and final-state symmetry. Phys. Rev. A 31, 710 (1985) United States |

| Ref. No. | Subjects | Energy Range | Reference |
|----------|---|--------------|--|
| 33241 F | A20: He ⁺ + He B37: He ⁺ + He | 322-323 eV | Ganguly, S.; Bui Bastidar, K.; Bui Bastidar, T. K. Charge transfer in helium in a laser field. <i>Phys. Rev. A</i> 31, 1171 (1985) India |
| 33252 E | B36: He + H ₂ | 193-1000 nm | Bjorke, K.; Kuchru, B.; Sela, H. Three-photon double-resonance spectroscopy of autoionizing Rydberg states in H ₂ . <i>Phys. Rev. A</i> 31, 1206 (1985) United States |
| 33263 E | C30: Zn ²⁺ + Si | 10-200 keV | Yarkulov, V. Excites of heavy ions in solids. <i>Radiat. Eff.</i> 83, 233 (1980) Soviet Union |
| 33266 E | C33: Ca ⁺ + Si | 15-350 keV | Behar, H.; Bismack, J. P.; Picotter, P.F.P.; Fink, D.; Deb, C. V.; Filho, L.; Olivieri, C. A.; Patnaik, B. K.; De Souza, J. P.; Zwickler, F. C. Range and range straggling of 15 to 350 keV ⁶⁰ Ca as amorphous silicon. 531; <i>Radiat. Eff. Lett.</i> 85, 117 (1980) Brazil |
| 03285 E | F03: e + Ti ⁺ | 10-200 eV | Kuchanov, A. K.; Saimov, Y. N. Measurement of electron-impact excitation cross sections for Ti II. <i>Sov. Astron.-AJ</i> 27, 155 (1983) Soviet Union |
| 03296 E | F03: e + Fe | 5-200 eV | Felozov, P. A.; Solzov, Y. N. Cross sections for excitation of the 3p ⁶ and 3p ⁵ states of the iron atom by electron impact. <i>Sov. Astron.-AJ</i> 27, 336 (1983) Soviet Union |
| 03297 F | F00: Review | varif | Bochkarev, N. G. Compilation of atomic parameters and the cross sections and rates of atomic processes of astrophysical interest. <i>Sov. Astron.-AJ</i> 27, 716 (1983) Soviet Union |
| 33298 F | G31: H ⁻ | | Karbovanets, B. I.; Lazer, V. Y.; Chibisov, B. I. Two-electron decay of a negative ion in a constant uniform electric field. <i>Sov. Phys.-Dokl.</i> 29, 315 (1980) Soviet Union |
| 33299 E | D36: e + H | 100-200 eV | Kanaev, I. A.; Sakarov, B. S.; Vishin, A. N.; Petrov, V. N.; Yarovlev, V. B.; Yashin, Y. P. Influence of spin polarization of electrons on secondary electron emission. <i>Sov. Phys.-Solid State</i> 26, 1322 (1980) Soviet Union |
| 33250 E | D32: Review G00: Sputtering | varif | Carter, G. Some problems and prospects in high erosion yield sputtering. <i>Vacuum</i> 30, 819 (1980) United Kingdom |
| 03251 E | D02: He ⁺ + Ag; He ⁺ + Au | 1 keV | Onggaard, J.; Taglauer, E. Depth profiling of thin films of Ag and Au on Mo deposited on a quartz crystal microbalance. <i>Vacuum</i> 30, 831 (1980) Denmark |
| 03252 F | D01: Ar ⁺ + Ca | 5 keV | Webb, S. P.; Harrison, S. E., Jr. A molecular dynamics computer simulation of the time dependence of surface damage production in ion irradiated metal targets. <i>Vacuum</i> 30, 847 (1980) United States |
| 33253 E | D33: Review D00: Review D12: Review E30: Photon; Electron emission | 1-100 keV | Thomas, E. B. Ion bombardment induced photon and Auger emission for surface analysis. <i>Vacuum</i> 30, 1231 (1980) United States |
| 03254 E | A05: He ⁺ + Ar; He ⁺ + Ar; He ⁺ + H ₂ | 25-900 eV | Oettinger, C.; Yang, S. L(sub alpha) emission from low-energy collisions He ⁺ + Ar, He ⁺ + Ar, He ⁺ + H ₂ . <i>Z. Naturforsch.</i> A 39, 1296 (1980) West Germany |
| 03255 E | A10: He ⁺ + He | 0 eV | Van den Berg, F.; Mill, P.; Hogenstern, B. The effect of electron-spin uncoupling on differential scattering cross sections for excited alkali-rare gas systems. <i>Z. Phys.</i> A 329, 1 (1985) The Netherlands |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|-----------------|--|
| 03256 E | E06: Ar + Xe | 11-12 eV | Braun, S.; Pfeifferberger-Parthl, H. The angular distribution of photoelectrons from zinc atoms. <i>Z. Phys. A</i> 323, 37 (1985) West Germany |
| 33257 E | A35: Ar* + H ₂ ; Ar** + H ₂ | 50-700 eV | Oettinger, C.; Yang, M. L(sub alpha) emission from Ar* + H ₂ collisions in the threshold energy region. <i>Z. Phys. A</i> 320, 51 (1985) West Germany |
| 33258 E | A33: Ar* + H | 200-800 eV | Baller, G.; Oettinger, C.; Yang, M. L(sub alpha) emission from collisional excitation of H atoms by threshold energy Ar* ions. <i>Z. Phys. A</i> 320, 61 (1985) West Germany |
| 33259 E | A33: Li* + He A37: Li* + He A18: Li* + He | 2 keV | Straton, P.v.d.; Koceraad, F. M.; Norgewester, H. Quasimolecular or kinematical broadening of autoionization electron spectra from Li*/He collisions? A coincidence study. <i>Z. Phys. A</i> 323, 81 (1985) The Netherlands |
| 03260 E | E25: e + He E17: e + He | 256 eV | Baller-Fiedler, H.; Schlenker, P.; Jung, G.; Ehrhardt, H. Absolute triple differential cross sections for electron impact ionization of helium: comparison between experimental and theoretical results at 256 eV collision energy. <i>Z. Phys. A</i> 323, 89 (1985) West Germany |
| 33261 E | A33: H* + H ₂ ; H* + H ₂ ; H* + O ₂ ; H* + CO ₂ A18: H* + H ₂ ; H* + H ₂ ; H* + O ₂ ; H* + CO ₂ | 20-180 eV | Beye, U.; Linder, F. Vibrationally inelastic scattering of H- ions from H ₂ , O ₂ , and CO ₂ . <i>Z. Phys. A</i> 323, 95 (1985) West Germany |
| 33262 E | A37: He* + Ar | 500-1.200 eV/mc | Bussert, U.; Argeol, Y.; Allan, R. J.; Ruf, H. W.; Rotop, E. Polarization effects in ionizing thermal energy collisions of laser-excited He(3p ² D ₃) atoms with Ar atoms. <i>Z. Phys. A</i> 323, 135 (1985) West Germany |
| 03263 E-T | A03: Na* + Na* | 20-45 eV (C.B.) | Bähring, A.; Meyer, E.; Hertel, I. V.; Schmidt, H. Coherence effects in low energy Na*(3p) + Na* scattering: experiment and semiclassical calculations. <i>Z. Phys. A</i> 323, 161 (1985) West Germany |
| 33264 E | A33: Ar + H A05: Ar + H | 100-1000 eV | Grosser, J.; Krüger, H. Analysis of hydrogen L gamma alpha emission by the intensity variation in a electric field. <i>Z. Phys. A</i> 323, 155 (1985) West Germany |
| 33265 E | A33: Cl** + Ar A35: Cl** + Ar A18: Cl** + Ar | 2.5-20 keV | Schach, B.; Schmidt-Hocking, H.; Ferrays, F.; Johnson, B. S.; Jones, K. W.; Heron, H. X-ray spectroscopy of Cl-Ar quasi-molecular orbitals from L alpha sigma - 2p tau transitions. <i>Z. Phys. A</i> 323, 185 (1985) West Germany |
| 33266 E | A33: Na* + Na A11: Na* + Na | 0-200 eV | Allen, R. J.; Korsch, H. J. Two-state curve crossing processes involving rotational coupling in the Na ₂ ⁺ molecular ion. <i>Z. Phys. A</i> 320, 191 (1985) West Germany |
| 33267 E | D12: H* + Cu; H* + Au; H* + Si; H ₂ * + Cu; E ₁ * + Au; H ₂ * + Si; He* + Cu; He* + Au; He* + Si | 50-300 keV | Frohling, S.; Andre, H. J. Influence of the surface electric field in ion-beam-surface interaction at grazing incidence. <i>Z. Phys. A</i> 320, 207 (1985) West Germany |
| 03268 E | A06: I + Th; I + U; Au + U A07: I + Pb; I + H; Au + U A18: I + Pb; I + U; Au + U | 466-630 MeV | Nehler, G.; de Buss, T.; Reinhardt, J.; Soff, G.; Müller, U. Delta electron emission in superheavy quasistates with Z greater than or approximately 137. <i>Z. Phys. A</i> 323, 355 (1985) West Germany |
| 33269 E | D31: H J03: H Stark broadening | | Nathys, G. Hydrogen lines Stark broadening tables in the presence of a magnetic field. <i>Astron. Astrophys. Suppl. Ser.</i> 59, 229 (1985) Switzerland |
| 03270 E-T | E05: e + H E17: e + H | 250 eV | Weigold, F. Electron momentum spectroscopy - some recent developments. <i>Comments At. Mol. Phys.</i> 15, 223 (1984) Australia |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|------------------------------|--|
| 03271 E-T | E03: e + CH ₄ ; e + H ₂ O F17: e + CH ₄ ; e + H ₂ O F19: e + CO | 7-63 eV | Canilioni, B.; Gianturco, F. A.; Giardini Guidoni, A. Wavefunction and mechanism from electron scattering processes: highlights of a symposium. <i>Comptes At. Mol. Phys.</i> 15, 243 (1980) Italy |
| 03272 F | A36: H ⁺ + He A18: H ⁺ + He | 53-1533 keV | Roy, P. K.; Gaha, S.; Sinha, G.; Sil, B. C. Differential and total cross-sections for electron capture from helium by protons and positrons. <i>Indian J. Pure Appl. Phys.</i> 22, 390 (1984) India |
| 03273 F | E33: e + H F17: e + H | 20-500 eV | Saha, B. C.; Saha, T. P.; Sil, B. C. Asymptotic behaviour of e ⁻ + H excitation cross sections. <i>Indian J. Phys.</i> B 55, 16 (1991) India |
| 03274 E-T | D30: undef: J04: Electron ejection | 2.4-63 keV | Sixit, S. D.; Ghosh, S. B. On SEK by neutrals and negative ions. <i>Indian J. Phys.</i> B 55, 87 (1981) India |
| 03275 F | A06: H ⁺ + C; H ⁺ + B; H ⁺ + O; H ⁺ + Ne; H ⁺ + Ar | 2.2-6 MeV | Boy, A.; Bhattacharyya, S. Studies in capture of K-electrons by fast protons. <i>Indian J. Phys.</i> B 55, 287 (1981) India |
| 03276 F | E33: e + H E17: e + H | 13.9-16.5 eV | Bose R. Mazunder, P. S.; Ghosh, A. S. Excitation of a n = 2 level of atomic hydrogen by electron impact. <i>Indian J. Phys.</i> B 55, 830 (1981) India |
| 03277 E | D22: He ⁺ + Si | 1.3 keV | Barish, E. L.; Vithavagn, D. J.; Mayer, T. R. Sputtering of chlorinated silicon surfaces studied by secondary ion mass spectrometry and ion scattering spectroscopy. <i>J. Appl. Phys.</i> 57, 1336 (1985) United States |
| 03278 E | F03: e + Y | 2-200 eV | Kuchener, A. B.; Smirnov, V. B. Effective excitation cross sections of transitions of the yttrium atom. <i>J. Appl. Spectrosc.</i> 83, 360 (1980) Soviet Union |
| 03279 F | A03: He + He | Thermal | Baran, V. N.; Kononchuk, G. L.; Yakovov, A. V. Transitions between fine-structure components of neon in inelastic collisions of neon and helium atoms. <i>J. Appl. Spectrosc.</i> 61, 863 (1984) Soviet Union |
| 03280 E | D08: He ⁺ + Au | 580-700 keV | Kisara, K.; Mannani, N. Backscattered He ⁺ ions at the glancing incidence on Au target. <i>J. Phys. Soc. Jpn.</i> 53, 3372 (1984) Japan |
| 03281 E | A30: He ²⁺ + H ₂ ; He ²⁺ + H ₂ | 3.8-2.3 keV | Kobayashi, H.; Iwai, Y.; Kaneko, Y.; Kinoshita, M.; Matsunoto, A.; Ohtani, S.; Okano, K.; Takagi, S.; Tawara, H.; Tsurubuchi, S. Translational-energy spectroscopy of one-electron capture processes in He ²⁺ -H ₂ and H ₂ collisions. <i>J. Phys. Soc. Jpn.</i> 53, 3736 (1984) Japan |
| 03282 E-T | A14: undef | 297 K | Komara, A. N. The average cos theta approach to the theoretical calculation of thermal energy ion-dipolar molecule reaction rate constant. <i>J. Phys. [Orsay] Lett.</i> 45, 1083 (1984) Greece |
| 03283 F | A02: He ⁺ + H ₂ A33: He ⁺ + H ₂ | 67 meV | Bocharov, V.; Robert, J.; Colomb de Dassenat, I.; Reinhardt, J.; Baudou, J. Differential measurements on elastic and rotationally inelastic He ⁺ (² P _{1/2})-H ₂ collisions at thermal energies. <i>J. Phys. [Orsay] Lett.</i> 46, 13 (1985) France |
| 03284 F | E32: e + He | 53-1533 eV | Biswas, A. K. Elastic scattering of electrons by hydrogen atoms in the (2p) state. <i>Chem. J. Phys.</i> 30, 930 (1984) India |
| 03285 F | A36: He ⁺ + H | 3-5 eV | Ben'shikov, L. I. Ion-atom charge exchange at low energies. <i>Sov. Phys.-JETP</i> 50, 675 (1983) Soviet Union |
| 03286 E-T | H30: He + K | 13333-13363 cm ⁻¹ | Dabagyan, A. A.; Novosyan, N. K.; Ovakimyan, T. O.; Shearonyan, S. V. Stimulated processes in potassium vapor in the presence of a buffer gas. <i>Sov. Phys.-JETP</i> 50, 700 (1983) Soviet Union |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|---|---|---|
| 03207 F | H11: He + He | 2300-2052 eV | Krashev, I. V. Translational disequilibrium induced by resonance radiation pressure in a mixture of gases. <i>Sov. Phys.-JETP</i> 50, 939 (1983) Soviet Union |
| 03208 F | A06: He ⁺ + He | 0.01-50 keV | Banan, I. L.; Krashev, I. V. Charge exchange of a molecular ion on a neutral molecule with allowance for vibrational transitions in the collision process. <i>Sov. Phys.-JETP</i> 50, 1130 (1983) Soviet Union |
| 03209 E-T | A36: C ²⁺ + He A37: C ³⁺ + He | 13 ⁺ -12x10 ⁺ cm/sec | Karbovants, M. I.; Lazar, V. Y.; Chibisov, M. I. Resonant exchange between two electrons. <i>Sov. Phys.-JETP</i> 59, 47 (1984) Soviet Union |
| 03210 E-T | H11: He + He | 503) A ⁰ | Griachuk, V. A.; Karantsev, A. P.; Kuria, Z. F.; Nagova, M. L.; Syabeko, G. A.; Sokolovich, G. I.; Yakovlev, V. P. Scattering of atoms by the forces of stimulated radiation pressure. <i>Sov. Phys.-JETP</i> 59, 56 (1984) Soviet Union |
| 03211 F | E22: e + PBT E17: e + PBT | Under | Benkov, Y. B.; Jetrovskii, V. B.; Tol'nov, B. A. New type of cross section singularity in backward scattering: the Coulomb glory. <i>Sov. Phys.-JETP</i> 59, 257 (1984) Soviet Union |
| 03212 E | H11: He ⁺ + He H12: He ⁺ + He | Under | Malikov, M. B.; Savel'ev, A. B.; Seimov, V. V. Determination of the translational-relaxation cross sections from the measured Riche contraction in the coherent anti-Stokes Raman spectra of the He ₂ molecule. <i>Sov. Phys.-JETP Lett.</i> 39, 60 (1984) Soviet Union |
| 03213 E | H31: He + He | 549) A ⁰ | Balykin, V. I.; Letokhov, V. S.; Silerov, A. I. Radiative collision of an atomic beam by two-dimensional cooling by a laser beam. <i>Sov. Phys.-JETP Lett.</i> 40, 1026 (1984) Soviet Union |
| 03214 F | E26: e + Ar ¹⁶⁺ ; e + Fe ²⁶⁺ | Under | Fradhan, A. K. Recombination-cascade x-ray spectra of highly charged helium-like ions. <i>Astrophys. J., Part 1</i> 288, 826 (1985) United States |
| 03215 F | H26: He + Li Sey | Under | Tully, J. A. On the Z-dependence of lithium-like photoionization cross sections. <i>Astrophys. J., Part 1</i> 288, 831 (1985) France |
| 03216 F | J03: Photoionization | 0-8000 eV | Yeh, J. J.; Lindau, I. Atomic subshell photoionization cross sections and asymmetry parameters: 1 less than or equal to Z less than or equal to 103. <i>At. Data Nucl. Data Tables</i> 32, 1 (1985) United States |
| 03217 E | J01: Electron capture | | Tamura, N.; Kato, T.; Sakai, Y. Cross sections for electron capture and loss by positive ions in collisions with atomic and molecular hydrogen. <i>At. Data Nucl. Data Tables</i> 32, 235 (1985) Japan |
| 03218 E | H20: General | | MacDonald, H. J.; O'Connor, D. J. Low energy ion-surface interaction--atomic physics in an ordered atom environment. <i>Aust. J. Phys.</i> 37, 309 (1984) United Kingdom |
| 03219 E | A03: He + Cd; He ⁺ + He; He ⁺ + He A37: He ⁺ + Cd; He ⁺ + He; He ⁺ + He D12: He ⁺ + Cd; He ⁺ + He; He ⁺ + He | 0.1-1.0 keV | Harrison, H. F.; Spicer, B. H.; Cohen, D. D. L-subshell x-ray production by 133-257 keV/amu ions. <i>Aust. J. Phys.</i> 37, 475 (1984) Australia |
| 03220 E-T | H33: He + CO ₂ | 516 nm | Herthly, C. S.; Vallauri, B.; Versnold, N.; Zimmerman, U.; Singer, K. Depolarized Rayleigh scattering from CO ₂ : an experimental and molecular dynamics investigation. <i>Ber. Bunsenges. Phys. Chem.</i> 89, 78 (1985) United States |
| 03221 E-T | A72: He + He A11: He + He; Ar + He A17: He + He; Ar + He A18: He + He | 1-2.5 keV/s; 3-3 eV | Candori, M.; Pirani, F.; Veschiocattivi, F.; Giustarzo, V. A.; Lenzo, G. T.; Petrella, G. Interaction potentials and collisional (V,V) transfer in He-He and Ar-He gaseous mixtures. <i>Chem. Phys.</i> 92, 345 (1985) Italy |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|------------------|--|
| 33314 F | D35: hv + OH | 9-13 eV | Van Dishoeck, E. F.; Van Rosert, A. C.; Allison, A. C.; Balgarni, A. Announcements in the photodissociation of OH by absorption into coupled ν_2 states: adiabatic and diabatic formulations. <i>J. Chem. Phys.</i> 81, 5779 (1984) The Netherlands |
| 33315 F | A16: $F + H_2$ | 3-3.8 eV | Ashton, C. J.; Vuckobran, J. T.; Schubert, F. E. An improved quasiclassical trajectory method for state to state reactive scattering cross sections and rate constants. <i>J. Chem. Phys.</i> 81, 5786 (1984) United States |
| 33316 F | D39: KCl + He | 152-2133 K | Kawano, M.; Koyasu, T. Thermal positive ion production from KCl impinging upon He: comparison between theory and experiment. <i>J. Chem. Phys.</i> 81, 6312 (1984) Japan |
| 33317 F | D33: hv + NO + LiF | 0-2000 K | Luchbene, S. P.; Fully, J. C. Laser induced thermal desorption from surface. <i>J. Chem. Phys.</i> 81, 6313 (1984) United States |
| 33318 F | A11: CO ⁺ + H ₂ A17: CO ⁺ + H ₂ | 3-250 meV | Bacic, Z.; Schinke, R.; Bierckmann, J.-H.-F. Vibrational relaxation of CO ($v = 1$) in collisions with H ₂ . I. Potential energy surface and test of dynamical approximations. <i>J. Chem. Phys.</i> 82, 236 (1985) West Germany |
| 33319 F | A11: CO ⁺ + H ₂ | 3-255 meV | Bacic, Z.; Schinke, R.; Bierckmann, J.-H.-F. Vibrational relaxation of CO ($v = 1$) in collisions with H ₂ . II. Influence of H ₂ rotation. <i>J. Chem. Phys.</i> 82, 245 (1985) West Germany |
| 33320 E | H36: 3hv + C | 2873 Å | Pratt, S. T.; Dehmer, J. L.; Dehmer, P. A. Photoelectron angular distributions from resonant multiphoton ionization of atomic carbon. <i>J. Chem. Phys.</i> 82, 676 (1985) United States |
| 33321 E | A37: He ⁺ + Ar | 3.31-1.3 eV | Aguliar-Bavero, A.; Brunetti, G.; Bosi, S.; Vecchiocetti, F.; Volpi, S. G. Velocity dependence of the cross section for Penning and associative ionization of argon atoms by metastable neon atoms. <i>J. Chem. Phys.</i> 82, 771 (1985) Italy |
| 33322 E | D13: NO + Pt | 150-850 K | King, D. S.; Mantall, D. A.; Cavanagh, S. F. NO thermallyisorbed from a saturation coverage on Pt(111): internal state distributions. <i>J. Chem. Phys.</i> 82, 1306 (1985) United States |
| 33323 E | A18: $O + H_2; O + D_2; O + HD$ | 297-873 K | Prosser, R.; Gordon, J. J. The kinetic isotope effect in the reaction of O(³ P) with H ₂ , D ₂ and HD. <i>J. Chem. Phys.</i> 82, 1291 (1985) United States |
| 33324 F | A16: OH + H ₂ | 200-2800 K | Issacson, A. D.; Sund, H. T.; Shi, S. H.; Truhler, D. G. Improved canonical and microcanonical variational transition state theory calculations for a polyatomic reaction: OH + H ₂ going to H ₂ O + H. <i>J. Chem. Phys.</i> 82, 1338 (1985) United States |
| 33325 E | D39: CO ₂ ⁺ + Ag; CO ⁺ + Ag | 370-883 K | Bisovich, J.; Houston, P. L.; Merrill, G. P. Vibrational relaxation of carbon dioxide (v_2) and carbon monoxide ($v = 2$) during gas-surface collisions. <i>J. Chem. Phys.</i> 82, 1577 (1985) United States |
| 33326 F | E33: $He + He$ E17: $He + He$ | 17-323 eV | Srivastava, R.; Kumar, R.; Tripathi, A. B. 2 ¹ S excitation of helium: a precise distorted wave approach. <i>J. Chem. Phys.</i> 82, 1816 (1985) India |
| 33327 F | A14: $H + D_2; HD + D$ A17: $H + D_2; HD + D$ | 3.55-1.1 eV | Blain, H. C.; Truhler, D. G.; Garrett, B. C. Effect of bending potential on calculated product-state distributions for the reaction $H + D_2$ going to $HD + D$. <i>J. Chem. Phys.</i> 82, 2327 (1985) United States |
| 33328 E | E33: $O + O_2$ | 233 eV | Ajello, J. M.; Franklin, D. A study of the extreme ultraviolet spectrum of O ₂ by electron impact. <i>J. Chem. Phys.</i> 82, 2519 (1985) United States |
| 33329 F-7 | A32: He ⁺ + H ₂ ; He ⁺ + D ₂ A37: He ⁺ + H ₂ ; He ⁺ + D ₂ A15: He ⁺ + H ₂ ; He ⁺ + D ₂ A17: He ⁺ + He; He ⁺ + D ₂ A18: He ⁺ + H ₂ ; He ⁺ + D ₂ | 3.5-3.2 kcal/mol | Mertis, D. B.; Sinks, P. E. Differential nonreactive scattering of He ⁺ (2 ¹ S, 2 ³ S) by D ₂ and H ₂ : anisotropic optical potentials and comparison with ab initio theory. <i>J. Chem. Phys.</i> 82, 2633 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|--------------------------|---|
| 33330 E | A16: D + H ₂ A16: D + H ₂ | 3.28-3.28 eV | Abdesalbi, B.; Kouri, D. J.; Szu, Y.; Sauer, R. Quantum mechanical study of the D + H ₂ going to HD + H reaction. J. Chem. Phys. 82, 2653 (1985) United States |
| 33331 E | A16: H + H ₂ A17: H + H ₂ | Undef | Barnett, B. H.; Reynolds, P. J.; Lester, C. A., Jr. H + H ₂ reaction: a fixed-node quantum Monte Carlo study. J. Chem. Phys. 82, 2780 (1985) United States |
| 03332 E | D17: O ₂ + Pt | 27-333 °C | Berry, G. S.; Ross, P. H. A work function change study of oxygen adsorption on Pt(111) and Pt(100). J. Chem. Phys. 82, 2772 (1985) United States |
| 33333 E | A16: F + H ₂ A18: F + H ₂ | 3.7-3.8 kcal/mol | Benmark, D. H.; Podko, A. H.; Robinson, J. H.; Hayden, C. C.; Lee, Y. T. Molecular beam studies of the F + H ₂ reaction. J. Chem. Phys. 82, 3785 (1985) United States |
| 33334 E | A16: F + D ₂ ; F + HD A16: F + D ₂ ; F + HD | 3.8-3.3 kcal/mol | Benmark, D. H.; Podko, A. H.; Robinson, J. H.; Hayden, C. C.; Shobatake, K.; Sparks, B. K.; Schafer, I. P.; Lee, Y. T. Molecular beam studies of the F + D ₂ and F + HD reactions. J. Chem. Phys. 82, 3767 (1985) United States |
| 33335 E | A16: O ⁻ + H ₂ ; O ⁻ + D ₂ ; S ⁻ + H ₂ ; S ⁻ + D ₂ A16: O ⁻ + H ₂ ; O ⁻ + D ₂ ; S ⁻ + H ₂ ; S ⁻ + D ₂ | 3.5-25 eV | Hug, H. S.; Scott, D.; Champion, R. L.; Doverspike, L. D. Total cross sections for collisions of O ⁻ and S ⁻ with hydrogen. J. Chem. Phys. 82, 3110 (1985) United States |
| 33336 E | A16: H ₂ ⁺⁺ + H ₂ ; H ₂ ⁺⁺ + D ₂ | 300 K | Piper, L. G.; Green, B. D.; Blusberg, H. A. H.; Wolnik, S. J. H ₂ ⁺ Heisenberg quenching. J. Chem. Phys. 92, 3139 (1985) United States |
| 03337 E | A17: H ₂ | Undef | Wolniewicz, L.; Drexler, E. The HF, CH, and NH bar ¹ E _g (vib g) ⁺ states of hydrogen. Improved ab initio calculation of vibrational states in the adiabatic approximation. J. Chem. Phys. 82, 3292 (1985) Switzerland |
| 33338 E | J31: Charge exchange | 1-3x10 ⁶ eV/e | Janev, R. I.; Gallagher, J. W. Evaluated theoretical cross-section data for charge exchange of multiply charged ions with atoms. III. Nonhydrogenic target atoms. J. Phys. Chem. Ref. Data 13, 1199 (1984) United States |
| 33339 E | J31: Chemical reactions | | Baulch, D. L.; Cox, B. A.; Hampson, R. F., Jr.; Kerr, J. A.; Troe, J.; Watson, B. T. Evaluated kinetic and photochemical data for atmospheric chemistry: Supplement II. CODATA Task Group on gas phase chemical kinetics. J. Phys. Chem. Ref. Data 13, 1259 (1984) United States |
| 03340 E | F05: e + He ²⁺ ; e + Ar ²⁺ ; e + Kr ²⁺ ; e + Xe ²⁺ | 0-1000 eV | Danjo, I.; Matsumoto, A.; Ohtani, S.; Saitoh, E.; Yavara, H.; Wakiya, K. Electron impact single ionization of He ²⁺ , Ar ²⁺ , Kr ²⁺ , and Xe ²⁺ ions. J. Phys. Soc. Jpn. 53, 899 (1986) Japan |
| 33341 E | H34: hv + N | 953-1233 Å | Hibbert, A.; Dufton, P. L.; Keenan, F. P. Oscillator strengths for transitions in N I and the interstellar abundance of nitrogen. Mon. Not. R. Astron. Soc. 213, 721 (1985) United Kingdom |
| 33342 E-T | A31: He ⁺ + Ca; He ⁺ + Cd A36: He ⁺ + Ca; He ⁺ + Pb | Thermal | Tolmachev, Y. A.; Fogel, D. Excitation of alkali-metal ions: spectra due to nonresonant charge exchange of He ⁺ ions at thermal energies. Opt. Spectrosc. 56, 679 (1984) Soviet Union |
| 33343 E-T | E32: e + Se E19: e + Se | 0-20 eV | McEachran, B. P.; Stauffer, A. D. Electron scattering from neon. Phys. Lett. A 127, 397 (1985) Canada |
| 33344 E | F30: e + Ar ²⁺ | 3.0-10 keV | Shalla, C. P.; Funnell, T. W. Theoretical partial dielectronic recombination rate coefficients for ground-state helium-like argon. Phys. Lett. A 126, 22 (1985) United States |
| 33345 E | A31: He ⁺ + He A36: He ⁺ + He | 0.2 keV/amu | Druetta, R.; Mayo, R.; Cotte, P. H.; Hertz, S.; Dousson, S.; Nitz, D.; Trar Cong, K. Absolute cross sections for electron capture into (n, l) subshells of He I by He ⁺ spectroscopic study of the He ⁺ + He collision. Phys. Lett. A 126, 338 (1985) France |

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|-----------|--|------------------------------|--|
| 03375 F | R03: e + Li; e + Na; e + K | 3-50 eV | Hyman, H. A. Dipole Sagnac approximation for electron-atom collisions: excitation of the resonance transitions of Li, Na, and K. <i>Phys. Rev. A</i> 31, 2147 (1985) United States |
| 03376 E-T | A02: He + D ₂ ; He + H ₂ A17: He + D ₂ ; He + H ₂ | 1-2 keV | Jakacky, J., Jr.; Pollack, E.; Snyder, S.; Russek, A. He ⁺ on D ₂ collisions at keV energies and the HeD ₂ energy surface. <i>Phys. Rev. A</i> 31, 2149 (1985) United States |
| 03377 F | A03: H ⁺ + He A06: H ⁺ + He | 2-10 keV | Kimura, H. Molecular-state treatment of excitation and charge-transfer processes in H ⁺ + He (He ⁺) collisions. <i>Phys. Rev. A</i> 31, 2154 (1985) United States |
| 03378 F | E11: Undef | Undef | Rosenberg, L. Relativistic Coulomb bremsstrahlung in soft-photon approximation. <i>Phys. Rev. A</i> 31, 2180 (1985) United States |
| 03379 F | E21: Undef | Undef | Schneider, D. I. Application of projection methods to scattering calculations. <i>Phys. Rev. A</i> 31, 2180 (1985) United States |
| 03380 F | A06: He ⁺ + He; He ²⁺ + He; Li ²⁺ + He A07: He ⁺ + He; He ²⁺ + He; Li ²⁺ + He | 0.025-8 keV/amu | Sidorovich, V. A.; Nikolov, V. S.; McCure, J. R. Calculation of charge-transfer cross sections in collisions of He ⁺ , He ²⁺ , and Li ²⁺ with He atoms. <i>Phys. Rev. A</i> 31, 2193 (1985) Soviet Union |
| 03381 E | A06: He ⁺ + CH ₄ ; He ⁺ + CD ₄ ; He ⁺ + CO ₂ ; He ⁺ + O ₂ ; He ⁺ + Ne; H ⁺ + CH ₄ ; H ⁺ + CO; H ⁺ + CO ₂ ; H ⁺ + O ₂ ; H ⁺ + Ne | 0.8-3.0 keV | Varghese, S. L.; Bisminger, C.; Joyce, J. R.; Lambert, P. Ionic total electron-capture cross sections from C ⁻ , O ⁻ , F ⁻ , and S-bearing molecular gases for approximately 800 keV H ⁺ and He ⁺ projectiles. <i>Phys. Rev. A</i> 31, 2202 (1985) United States |
| 03382 E-T | B07: hv + S ⁻ F07: hv + S ⁻ | 16750-16757 cm ⁻¹ | Larson, D. J.; Stouman, E. Photo-detachment of atomic negative ions near threshold in a magnetic field. <i>Phys. Rev. A</i> 31, 2213 (1985) United States |
| 03383 F | A03: He ²⁺ + H A06: He ²⁺ + H A17: He ²⁺ + H | 0.02-10 keV | Van Heert, R. C.; Van Dishoeck, E. P.; Van der Hart, J. A.; Folke, P. Quantum-mechanical and impact-parameter treatment of He ²⁺ + H collisions. <i>Phys. Rev. A</i> 31, 2227 (1985) The Netherlands |
| 03384 F | C02: Undef | Undef | Anderson, V. E.; Ritchie, R. H.; Sung, C. C.; Eby, P. B. Relativistic corrections to stopping powers. <i>Phys. Rev. A</i> 31, 2244 (1985) United States |
| 03385 E | H06: hv + Be | Undef | Loeche, G.; Smith, S. J. Excited electron correlations in resonant multiphoton ionization via baryon Rydberg states. <i>Phys. Rev. A</i> 31, 2283 (1985) United States |
| 03386 E-T | R03: e + Ar R06: hν + Ar; hν + Ar ⁺ | 3.5-22 eV | Weyl, G. H.; Rosen, B. Laser-induced breakdown in argon at 3.35 μm: theory and experiments. <i>Phys. Rev. A</i> 31, 2303 (1985) United States |
| 03387 F | H36: hv + Yb; hv + Ta; hv + U; hv + Be; hv + Os; hv + Pt; hv + Au; hv + Hg; hv + Ti; hv + Pb; hv + Bi; hv + Th; hv + N; hv + Na | Undef | Chao, K.; Wendin, G. Many-electron theory of x-ray photoelectron spectra: N-shell linewidths in the 0.1Pd to 0.1U range. <i>Phys. Rev. A</i> 31, 2318 (1985) Sweden |
| 03388 E | A03: Pb ⁺ + Pb; Pb ⁺ + H ₂ ; Pb ⁺ + He; Pb ⁺ + He; Pb ⁺ + Ar; Pb ⁺ + Kr; Pb ⁺ + Xe A11: Pb ⁺ + Pb; Pb ⁺ + H ₂ ; Pb ⁺ + He; Pb ⁺ + He; Pb ⁺ + Ar; Pb ⁺ + Kr; Pb ⁺ + Xe | 100 K | Sapronovitch, J.; Atkinson, J. B.; Krause, L. 6P line-structure mixing in rubidium induced in collisions with ground-state Pb and noble-gas atoms and with H ₂ molecules. <i>Phys. Rev. A</i> 31, 2691 (1985) Canada |
| 03389 F | A06: He ²⁺ + H | 8 keV | Winter, T. G.; Lane, N. P. "R-matrix" approach to electron transfer in e-H collisions. <i>Phys. Rev. A</i> 31, 2690 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|--------------|---|
| 03000 F | A17: Li + Li; Na + Na; K + K; Rb + Rb; Cs + Cs; R + Rb | Undef | Novre, B.; Boer, E. Van der Waals interaction in excited alkali-metal dimers. <i>Phys. Rev. A</i> 31, 2957 (1985) Yugoslavia |
| 03005 F | A17: R + H R0a: R + R | Undef | Warrin, D. A. Asymmetry of field-induced shape resonances in hydrogen. <i>Phys. Rev. A</i> 31, 2984 (1985) United States |
| 03006 F | A26: R + R; R + Rg | 9-100 eV | Radujovic, V.; Johnson, H. S. Multiconfiguration Roothaan-Dirac approximation applied to photoionization of the outer shells of Be and Mg. <i>Phys. Rev. A</i> 31, 2991 (1985) United States |
| 03007 F | A25: e + H ₂ A17: e + H ₂ | 100-1200 eV | Liu, J. H.; Smith, V. H., Jr. Effect of ground-state electron correlation on the (e, 2e) reaction spectroscopy of H ₂ (X ¹ Σ ⁺ g ⁺). <i>Phys. Rev. A</i> 31, 3033 (1985) Canada |
| 03008 E | A12: Ba + Ar | 100 E | Alford, W. J.; Anderson, E.; Beldley, R.; Cooper, J.; Harrington, B. H.; Burnett, K. Collisional redistribution of circularly polarized light in barium perturbed by argon. <i>Phys. Rev. A</i> 31, 3042 (1985) United States |
| 03009 E | A25: R + CH ₄ A26: R + CH ₄ | 35-52 eV | Dejardin, G.; Binkova, D.; Leach, S. Double photoionization of methane. <i>Phys. Rev. A</i> 31, 3227 (1985) France |
| 03010 E | A26: Zr + Ba | 2-8 eV | Hullins, D. C.; Chien, P.; Hunter, J. E., III; Jordan, D. K.; Berry, R. S. Electron correlation effects in resonant multiphoton ionization of barium. <i>Phys. Rev. A</i> 31, 3059 (1985) United States |
| 03011 E | A25: e + Ar ²⁺ ; e + Ar ³⁺ ; e + Ar ⁴⁺ ; e + Ar ⁵⁺ ; e + Ar ⁶⁺ A26: e + Ar ²⁺ ; e + Ar ³⁺ ; e + Ar ⁴⁺ ; e + Ar ⁵⁺ ; e + Ar ⁶⁺ | 100-200 eV | Neag, H. C.; Greve, P.; Emre, R. J.; Schmidt, T. Experimental rate coefficients for dielectronic recombination and ionization of Ar VIII to Ar XIII. <i>Phys. Rev. A</i> 31, 3276 (1985) West Germany |
| 03012 F | A17: R + R | 0-0.8 eV | Richardson, S. L.; Zhou, M. Y.; Cohen, M. L. Ground-state properties of Be; a pseudopotential local-density approach. <i>Phys. Rev. A</i> 31, 3084 (1985) United States |
| 03013 F | A26: C ²⁺ + PERT; Ne ¹⁰⁺ + PERT; Ar ¹⁸⁺ + PERT | 1000 KeV/amu | Anholt, K.; Eichler, J. Ritonal calculations of electron capture by relativistic projectiles. <i>Phys. Rev. A</i> 31, 3535 (1985) United States |
| 03014 E | A33: Ca ¹⁰⁺ + He; Ca ¹¹⁺ + He; Ca ¹²⁺ + He; V ²⁰⁺ + He A26: Ca ¹⁰⁺ + He; Ca ¹¹⁺ + He; Ca ¹²⁺ + He; V ²⁰⁺ + He | 100-660 MeV | Tanis, J. A.; Bernstein, E. H.; Graham, H. G.; Stachli, W. P.; Clark, H.; McFarland, R. H.; Sargent, T. J.; Berkner, K. H.; Schlachter, A. S.; Tsefan, J. W. Resonant electron transfer and excitation in two-, three-, and four-electron ⁴⁰ Ca (imp g) ⁺ and ²³ V (imp g) ⁺ ions colliding with helium. <i>Phys. Rev. Lett.</i> 51, 2551 (1983) United States |
| 03015 E | A31: R + Zr | | Barfield, J. E.; Pinnaduvage, L. A. Diffusion-like aspects of multiphoton absorption in electrically polarized highly excited hydrogen atoms. <i>Phys. Rev. Lett.</i> 50, 311 (1985) United States |
| 03016 E | A25: e + Sb ²⁺ ; e + Sb ³⁺ ; e + Bi ²⁺ ; e + Bi ³⁺ ; e + Bi ⁴⁺ | 15-1000 eV | Haller, A.; Tinschert, E.; Achenbach, C.; Salzborn, E.; Becker, R.; Pindzola, M. S. Collision-strength shift in electron-impact single and double ionization of Sb and Bi ions. <i>Phys. Rev. Lett.</i> 50, 616 (1985) West Germany |
| 03017 E | A03: Si ¹¹⁺ + He A26: Si ¹¹⁺ + He | 15-90 MeV | Clark, H.; Brandt, D.; Swanson, J. K.; Shatroth, S. H. Resonant electron transfer and projectile K-electron excitation in ion-atom collisions. <i>Phys. Rev. Lett.</i> 50, 540 (1985) United States |
| 03018 F | A11: R + Ca; Rb + Ca | 0-50 meV | Stiles, M. D.; Wilkins, J. S. Sticking probability of H ₂ and HD on noble-metal surfaces. <i>Phys. Rev. Lett.</i> 50, 595 (1985) United States |
| 03019 E | A33: C ²⁺ + H; N ⁷⁺ + H; O ⁸⁺ + H A26: C ²⁺ + H; N ⁷⁺ + H; O ⁸⁺ + H | 3-7.5 keV/u | Dijkkamp, E.; Ciric, D.; de Haer, F. J. Total capture and line-emission cross sections for C ²⁺ , N ⁷⁺ , O ⁸⁺ + H collisions in the energy range 3-7.5 keV/u. <i>Phys. Rev. Lett.</i> 50, 1336 (1985) The Netherlands |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|-------------------------|--|
| 33020 F | A33: He ⁺ + H; Fe ²⁺ + He; Fe ²⁺ + H; Fe ²⁺ + Ar A10: He ⁺ + H | 53-175 keV; 0.33 MeV | Breadle, B.; Gayet, B.; Rouet, J. P.; Sobrer, L. Application of the Schwinger principle to direct excitation of atoms or ions by impact of bare nuclei at intermediate velocities. <i>Phys. Rev. Lett.</i> 56, 2377 (1985) France |
| 33021 E | A33: He ⁺ + Hg A37: He ⁺ + Hg | 300 K | Latash, E. L.; Sen, M. P.; Chabotarav, G. D. Population-modulation study of the filling of mercury ion levels in a He-Hg discharge. <i>Sov. Phys. J.</i> 27, 829 (1984) Soviet Union |
| 33022 F | D37: He + Pt | 16-160 meV | Poolman, B.; Vrijhij, L. E.; Conna, G. Does the surface temperature influence the cross section of random isolated adsorbates in thermal He scattering? <i>Surf. Sci.</i> 108, 117 (1980) West Germany |
| 33023 F | D37: He + Xe; He + CO | 16-160 meV | Jousson, R.; Wente, J. H.; Levi, A. C. Light atom scattering from adsorbates at low coverage. <i>Surf. Sci.</i> 108, 126 (1980) United States |
| 33024 F | D37: He + Xe + Ar | Under | Yinon, A. Y.; Kosloff, B.; Gerber, E. G. Atom scattering from disordered surfaces: calculations for a model of a He + Ar mixed overlayer. <i>Surf. Sci.</i> 108, 148 (1980) Israel |
| 03025 F | D02: Ar ⁺ + Bi; Ar ⁺ + Au | 5 keV | Horita, K.; Takami, H.; Ohno, H. A new technique of determining sputtering cross-section of impurity atoms on metal surfaces using self-sustaining segregation. <i>Surf. Sci.</i> 108, 1677 (1984) Japan |
| 03026 F | D07: Under | Under | Gunhaier, B.; Liu, W. K. Scattering of helium atoms from adsorbates: Van der Waals potentials and scattering formalism. <i>Surf. Sci.</i> 108, 371 (1980) Canada |
| 33027 F | D32: e + Ar | Under | Garrison, B. J.; Johnson, R. E. Ejection of atoms from rare-gas solids by low energy cascades. <i>Surf. Sci.</i> 108, 388 (1980) United States |
| 33028 F | D11: He + W; He + Cu | 3-800 K | Boheis, J. Sticking and accommodation of He on metal surfaces at low temperatures. <i>Surf. Sci.</i> 108, 463 (1980) West Germany |
| 33029 F | D32: Ar + [Fe + Cr + Mo] | 8 keV | Hapilton, J. C.; Anderson, R. J. Sputter-induced photon spectroscopy of clean and sulfidized Fe-Cr-Mo single crystal surfaces. <i>Surf. Sci.</i> 109, 81 (1985) United States |
| 33030 F | D11: NO + Pt | 615-1193 K | Asscher, H.; Pollak, E.; Somorjai, G. A. A model for vibrational and translational energy accommodation of NO molecules during scattering from a Pt(111) crystal surface. <i>Surf. Sci.</i> 109, 106 (1985) United States |
| 33031 F | D37: He ⁺ + Cu | 33 keV | Jakas, H. E.; Harrison, D. E., Jr. Computer studies of the reflection of 33 keV He ⁺ ions from a (310)Cu surface. <i>Surf. Sci.</i> 109, 533 (1985) United States |
| 33032 E | D32: He ⁺ + [Ni + Cu] D17: He ⁺ + [Ni + Cu] | 3 keV | Lau, P. Q.; Hoff, R. A.; Wiedersich, H.; Rehn, L. E. Subsurface compositional modifications in Ni-Cu alloys during high-temperature ion sputtering. <i>Surf. Sci.</i> 109, 517 (1985) United States |
| 33033 F | A37: Li + Bi; O + Al A10: Li + Ni; O + Al | 1-50 MeV | Jakubassa-Abundson, D. H. The nonadiabatic sliding model and its application to delta-electron emission. <i>Z. Phys. A</i> 320, 557 (1985) West Germany |
| 33034 F | D36: He + Ar | 400-650 meV | Yudin, N. P.; Pavlitchenkov, A. V.; Neulatchin, V. G. Angular distributions of electrons in the (gamma, 2e) reaction and ee-correlations in the atom. <i>Z. Phys. A</i> 323, 565 (1985) Soviet Union |
| 03035 F | E02: e + He E17: e + He | 1.23-19 meV | Compassi, R. I. Semiempirical model description of the low energy electron scattering from helium. <i>Z. Phys. A</i> 320, 579 (1985) Romania |
| 33036 E-F | E33: e + N; e + N ₂ E04: e + N ₂ E05: e + N; e + N ₂ J02: Hydrogen rate coefficients | 0.01-33 meV | Ervin, D. A.; Kunc, J. A. Rate coefficients for some collisional processes in high-current hydrogen discharges. <i>IEEE Trans. Plasma Sci.</i> PS-11, 264 (1983) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|------------------------------------|---|
| 33037 F | E23: O + O ⁺ | 10° K | Aggarwal, K. M. Line intensity ratios for transitions in O III. <i>Astron. Astrophys.</i> 106, 189 (1985) United Kingdom |
| 33038 F | H20: hv + O ⁺ | Undef | Bonner, R. S.; Varshni, Y. P. Oscillator strengths for C III lines. <i>Astron. Astrophys. Suppl. Ser.</i> 63, 325 (1985) Canada |
| 33039 E-T | J22: Ionization; Recombination | Undef | Arnand, R.; Aethenfling, B. An update evaluation of recombination and ionization rates. <i>Astron. Astrophys. Suppl. Ser.</i> 63, 625 (1985) France |
| 03040 F | E03: O + C ⁺ | 10 ² -10 ⁴ K | Looney, R. J.; Dufton, P. L.; Hibbert, A.; Kingston, A. M. C II emission lines formed in optically thin plasmas. <i>Astrophys. J., Part 1</i> 290, 279 (1985) United Kingdom |
| 33041 F | E23: O + He ⁺ ; O + He ⁺ | 2.2-65.0 eV | Aggarwal, K. M. Collision strengths for optically allowed transitions in He V and He VII. <i>Astrophys. J. Suppl. Ser.</i> 50, 209 (1985) United Kingdom |
| 03042 F | H05: 2hv + H ₂ O | 240 nm | Bodgson, ; Simons, J. P.; Ashford, H.W.R.; Bayley, J. M.; Sims, R. S. Rotational state dependence of the predissociation dynamics in H ₂ O, D ₂ O, C ¹⁸ O, and D ₂ O ₂ . <i>Ber. Bunsenges. Phys. Chem.</i> 89, 251 (1985) United Kingdom |
| 33043 E | A10: O + H ₂ | 235-365 K | Wellhausen, G.; Wolfen, J. Temperature dependence of the reaction O + H ₂ (v = 1) going to HD (v = 0, 1) + H. <i>Ber. Bunsenges. Phys. Chem.</i> 89, 316 (1985) West Germany |
| 03044 E | A10: H + O ₂ ; H + CO ₂ ; H + H ₂ O | 1.0-2.6 eV | Kleinermanns, K.; Wolfen, J. Dynamics and absolute cross sections of some hot hydrogen atom reactions. <i>Ber. Bunsenges. Phys. Chem.</i> 89, 316 (1985) West Germany |
| 03045 E | A10: OH + H ₂ | 295 K | Schmidt, V.; Zhu, G. Y.; Becker, K. H.; Fink, E. H. Study of OH reactions at high pressures by excimer laser photolysis - dye laser fluorescence. <i>Ber. Bunsenges. Phys. Chem.</i> 89, 321 (1985) West Germany |
| 03046 F | D10: H + Ti | 300 K | Stroviets, H.; Weiss, A. Solubility of hydrogen in titanium alloys. II. Blocking models and hole size considerations. <i>Ber. Bunsenges. Phys. Chem.</i> 89, 362 (1985) West Germany |
| 03047 F | E03: O + Si ⁺ | 100-20000 K | Keehan, F. P.; Johnson, C. T.; Kingston, A. M.; Dufton, P. L. Population ratios for the fine structure of Si II applicable to the interstellar medium. <i>Mon. Not. R. Astron. Soc.</i> 214, 37p (1985) United Kingdom |
| 33048 E-T | E26: hv + Al | 0 eV | Deterov, I. M.; Ishchenko, V. B.; Kochubei, S. A.; Kurochkin, V. L. Effective formation of aluminum photoions under the radiation from a tunable FeCl ₃ laser. <i>Opt. Commun.</i> 50, 133 (1985) Soviet Union |
| 33049 E | A37: He ⁺ + He A11: He ⁺ + He | 533 K | Kasyanenko, S. V.; Malyshev, G. M.; Tolmachev, Y. A. Quenching of He (2 ¹ S _g) metastable atoms by normal mercury atoms. <i>Opt. Spectrosc.</i> 57, 123 (1985) Soviet Union |
| 33050 E | H22: hv + CO ₂ | 280-930 eV | Sivkov, V. B.; Arinov, V. B.; Vinogradov, A. S.; Simian, T. H. Study of the fine structure of K absorption spectra in the CO ₂ molecule. <i>Opt. Spectrosc.</i> 57, 160 (1985) Soviet Union |
| 33051 E | E23: O + Cd | 1 eV | Gordov, S. V.; Chirtsov, A. S. Study of transitions between excited states of cadmium atoms in collisions with electrons. <i>Opt. Spectrosc.</i> 57, 246 (1985) Soviet Union |
| 03052 F | H06: shv + H; 6hv + Kr | 0-13.0 eV | Beravian, G.; Sultan, G. Determination of multiphoton ionization cross sections in focused laser experiments. <i>Physica B/C</i> 126, 343 (1985) France |
| 03053 F | A03: He + He; He + He; He + Ar; He + Kr; He + Xe A11: He + He; He + He; He + Ar; He + Kr; He + Xe | Thermal-5 keV | Grosdanov, T. P.; Janov, P. K.; Prosyakov, L. P.; Jukov, D. B. s-changing collisions of Rydberg atoms with ground-state atoms. <i>Phys. Lett. A</i> 109, 93 (1985) Yugoslavia |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|--|---|
| 3360 F | C30: K ⁺ + Si | 25-253 keV | Bastals, R.; Kainonen, J.; Whitlow, R. J.; Tikhonov, P.; Ubracher, R.; Lind, H. P. Range profiles of 25-253 keV hydrogen in silicon. <i>Phys. Lett. A</i> 139, 300 (1985) Finland |
| 3365 F | A86: C30 + Al; C30 + Cu; C30 + Pb; C30 + Au; Be30 + Al; Be30 + Cu; Be30 + Yb; Be30 + Au; Ar30 + Al; Ar30 + Cu; Ar30 + Yb; Ar30 + Au C36: He ⁺ + Fe27; C ⁺ + Fe27; Ar ⁺ + Fe27 C37: He ⁺ + Fe27; C ⁺ + Fe27; Ar ⁺ + Fe27 | 100-2100 MeV/amu | Anholt, P. Atomic collisions with relativistic heavy ions. II. Light-ion charge states. <i>Phys. Rev. A</i> 31, 3579 (1985) United States |
| 3366 F | A33: He ⁺ + He A18: He ⁺ + He | undef | de Prunzio, E. Orientation effects in thermal collisions between "circular" - Rydberg-state atoms and ground-state helium. <i>Phys. Rev. A</i> 31, 3593 (1985) France |
| 3367 F | A36: He ⁺ + Li; He ⁺ + Na; He ⁺ + Mg; He ⁺ + Li; He ⁺ + Na; He ⁺ + Mg | 2-100 keV | Dubois, R. B.; Fabre, L. S. Electron capture by protons and helium ions from lithium, sodium, and magnesium. <i>Phys. Rev. A</i> 31, 3633 (1985) United States |
| 3368 F | A33: He ⁺ + He; He ⁺ + He; He ⁺ + He; He ⁺ + He; A36: He ⁺ + He; He ⁺ + He; He ⁺ + He; He ⁺ + He | 2.0-63 keV/amu | Stang, J. A.; Morgan, T. J. Excitation of highly excited states of atomic hydrogen in electron-atom collisions of He ⁺ with H, He, and Ar. <i>Phys. Rev. A</i> 31, 3634 (1985) United States |
| 3369 F | E22: e + H ₂ | 3-13 eV | Weatherford, C. A.; Gude, K.; Truhlar, A. Inclusion of exact exchange in the semi-iterative partial-differential-equation method of electron-molecule scattering: application to e-H ₂ . <i>Phys. Rev. A</i> 31, 3620 (1985) United States |
| 3369 F | A30: He ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu A36: He ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu | 50-333 eV | Sze, Y. K.; Cappiello, N. J.; Peterson, J. S. Charge transfer of 50-eV - 0-keV He ⁺ , He ⁺ , He ⁺ , He ⁺ , and He ⁺ in Cu: absolute cross sections. <i>Phys. Rev. A</i> 31, 3627 (1985) United States |
| 3361 F | A36: He ⁺ + C; He ⁺ + N; He ⁺ + O; He ⁺ + Se; He ⁺ + Ar | 0.1-20 keV | Saha, C. C.; Datta, S.; Mukherjee, S. C. Electron capture from subshell states in hydrogen by fast ions in the continuous intermediate-state approximation. <i>Phys. Rev. A</i> 31, 3633 (1985) India |
| 3362 F | E33: e + He | 63-333 eV | Srivastava, B.; Kumar, A. Double excitation of helium by electron impact: a distorted-wave polarized-orbital approach. <i>Phys. Rev. A</i> 31, 3639 (1985) India |
| 3363 F | E23: e + Fe ²⁰⁺ | 1x10 ⁷ -3x10 ⁷ K | Faucher, P.; Dubau, J. Effect of resonances on the excitation rates of He-like Fe XIV ion. <i>Phys. Rev. A</i> 31, 3672 (1985) France |
| 3364 F | E27: He ⁺ + He E36: He ⁺ + He | E36: 203 au | Glab, V. L.; Ng, H.; Yao, A.; Sayfah, M. H. Spectroscopy between parabolic states in hydrogen: enhancement of the Stark-induced resonances in its photoionization. <i>Phys. Rev. A</i> 31, 3677 (1985) United States |
| 3365 F | H06: He ⁺ + Fe27 | undef | Rendon, S. Y. Systematics of zeros in dipole matrix elements for photoionizing transitions: nonrelativistic calculations. <i>Phys. Rev. A</i> 31, 3698 (1985) United States |
| 3366 F | H08: He ⁺ + Ca H06: He ⁺ + Ca | 7-50 eV | Alton, I.; Kelly, H. P. Photoionization cross sections with excitation to Ca ⁺ M and O _p levels. <i>Phys. Rev. A</i> 31, 3711 (1985) United States |
| 3367 F | H30: He ⁺ + He ⁺ | 1-13 eV | Kroon, J. P. C.; Senhorst, H. A. J.; Beijersma, H. C. B.; Verhaar, H. J.; Verster, H. F. Rabi oscillations in the optical pumping of a metastable neon beam with a cw dye laser. <i>Phys. Rev. A</i> 31, 3726 (1985) The Netherlands |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|-------------------------------|--|
| 33068 E | A30: He ⁺ + H ₂ A37: He ⁺ + H ₂ | 0.025-2.075 keV/amu | Edwards, A. L.; Wood, R. M.; Krull, B. L. Double ionization of H ₂ by fast He ⁺ projectiles. <i>Phys. Rev. A</i> 31, 3972 (1985) United States |
| 33069 E | A16: Br ⁺ + He; Br ⁺ + Ne; Br ⁺ + Ar; Kr ⁺ + Kr; Br ⁺ + Xe | 10-100 keV | Bird, S.; Abbas, I. A. Cross sections for fast neutral-atom and positive-ion production in collisions of Br ⁺ ions with rare-gas atoms. <i>Phys. Rev. A</i> 31, 3976 (1985) Canada |
| 33070 E | A36: hv + Ti; hv + Fe; hv + Ni; hv + Zn | 9-18 keV | Allawami, K. L.; Mittal, R.; Sood, S. S. Measured energy dependence of K-shell photoelectric cross sections for Ti, Fe, Ni, and Zn in the energy region 9-18 keV. <i>Phys. Rev. A</i> 31, 3983 (1985) India |
| 33071 E | A36: Undef | Undef | Barrachina, B. J.; Caribotti, C. S.; Miraglia, J. E. Contributions from off-energy-shell states to inner-shell electron capture. <i>Phys. Rev. A</i> 31, 4026 (1985) Argentina |
| 33072 E | A06: Undef | Undef | Mocak, J.; Freed, T. Symposium to "Contributions from off-energy-shell states to inner-shell electron capture". <i>Phys. Rev. A</i> 31, 4028 (1985) United States |
| 33073 E | A33: S ²⁺ + He A36: S ²⁺ + He | 15-230 keV | Tanis, J. A.; Bernstein, E. S.; Clark, R. W.; Graben, F. G.; McFarland, R. E.; Noryan, T. J.; Johnson, R. S.; Jones, K. W.; Moran, R. Evidence for uncorrelated electron capture and K-shell excitation in S ²⁺ + He collisions. <i>Phys. Rev. A</i> 31, 4040 (1985) United States |
| 33074 E | E33: e + Fe ²⁺ | 230-1000 eV | Christensen, R. S.; McCross, D. W.; Pradhan, S. K. Electron-impact excitation of ions in the sequence Fe IV. <i>Phys. Rev. A</i> 32, 93 (1985) United States |
| 33075 E | C36: N ₂ ⁺ + C | 0.2 keV | Maer, D.; Cooney, P. J.; Faibis, S.; Koster, K. F.; Koenig, W.; Zabrasky, B. J. Charge-state distributions of nitrogen ions resulting from the foil-induced dissociation of 0.2-keV N ₂ ⁺ ions. <i>Phys. Rev. A</i> 32, 105 (1985) United States |
| 33076 E | A36: Ne ¹⁰⁺ + H Seq | 10-10 ⁶ keV/amu | Kieker, J. Relativistic eikonal theory of electron capture. <i>Phys. Rev. A</i> 32, 112 (1985) United States |
| 33077 E | A33: Li ²⁺ + H A36: Li ²⁺ + H A17: Li ²⁺ + H B37: Li ²⁺ + H | 10 ⁷ cm/sec | Ho, T. S.; Laughlin, C.; Chu, S. I. Laser-assisted charge-transfer reactions (Li ²⁺ + H): coupled dressed-quasimolecular-state approach. <i>Phys. Rev. A</i> 32, 122 (1985) United States |
| 33078 E | A16: Na ⁺ + He; Na ⁺ + Ne; Na ⁺ + Ar; Na ⁺ + Kr; Na ⁺ + Xe; K ⁺ + He; K ⁺ + Ne; K ⁺ + Ar; K ⁺ + Kr; K ⁺ + Xe | 0-200 eV | Scott, D.; Ng, S. S.; Champion, R. L.; Doverspike, L. P. Electron detachment in Na ⁺ , K ⁺ -rare-gas collisions. <i>Phys. Rev. A</i> 32, 140 (1985) United States |
| 33079 E | E33: e + Kr E17: e + Kr E19: e + Kr | 20-100 eV | Henares, G. D.; da Fainso, F. J.; Padial, H. T. Electron-impact excitation of Krypton. <i>Phys. Rev. A</i> 32, 156 (1985) Brazil |
| 33080 E | E33: e + H E17: e + H | 50-230 eV | Branden, B. H.; McCarthy, J. E.; Nitroy, J. D.; Stelbovicz, A. T. Extended coupled-channels calculations for electron-hydrogen scattering. <i>Phys. Rev. A</i> 32, 166 (1985) United Kingdom |
| 33081 E | E35: e + Au; e + Cu; e + Ag; e + Bi E17: e + Au; e + Cu; e + Ag; e + Bi | 50-1000 keV | Das, J. B.; Chakraborty, B. Atomic inner-shell ionization. <i>Phys. Rev. A</i> 32, 176 (1985) India |
| 33082 E | E33: e + H ₂ ; e + D ₂ E00: e + H ₂ ; e + D ₂ E09: e + H ₂ ; e + D ₂ | 1-6 eV | Mudel, C.; Boreen, H.; Doncke, H. Nuclear dynamics in resonant electron-molecule scattering beyond the local approximation: vibrational excitation and dissociative attachment to H ₂ and D ₂ . <i>Phys. Rev. A</i> 32, 181 (1985) West Germany |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|------------------------------------|--|
| 03083 F | E02: hv + Yb; hv + Pb; hv + Au; hv + Pt; hv + Ir; hv + Cd; hv + Zn E06: hv + Yb; hv + Pb; hv + Au; hv + Pt; hv + Ir; hv + Cd; hv + Zn | 6.0-59.9 keV | Parthasarathi, K. Atomic photoelectric effect near threshold edges. <i>Phys. Rev. A</i> 32, 190 (1985) India |
| 03088 F | A27: K ⁺ + He; H ⁺ + He | 3.31-13 keV | Vegh, L. Semi-electric-field approximation to multiple ionization in distant collisions. <i>Phys. Rev. A</i> 32, 199 (1985) Hungary |
| 03085 E | E36: h ν + He; h ν + Fe; h ν + Ar; h ν + Kr; h ν + I; h ν + Xe; h ν + Zn; h ν + Yb; h ν + V; h ν + W | 193 nm | Loh, T. S.; Johann, U.; Epper, S.; Fumser, S.; Rhodes, C. K. Collision-free multiple photon ionization of atoms and molecules at 193 nm. <i>Phys. Rev. A</i> 32, 210 (1985) United States |
| 03086 E | E06: hv + Ba | 01000-50200 cm ⁻¹ | Hollins, O. C.; Zhu, Y.; Callagher, T. P. Determination of channel interaction in barium for five 5d7d perturbers: the ³ D ₃ , ³ F ₄ , ³ F ₃ , ³ F ₂ , and ³ F ₁ states. <i>Phys. Rev. A</i> 32, 203 (1985) United States |
| 03087 F | A33: Fe ¹⁹⁺ + He; Fe ¹⁸⁺ + He; Ar ¹⁷⁺ + He A36: Fe ¹⁹⁺ + He; Fe ¹⁸⁺ + He; Ar ¹⁷⁺ + He | 7 keV/amu | Miraglia, J. E.; Caribotti, C. S.; Gonzalez, A. B. Photon spectrum associated with radiative electron-capture processes. <i>Phys. Rev. A</i> 32, 253 (1985) Argentina |
| 03089 F | E23: e + Li | 20-200 eV | Tinany, S. B. Core excitation of Li by electron impact. <i>Phys. Rev. A</i> 32, 627 (1985) United States |
| 03089 F | C32: H ⁺ + H ₂ O | 03-10000 keV | Xu, Y. J.; Khandelvali, G. S.; Wilson, J. F. Proton stopping cross sections of liquid water. <i>Phys. Rev. A</i> 32, 629 (1985) United States |
| 03090 F | E22: e + Ar E17: e + Ar | 3-23 eV | Batta, S. K.; Mandal, S. K.; Khan, P.; Ghosh, A. S. Elastic e ⁻ + Ar scattering with the use of the model-potential method. <i>Phys. Rev. A</i> 32, 633 (1985) India |
| 03091 F | A36: K ⁺ + F | 1-200 eV | Stallcop, J. E.; Partridge, H. S ⁺ -H long-range interaction energies and resonance charge exchange. <i>Phys. Rev. A</i> 32, 639 (1985) United States |
| 03092 E | A07: Fe ²⁺ + Fe ²⁺ | 0.00-0.29 eV | Hong, S. Y.; de Vries, H. S.; Keller, J.; Weiner, J. Direct measurement of the velocity dependence of the associative-ionization cross section in Fe(3p) + Fe(3p) collisions. <i>Phys. Rev. A</i> 32, 601 (1985) United States |
| 03093 F | E08: hv + He | Undef | Barkley, J. E.; Sandars, D. Microwave absorption by hydrogen atoms in high Rydberg states. <i>Phys. Rev. A</i> 32, 609 (1985) United States |
| 03094 F | A36: Si ¹⁰⁺ + He A37: Si ¹⁰⁺ + He | 1-10 ⁵ K | Opradillo, L.; McCarrroll, B.; Valiron, P. Charge transfer of Si ¹⁰⁺ with helium. <i>Astron. Astrophys.</i> 108, 229 (1985) Argentina |
| 03095 F | E23: e + S | Undef | Ho, Y. K.; Henry, B.J.W. Oscillator strengths and collision strengths for neutral sulfur. <i>Astrophys. J.</i> , Part 1 290, 813 (1985) United States |
| 03096 F | E06: e + He ⁺ ; e + He ²⁺ ; e + He ³⁺ ; e + He ⁴⁺ ; e + He ⁵⁺ ; e + He ⁶⁺ ; e + He ⁷⁺ ; e + He ⁸⁺ ; e + He ⁹⁺ ; e + He ¹⁰⁺ | 10 ⁴ -10 ⁶ K | Jacobs, V. L. Dielectronic recombination, ionization equilibrium, and radiative emission in high-temperature plasmas. <i>Astrophys. J.</i> , Part 1 296, 121 (1985) United States |
| 03097 F | E23: e + Mg ⁺ | 10 ⁴ -10 ⁶ K | Aggarwal, S. M. *Erratum: Collision strengths for optically allowed transitions in He V and He VII. <i>Astrophys. J. Suppl. Ser.</i> 59, 113 (1985) United Kingdom |
| 03098 E | A11: CO ⁺ + He; CO ⁺ + O ₂ ; Fe ⁺ + O ₂ | 70-300 K | Horicy, M. H.; Gregory, E. A.; Simpson, C.J.S.E. Non-resonant V-V energy transfer between diatomic molecules at low temperature. <i>Chem. Phys.</i> 95, 4 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|--------------------|--|
| 03099 F | A17: D ⁺ + H ₂ | | Dand, G.; Chapiro, E. An ab initio description of the excited states of the reaction D(2P, 2D) + H ₂ → 2H(2S, 2P) + H. An attempt to describe several potential energy surfaces with constant accuracy. <i>Chem. Phys.</i> 96, 381 (1985) France |
| 03500 E-T | F03: Dissociation | | Trakhtenberg, L. I.; Bilik, G. M. Dissociation of polyatomic molecules by IR laser radiation. <i>High Energy Chem.</i> 16, 333 (1980) Soviet Union |
| 03501 F | A02: H ⁺ + He; He + He A10: H ⁺ + He; He + He | 3-10 neV | Arns, A.-J.; Pauly, H. A. The polarization of elastic scattering at resonance. <i>Indian J. Phys. A</i> 56, 1 (1982) Egypt |
| 03502 F | A72: H ⁺ + Al A10: H ⁺ + Al F72: e + He E77: e + He | 100 neV; 520 eV | Upadhyaya, S. B. Study of particle scattering in a modified Coulomb field. <i>Indian J. Phys. A</i> 56, 65 (1982) India |
| 03503 F | F23: e + I E17: e + I | 15-633 eV | Banerjee, B.; Sur, S. K.; Subbarao, S. C. Glauber cross sections for arbitrary l-m excitations of atomic hydrogen by electron impact. <i>Indian J. Phys. B</i> 56, 75 (1982) India |
| 03504 F | A73: H ⁺ + H; He ⁺ + H | 25-1333 keV | Ray, P. L.; Saha, B. C. Asymptotic cross section for heavy particle impact. <i>Indian J. Phys. B</i> 56, 89 (1982) India |
| 03505 F | A36: F ⁺ + Ar | 1-19 keV | Das, S.; Chakrabarti, T.; Karmacharya, S. B. Symmetric charge exchange cross-section in argon. <i>Indian J. Phys. B</i> 56, 119 (1982) India |
| 03506 F | A36: H ⁺ + H A10: H ⁺ + H | 25-125 keV | Ray, P. L.; Saha, B. C.; Sill, B. C. Differential cross section for electron capture in p-H collisions in small scattering angle region at intermediate energies. <i>Indian J. Phys. B</i> 56, 199 (1982) India |
| 03507 F | A36: F ⁺ + H | 0.65-5 neV | Maiti, S.; Ray, A.; Saha, B. C. Charge-exchange in highly charged ion-atom collisions. <i>Indian J. Phys. B</i> 56, 277 (1982) India |
| 03508 F | A36: H ⁺ + H; Cl ⁻ + Cl | 1-23 keV | Das, S.; Karmacharya, S. B. Symmetric charge exchange between negative ions and atoms. <i>Indian J. Phys. B</i> 56, 269 (1982) India |
| 03509 F | F23: e + He E17: e + He | 29-220 eV | Maiti, S. A field-theoretic approach to the differential cross-section for excitation of helium from ground state to 2S singlet state. <i>Indian J. Pure Appl. Phys.</i> 22, 231 (1984) India |
| 03510 F | F23: e + H ₂ E17: e + H ₂ | 120-633 eV | Joshi, K. S.; Das, B. S. Electronic excitation in inelastic e-H ₂ scattering. <i>Indian J. Pure Appl. Phys.</i> 22, 236 (1984) India |
| 03511 E | F23: e + Lu | 3-250 eV | Krasov, A. Y.; Smirnov, V. N. Cross sections for excitation of the lanthanum atom by electron impact. <i>J. Appl. Spectrosc.</i> 51, 1108 (1988) Soviet Union |
| 03512 E | C02: e + C C0a: e + C | 50-3000 eV | Harris, C.; Arakawa, Z. Y.; Collett, T. A.; Ashley, J. C. Low energy electron attenuation length studies in thin amorphous carbon films. <i>J. Electron. Spectrosc. Relat. Phenom.</i> 35, 377 (1985) United States |
| 03513 E | J22: Ionization | | Liang, K. Y.; Olson, C. E. A data survey and bibliography of binary (e-2e) spectroscopic studies. <i>J. Electron. Spectrosc. Relat. Phenom.</i> 35, 377 (1985) Canada |
| 03514 F | H06: hv + H ₂ ; hv + H ₂ ; hv + H ₂ | 0-120 eV | Kilcoyne, D. A. L.; McCarthy, C. M.; Werhahn, S.; Sob, B. S.; Hilton, P. D. An atomic diffraction theory of molecular photoionization cross sections. <i>J. Electron. Spectrosc. Relat. Phenom.</i> 26, 153 (1985) Australia |

| Ref. No. | Isotopes | Energy Range | Reference |
|----------|--|---------------|--|
| 03515 F | He4: 1s + He 2S1: 1s + He | 60-133 eV | Salomonson, S.; Carter, S. L.; Kelly, R. F. Calculation of helium photoionization with excitation to 2s and 2p levels including resonance structure. <i>J. Phys. B</i> 10, L109 (1985) United States |
| 03516 F | He4: 1s + He; 2s + He; 2p + He; 2s + He; 2p + He; 2s + He; 2p + He | Under | Crance, E. Multiphoton stripping of heavy atoms by UV light: a statistical interpretation. <i>J. Phys. B</i> 10, L155 (1985) France |
| 03517 F | He4: C100 + He | 2.5-20 eV | Berdarinski, A. I.; Ostromii, O. I.; Wiehaus, A. Analytical formulae for spectral shapes arising from emission during atom-atom collisions. <i>J. Phys. B</i> 10, L161 (1985) The Netherlands |
| 03518 F | He4: He+ + He; He+ + He; He+ + He | Thermal | Ayalehys, B. Analytical expressions for cross sections of Rydberg-neutral inelastic collisions. <i>J. Phys. B</i> 10, L167 (1985) Soviet Union |
| 03519 F | He4: C + He | 50.1-62.5 eV | Van der Burgt, P.J.M.; Van Ick, J.; Heikens, H.G.H. A new He- resonance in the excitation of the (2s2p)3P autoionizing state by electrons. <i>J. Phys. B</i> 10, L171 (1985) The Netherlands |
| 03520 F | He4: He + He | 1.00 eV | Alloch, D.; Tisserand, G.; Leder, R. Isotope shift of the 2P _{1/2} -2P _{3/2} transition in helium. <i>J. Phys. B</i> 10, L191 (1985) France |
| 03521 F | He4: He + He; He + He | 17.8-46.9 keV | Verma, Y. B.; Pal, D.; Garg, A. L.; Tandon, P. N. Photon-induced L-shell X-ray intensity ratios for He and He ⁺ in the energy range 17 keV less than or equal to E less than or equal to 47 keV. <i>J. Phys. B</i> 10, 1133 (1985) India |
| 03522 F | He4: He + He He4: He + He | 11.5-15.2 keV | Jitschin, W.; Materlik, G.; Werner, U.; Fenske, F. Counter-Kronig and fluorescence yields of He L shells derived from photoionization measurements. <i>J. Phys. B</i> 10, 1139 (1985) West Germany |
| 03523 F | He4: He + He He4: He + He | 25-250 keV | Bahl, P. Continuous electron capture by 20-150 keV protons in helium. <i>J. Phys. B</i> 10, 1181 (1985) Denmark |
| 03524 F | He4: He + He; He4: He + He | 5-60 keV/amu | Stich, W.; Imde, H. J.; Dreizler, R. G. TDHF calculations for two-electron systems. <i>J. Phys. B</i> 10, 1195 (1985) West Germany |
| 03525 F | He4: Under | Under | Muniprin, P. J.; Moisevitch, A. L. Third Born approximation for electron capture at relativistic energies. <i>J. Phys. B</i> 10, 1229 (1985) United Kingdom |
| 03526 F | He4: He + He; He + He; He + He He4: He + He; He + He; He + He | 20-233 eV | Kemper, F.; Bonczyk, F.; Feiler, H. Relativistic two-channel calculations of the elastic scattering of slow electrons from He, He ⁺ , and He atoms. <i>J. Phys. B</i> 10, 1223 (1985) West Germany |
| 03527 F | He4: He + He; He + He | 33.0 eV | Aizawa, J.; Ishihara, T.; Matsuda, T. Energy exchange between two outgoing electrons in the post-collision interaction process. <i>J. Phys. B</i> 10, 1201 (1985) Japan |
| 03528 F | He4: He + He He4: He + He | 2.3-8.5 keV | Batler, K.; Moore, D. L. Electron impact ionization of He IIIV ions. <i>J. Phys. B</i> 10, 1207 (1985) United Kingdom |
| 03529 F | He4: He + He He4: He + He He4: He + He | 0-3.6 eV | Kocher, K. H.; Sohn, W.; Jung, K.; Eberhart, H.; Chang, Y. S. Direct and resonant vibrational excitation of C ₂ H ₂ by electron impact from 0 to 3.6 eV. <i>J. Phys. B</i> 10, 1253 (1985) West Germany |
| 03530 F | He4: He + He; He + He | 63-85 eV | Bilson, R.; Forrest, L. F.; Ross, K. J. A comment on the M-shell photoelectron spectrum of He. <i>J. Phys. B</i> 10, L185 (1985) United Kingdom |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|--------------------------|---|
| 03531 F | H06: hv + H ₂ | 10.9-10 eV | Bartschat, K.; Scott, P. Photoionization of mercury. <i>J. Phys. B</i> 10, 1171 (1985) United Kingdom |
| 37532 F | H33: hv + H ₂ ; H ⁰⁰⁰ + H ₂ H36: hv + H ₂ ; H ⁰⁰⁰ + H ₂ | 3.0 keV/cm | Bortolotto-Rostagno, A.; Bonci-Cattin, P.; Cloison, A.; Svensson, S.; Witt, B. Charge-transfer capture into Li-like autoionizing H ⁰⁰⁰ (1s2s ² 1s) configurations by metastable H ⁰⁰⁰ (1s2s ²) neutralized ions in collision with H ₂ and H ₂ ⁺ , observed by electron spectroscopy at 3.0 keV cm ⁻¹ . <i>J. Phys. B</i> 10, 1195 (1985) France |
| 03533 E | H06: Hv + Ar H36: Hv + Ar H37: Hv + Ar | 600-800 keV | Ruber, G.; Ben-Itzhak, I.; Cortner, L.; Mann, A.; Posner, A. Formation of H ₂ ⁺ and H ₂ ²⁺ molecules by charge exchange collisions of H ₂ ⁺ ions in the mbary region. <i>J. Phys. B</i> 10, 1201 (1985) Israel |
| 03539 F | H33: hv + H ₂ | 25 eV | McKenney, J. W.; Frajzer, K.; Nickel, J. C.; Reidway, B. Potentially involved electron-photon coincidence study of H ₂ (2p ² sub g) excitation. <i>J. Phys. B</i> 10, 1207 (1985) United States |
| 03545 F | H12: hv + H H36: hv + H | 0-1.7x10 ⁶ eV | Stahle, C.; Desbrier, B. Stark broadening of the hydrogen H-β line at low densities: fine structure and spontaneous emission effects. <i>J. Phys. B</i> 10, 1237 (1985) France |
| 03546 F | H06: hv + Ag ⁰ ; hv + Cu ⁰ | 0-1.2 Ry | Burrows, A. L.; Lee, J. Photoionization of Ag 4d ⁹ 5s ¹ 2D _{3/2} and Cu 3d ⁹ 4s ¹ 2P _{1/2} states. <i>J. Phys. B</i> 10, 1301 (1985) United States |
| 03537 E | H17: hv + Ar; hv + Kr; hv + Xe | Thermal | Born, G.; Fricke, J. The heteronuclear anions ArK ⁺ , KrK ⁺ , and XeK ⁺ . <i>J. Phys. B</i> 10, 1355 (1985) East Germany |
| 03538 E | H36: hv + H ₂ | 500 Å | Morioka, Y.; Kanada, Y.; Hihara, K.; Hara, S.; Sakuma, H. Rotational intensity distribution of the H ₂ photoelectron spectrum. <i>J. Phys. B</i> 10, 1369 (1985) Japan |
| 03539 F | H33: hv + CH ₄ H36: hv + CH ₄ | 7.25-715 eV | Caselli, I.; Charavetta, V.; Rocca, B. Transition probability and photoionization cross section calculations for CH ₄ and HF by one-centre expansion and Stieltjes technique. <i>J. Phys. B</i> 10, 1375 (1985) Italy |
| 03540 E | H33: hv + H ₂ ; hv + CD | 200-1000 eV | Whitty, B.; Brunet, J. C.; Sidis, V. Vibrational populations of H ₂ (B ² sub g) and CD(n ²) produced by He ⁺ impact on H ₂ (B) and CD(B) in the 200-1000 eV energy range. <i>J. Phys. B</i> 10, 1395 (1985) France |
| 03541 E | H33: hv + He H05: hv + He | 33-300 eV | Forand, J. L.; Becker, K.; McKenney, J. B. Absolute electron impact excitation cross section of the He ⁺ 2 ⁰⁰ -1 ⁰⁰ line at 330 Å produced by simultaneous ionization-excitation. <i>J. Phys. B</i> 10, 1409 (1985) Canada |
| 03542 E | H05: hv + H ₂ ⁺ | 15.5-700 eV | Montagne, R. G.; Harrison, R.F.L. A measurement of the cross section for electron impact ionization of H ₂ ⁺ . <i>J. Phys. B</i> 10, 1419 (1985) United Kingdom |
| 03543 F | H06: hv + Hg ⁰ ; hv + Cd ⁰ ; hv + Sn ⁰ ; hv + Cu ⁰ | 0.8-12 eV | Goltner, S. Dielectronic recombination as a direct free-bound radiative process. <i>J. Phys. B</i> 10, 1425 (1985) United States |
| 03544 F | H12: hv + Ar ¹⁷⁺ ; hv + Br ³⁴⁺ ; hv + Kr ³⁵⁺ hv + [Ar ¹⁷⁺]; hv + [Br ³⁴⁺]; hv + [Kr ³⁵⁺] | 1-13 keV | Golitskiy, I. B.; Oks, E. A. A theory for the ion impact broadening of fine-structure sublevels. <i>J. Phys. B</i> 10, 1449 (1985) Soviet Union |
| 03545 E | H17: hv + He H06: hv + He | 2.55-10.55 Å | Chiu, S. L.; Ferguson, F.; Lavigne, P. Fused ionization of He in an ultra-intense CO ₂ laser field (10 ¹⁶ W cm ⁻²) with multiple charge creation. <i>J. Phys. B</i> 10, 1211 (1985) Canada |
| 03546 E | H17: hv + He | Thermal | Lazebnik, S. B.; Saenen, A. V. Collisional ionization of selectively excited helium in an atomic beam. <i>J. Phys. B</i> 10, 1217 (1985) Soviet Union |

| Int. No. | Reactants | Energy Range | Reference |
|----------|---|----------------|---|
| 33563 F | A30: Ca ¹⁹⁺ + He | Under | Janez, R. K.; Sedeljhovic, B. K. Quasi-stationary spectrum of Rydberg atoms in the field of a highly-charged ion. <i>J. Phys.</i> B 10, 1029 (1985) United Kingdom |
| 33564 F | 402: e + Ca | 10-500 eV | Shato, S. P.; Kumar, A.; Vijayakri Elastic scattering of electrons and positrons by the Ca atom. <i>C. Phys.</i> B 10, 1027 (1985) India |
| 33565 F | 405: e + Zn 417: e + Be | 25-30 eV | Allrich, P. L. Use of a long-range correlated factor in describing triply differential electron impact ionization cross sections. <i>J. Phys.</i> B 10, 1031 (1985) United States |
| 33566 F | 431: e + Mg | 12-103 eV | Bartschat, K.; Madison, D. S.; Fano, G. F. Spin polarization and scattering asymmetry for electron impact excitation of the (4s) state of mercury: RSDA treatment. <i>J. Phys.</i> B 10, 1027 (1985) West Germany |
| 33567 F | 434: e + He 435: e + He | 0.025-0.0 eV | Ganyani, J. P. Dissociative attachment in e + He collisions. <i>J. Phys.</i> B 10, 1039 (1985) France |
| 33568 F | 437: He + H 438: He + H | 0-0 a.u. | Bhattacharya, S. K.; Cho, S. I. The resonant photoionization of hydrogen atom in intense magnetic fields. <i>J. Phys.</i> B 10, 1275 (1985) United States |
| 33569 F | 406: Ar + Sr | 567-559 nm | Agostini, P.; Petite, C. Double multiphoton ionization via above-threshold ionization in strontium atoms. <i>J. Phys.</i> B 10, 1281 (1985) France |
| 33570 F | 401: Fe ¹⁷⁺ + H; Fe ¹⁸⁺ + H 436: Fe ¹⁷⁺ + H; Fe ¹⁸⁺ + H; Fe ¹⁹⁺ + H; 437: Fe ¹⁷⁺ + H; Fe ¹⁸⁺ + H; Fe ¹⁹⁺ + H; 438: Fe ¹⁷⁺ + H; Fe ¹⁸⁺ + H; Fe ¹⁹⁺ + H; 439: Fe ¹⁷⁺ + H; Fe ¹⁸⁺ + H; Fe ¹⁹⁺ + H; 440: Fe ¹⁷⁺ + H | 10-100 keV/amu | Schowell, H.R.C.; Janez, R. K. Charge exchange and ionization in collisions of fast partially stripped ions of iron with hydrogen. <i>J. Phys.</i> B 10, 1295 (1985) United Kingdom |
| 33571 F | 472: e + Na | 2.0 neV | Nakamura, H.; Koyano, H. Effects of ultra-low-energy resonances in the elastic scattering of electrons by alkali-metal atoms in collisions of high-hydrogen atoms with alkali-metal atoms. <i>J. Phys.</i> B 10, 1333 (1985) Canada |
| 33572 F | 407: Ar + Xe 408: Ar + Xe | Under | Edwards, H.; Lee, L.; Armstrong, L., Jr. Model study of above threshold multiphoton ionization in strong fields. <i>J. Phys.</i> B 10, 1977 (1985) United States |
| 33573 F | 411: He + He | 0.338-3.1 eV | Pouilly, D.; Orlikowski, Y.; Alexander, R. W. Fully ab initio dynamics of fine-structure-changing transitions in collisions of He(1s2p 3P) with He. <i>J. Phys.</i> B 10, 1953 (1985) France |
| 33574 F | 403: Ar + He | 5-500 keV | Tompker, A.; Ludde, H. J.; Jacob, B.; Dreizler, R. H. Many-electron aspects in ion-atom collisions: 3p-2s vacancy transfer in the Ar + He system. <i>J. Phys.</i> B 10, 1969 (1985) West Germany |
| 33575 F | 431: He + Li; Li ⁺ + He; Li ⁺ + Li; He + He 432: He + Li; Li ⁺ + He; Li ⁺ + Li; He + He | 0.36-1 keV/amu | Allen, B. J.; Hanson, J. Quasimolecular treatment of He-He ⁺ , Li-Li ⁺ , Li-He ⁺ , and He-Li ⁺ collisions with a common translation factor. <i>J. Phys.</i> B 10, 1981 (1985) West Germany |
| 33576 F | 433: He + He 434: He + He | 37.3-460 eV | Allen, B. J.; Bahring, A.; Hanson, J. Alignment and orientation of atomic orbitals in He(3p) + He ⁺ interactions. <i>J. Phys.</i> B 10, 1999 (1985) West Germany |
| 33577 F | 417: e + Ar; e + Kr; e + Xe | 17.5-750 eV | Wagenaar, B. V.; de Heer, P. J. Total cross sections for electron scattering from Ar, Kr, and Xe. <i>J. Phys.</i> B 10, 2021 (1985) The Netherlands |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|---------------------|--|
| 03578 E | E03: e + Hg F06: hv + Hg* | 0-0 eV: 405 Å* | Hann, G. F.; Michich, V.; Sohn, H. Study of electron impact excitation of metastable mercury states using stepwise electron-photon excitation. <i>J. Phys. B</i> 18, 2037 (1985) West Germany |
| 03579 E | E22: e + CO E23: e + CO E17: e + CO | 0-1.5 eV | Sohn, H.; Kochen, L. H.; Jung, K.; Ehrhardt, H.; Chany, E. S. Electron scattering from CO below resonance energy. <i>J. Phys. B</i> 18, 2049 (1985) West Germany |
| 03580 E | E25: e + CO | 5.8-19.5 eV | Bamford, P.; King, G. C.; Jaruta, J.; Read, P. H. The threshold electron spectrum of carbon monoxide. <i>J. Phys. B</i> 18, 2057 (1985) United Kingdom |
| 03581 E | A29: H ⁺ + H ⁺ | 3.0 eV | Jones, N. H. The possible role of H ⁻ ions in populating the n = 3 level in the afterglow of a Z-pinch discharge in hydrogen. <i>J. Phys. B</i> 18, 2195 (1985) United Kingdom |
| 03582 E | E32: e + He | Undef | Oza, D. R. Autoionization widths of the 2 ³ P and 2 ³ D (sup) of doubly excited states of He. <i>J. Phys. B</i> 18, L321 (1985) United States |
| 03583 E | E24: hv + Ba | 21.3-23 eV | Hannemann, A.; Prescher, T.; Richter, H.; Schmidt, H.; Sonntag, M.; Setzel, R. E.; Zimmermann, P. VUV photoelectron spectroscopy of laser-excited atomic Ba. <i>J. Phys. B</i> 18, L337 (1985) West Germany |
| 03584 E | F06: 2hv + H ⁺ | 74000-80 Å* | Karala, L. Two-photon ionization of excited atomic hydrogen at the photoelectric threshold and above. <i>J. Phys. B</i> 18, 2207 (1985) Soviet Union |
| 03585 E | E25: hv + O ₂ | 700-500 Å* | Akabori, T.; Horioka, T.; Watanabe, H.; Nagaiishi, T.; Ito, K.; Nakamura, H. Dissociation processes of O ₂ in the VUV region 500-700 Å. <i>J. Phys. B</i> 18, 2219 (1985) Japan |
| 03586 E | A17: H ₂ ⁺ ; H ₂ ; HHe ⁺ | Undef | Miller, A. Upper bounds for the zeroth moment of the potential curve for some simple diatoms. <i>J. Phys. B</i> 18, 2231 (1985) United States |
| 03587 E | A33: Li ⁺ + He A36: Li ⁺ + He | 1-25 keV | Andersen, N.; Andersen, T.; Heitzke, H. P.; Pedersen, E. H. A coherence study of 2p sigma - 2p pi rotational coupling: Li(2 ² P) and He(2 ¹ P) orientation and alignment in 1-25 keV Li ⁺ + He collisions. <i>J. Phys. B</i> 18, 2267 (1985) Denmark |
| 03588 E | A36: H ⁺ + H | 0.5-200 keV | Deco, G. L.; Sivatoia, R. D. A second-order symmetric eikonal approximation for electron capture at high energies. <i>J. Phys. B</i> 18, 2281 (1985) Argentina |
| 03589 E | A36: C ⁴⁺ + Al; C ⁴⁺ + Cu; C ⁴⁺ + Ag; Ne ⁹⁺ + Al; Ne ⁹⁺ + Cu; Ne ⁹⁺ + Ag; Ar ¹⁶⁺ + Al; Ar ¹⁶⁺ + Cu; Ar ¹⁶⁺ + Ag | 140-1050 keV/amu | Humphries, W. J.; Moisevitch, B. L. Total cross sections for electron capture at relativistic energies. <i>J. Phys. F</i> 18, 2295 (1985) United Kingdom |
| 03590 E | E22: e + CH ₄ ; e + C ₂ H ₆ E23: e + CH ₄ ; e + C ₂ H ₆ E17: e + CH ₄ ; e + C ₂ H ₆ | 7.5-20 eV | Curry, P. J.; Newell, V. E.; Smith, A.C.H. Elastic and inelastic scattering of electrons by methane and ethane. <i>J. Phys. B</i> 18, 2303 (1985) United Kingdom |
| 03591 E | H07: hv + H ⁻ | 3.175-3.35 eV | Fink, H.G.J.; Zoller, P. One- and two-photon detachment of negative hydrogen ions: a hyperspherical adiabatic approach. <i>J. Phys. B</i> 18, L373 (1985) Austria |
| 03592 E | A17: Na + K; Na + K ⁺ | Undef | Bunney, R.; Asbert-Fracco, M. Calculated long-range coefficients C(sub n) (n = 6, 8, 10) for the interactions Na(3s) + K(4s) and Na(3s) + K(4p). <i>J. Phys. B</i> 18, L379 (1985) France |
| 03593 E | E17: e + H ⁺ | 50.0 eV | Ivanov, G. K.; Golubkov, G. V. A simple version of the multichannel quantum defect analysis of inelastic atomic processes involving molecular Rydberg states. <i>J. Phys. B</i> 18, L383 (1985) Soviet Union |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|------------------------------|---|
| 03594 E | D12: Ag ⁺ • Yb; Ag ⁺ • Yb; Ag ⁺ • W; Ag ⁺ • Pt; Ag ⁺ • Zb; Ag ⁺ • Th | 1 keV/amu | Schul, W.; Lapich, G.; Hilsner, R. F.; Raman, S.; Roe, P. W.; Wenz, C. R. L x-ray emission from high-Z elements after ionization by 1 MeV n ⁺ Ag ions. J. Phys. B 10, L309 (1985) United States |
| 03595 F | E03: e • Ca ⁺ | 3.00-300 eV | Warrington, R. A. Electron impact excitation of Σ III in a two-level state S-matrix calculation. Effective collision strengths between the $n = 2$ states. J. Phys. B 10, L395 (1985) United Kingdom |
| 03596 F | H32: He • He | 6.10-6.3x10 ⁻¹ eV | Loon, A. M. Variation in cross section fluctuations arising from a Rydberg series interacting with a broad level. J. Phys. B 10, 2339 (1985) United Kingdom |
| 03597 E-F | H02: He • He H06: He • He | 607 Å | McLean, R. J.; Ballagh, R. J.; Farrington, D. M. Population trapping in the near 2p _{1/2} -1s transition. J. Phys. B 10, 2371 (1985) New Zealand |
| 03598 E | E07: He • Yb E26: He • Yb | 390.0 nm | Blondel, C.; Chappuis, R. J.; Delsart, C. Photoionization laser spectroscopy of ytterbium atoms in the presence of a DC electric field. J. Phys. B 10, 2403 (1985) France |
| 03599 E | E03: He • Au; He • Ag; He ⁺ • Au; He ⁺ • Pb; He ⁺ • U; He ⁺ • U A35: He • Au; He • Ag; He ⁺ • Au; He ⁺ • Pb; He ⁺ • Pb; He ⁺ • U; He ⁺ • U; He ⁺ • U | 0.2-0.9 MeV/amu | James, A. P.; Lopes, J. S.; Ribeiro, J. P. L-shell x-ray production cross sections for Au, Pb, and U by protons, deuterons and alpha impact. J. Phys. B 10, 2453 (1985) Portugal |
| 03600 F | L36: Under: | Under | Pube, L. J.; Richter, J. Structural and asymptotic properties of the eikonal approximation for electron capture. J. Phys. B 10, 2467 (1985) West Germany |
| 03601 F | A09: He • He | 0-50 keV | Shingal, R.; Bryukov, B. M.; Flower, D. S. Neutralization in He • He collisions. J. Phys. B 10, 2485 (1985) United Kingdom |
| 03602 E | A31: He • Li A36: He • Li | 2-25 keV | Auseyr, P.; Lakita, G.; Housni, M.; Suter, R. Inelastic He • Li (2s) collisions (2-25 keV): III. Electron capture into the 4(2s) subshell. J. Phys. B 10, 2493 (1985) Austria |
| 03603 E | A36: He ⁺ • He; He ⁺ • He; He ⁺ • He; He ⁺ • He; He ⁺ • He; He ⁺ • He A38: He ⁺ • He; He ⁺ • He; He ⁺ • He; He ⁺ • He; He ⁺ • He; He ⁺ • He | 3.5-9.0 eV/amu | Crahan, S. G.; Seifner, K. H.; Beckstein, R. H.; Clark, M.; McFarland, R. E.; Morgan, T. J.; Schlachter, A. S.; Stearns, J. W.; Stockli, H. P.; Tavis, J. A. Charge-state dependence of single-electron-capture and -loss cross sections for highly stripped V ions in He at 0.55 MeV am ⁻¹ . J. Phys. B 10, 2501 (1985) United Kingdom |
| 03604 F | E02: e • He; e • He; e • K; e • Li E03: e • He; e • He; e • K; e • Li E17: e • He; e • He; e • K; e • Li | 50.0-60 eV | McCarthy, T. E.; Nitroy, J. D.; Stelbovic, A. T. Electron scattering from alkali atoms in the one-electron model. J. Phys. B 10, 2509 (1985) Australia |
| 03605 F | E02: e • Pb E03: e • Pb E07: e • Pb | 3-7 eV | Bartschat, K. Low-energy scattering of electrons by lead atoms. J. Phys. B 10, 2519 (1985) United Kingdom |
| 03606 E | A17: He; He ⁺ E04: e • He E25: e • He | 17-160 eV | Khaloo, M. A.; Scivakov, S. I. The kinetic energy spectrum of protons produced by the dissociative ionisation of H ₂ by electron impact. J. Phys. B 10, 2525 (1985) United States |
| 03607 E | E05: e • CO ₂ | 3-13 eV | Crjevanovic, S.; Jureta, J.; Crjevanovic, D. Threshold spectrum of CO ₂ . J. Phys. B 10, 2541 (1985) Yugoslavia |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|------------------------|--|
| 03608 E | 795: e + Kr; e + Xe F77: e + Kr; e + Xe | 1-3.5 keV | Mahn, U.; Senke, J.; Herr, H.; Kessler, J. Spin polarization and angular distribution measurement of RMB Auger electrons from krypton and xenon. <i>J. Phys. B</i> 18, L817 (1985) East Germany |
| 03609 F | 837: Undef 806: Undef | Undef | Stohe, A. Interpretation of electron spectra obtained from multiphoton ionization of atoms in strong fields. <i>J. Phys. B</i> 18, L827 (1985) United States |
| 03610 E | 432: He ⁺ + He A17: He ⁺ + He | 15-75 keV | Martung, R.; Fricks, B.; Stepp, W. O.; Seangler, H.; Kolb, R. Theoretical evidence for quasi-molecular structure at small internuclear distances in elastic ion-atom scattering. <i>J. Phys. B</i> 18, L833 (1985) West Germany |
| 03611 E | A39: F ⁺ + H ⁺ ; He ⁺ + H ⁺ | 30-3000 keV | Peart, R.; Bennett, M. A.; Solder, K. New measurements of the mutual neutralization of H ⁺ /H ⁻ and He ⁺ /H ⁻ ions. <i>J. Phys. B</i> 18, L839 (1985) United Kingdom |
| 03612 E | 782: e + CH ₄ F19: e + CH ₄ | 0.85-12 eV | Ferch, J.; Granitzka, B.; Raith, F. The Ransauer sinuses of methane. <i>J. Phys. B</i> 18, L845 (1985) East Germany |
| 03613 E | E33: e + H ₂ | 3.6-4.5 eV | Allen, S. Experimental observation of structures in the energy dependence of vibrational excitation in H ₂ by electron impact in the ² Σ(sub u) ⁺ resonance region. <i>J. Phys. B</i> 18, L851 (1985) Switzerland |
| 03614 E | E33: e + Yb; e + Yb ⁺ F35: e + Yb; e + Yb ⁺ | 8-500 eV | Forrest, L. F.; Pfeifer, V.; James, J. K.; Daniell, G. J.; Bross, K. J. An experimental investigation of the ejected-electron spectra arising from autoionising and Auger transitions in Yb I and Yb II excited by electron impact for the range of incident electron energies 8-500 eV. <i>J. Phys. B</i> 18, 2631 (1985) United Kingdom |
| 03615 F | B36: hν + Na; hν + K | 308 nm | Ho, K. I.; Yergans, F.; Chin, S. L. Observation of multiply charged ions of alkaline atoms by multiphoton ionization. <i>J. Phys. B</i> 18, 2645 (1985) Canada |
| 03616 E | A16: F ⁺ + Ar; D ⁺ + Ar; H ⁺ + Ne; D ⁺ + Ne; F ⁺ + He; D ⁺ + He; H ⁺ + Kr; D ⁺ + Kr; F ⁺ + Xe; D ⁺ + Xe | 50-250 eV | Hege, U.; Itoh, Y.; Linder, F. Electron detachment in B ⁺ (D ⁺) collisions with rare-gas atoms: angular distributions of the neutral B(D) atoms. <i>J. Phys. B</i> 18, 2705 (1985) West Germany |
| 03617 E | A33: Li + He; Na + He; K + He; Rb + He; ... + He | 0.3-600 keV | Kineta, M.; Pascale, J. Excitation process in alkali-atom-He collisions in the keV energy range. <i>J. Phys. B</i> 18, 2719 (1985) France |
| 03618 F | ...: e + H | 50.4-100 eV | Madison, D. M.; Hughes, J. A.; McGinness, D. S. An exact second-order theory and its application to electron-hydrogen excitation. <i>J. Phys. B</i> 18, 2737 (1985) United States |
| 03619 F | E05: Undef | Undef | Peterkop, B.; Ljepinsh, A. Plane-wave asymptotic form in the electron-atom ionization problem. <i>J. Phys. B</i> 18, 2763 (1985) Soviet Union |
| 03620 E | A11: He ⁺ + He | 200-400 K | Akoshile, T. O.; Clark, J. D.; Cunningham, A. J. Reactions of excited neon atoms in neon-helium afterglows: I. Rate data. <i>J. Phys. B</i> 18, 2793 (1985) United States |
| 03621 F | F35: e + B ⁺⁺ ; e + C ⁺⁺ | Undef | LaGattuta, K. J. Multichannel theory and continuum-continuum transitions in above-threshold ionization. <i>J. Phys. B</i> 18, L867 (1985) United States |
| 03622 F | 806: hν + O | 725-500 Å ^o | Russell, N.I.A.; Holland, D.N.P.; Codling, K.; Hoodruff, P. B.; Ishiguro, E. Photoionisation of atomic oxygen in the wavelength range 725-500 Å ^o . <i>J. Phys. B</i> 18, 2827 (1985) United Kingdom |
| 03623 E | A05: H ⁺ + Cu; H ⁺ + Ni; H ⁺ + Cd | 59.58 keV | Casati, F.; Tartari, A.; Beralli, C.; Napoli, G. Measurement of the K sub α /K sub β yield ratios of Cu, Ni and Cd stimulated by 59.58 keV protons. <i>J. Phys. B</i> 18, 2883 (1985) Italy |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|--|---|
| 33624 E | A31: Xe ⁺ • Xe; Kr ⁺ • Kr; Ar ⁺ • Ar; Xe ⁺ • Xe | Thermal | Beutl, G.; Frey, L.; Fricko, J. Ar ₂ ⁺ , Kr ₂ ⁺ , and Xe ₂ ⁺ excimer formation from metastable and α-particle impact on solid rare-gas layers. <i>J. Phys. B 10</i> , 2051 (1985) West Germany |
| 33625 F | A12: Ce • W A17: Ce • W | Defect | Visticot, J. P.; Pascale, J.; Sayer, B. Far wings of the 662-584 and 662-781 transitions in Ce-W: influence of non-adiabatic effects. <i>J. Phys. B 10</i> , 2061 (1985) France |
| 33626 E | A35: W • Dy; W • Yb; W • J; W • Au; W • Pb; W • Bi; W • Th; W • U A37: W • Dy; W • Yb; W • J; W • Au; W • Pb; W • Bi; W • Th; W • U B12: W • Dy; W • Yb; W • J; W • Au; W • Pb; W • Bi; W • Th; W • U | 1-3 MeV | Sekki, S. S.; Crumpton, D. L-shell ionization of medium and heavy elements by 1-3 MeV incident protons. <i>J. Phys. B 10</i> , 2077 (1985) United Kingdom |
| 33627 F | A31: Wdef A36: Wdef | 1.10 MeV | Crothers, D.S.F. First-order continuous-distorted-wave double-scattering xia transitions. <i>J. Phys. B 10</i> , 2079 (1985) United Kingdom |
| 33628 F | A31: W • F; W • N; W • He A36: W • N; W • He; W • He | Defect | Crothers, D.S.F. Second-order continuous-distorted-wave double-scattering xia transitions. <i>J. Phys. B 10</i> , 2093 (1985) A31; A36; United Kingdom |
| 33629 F | A36: W • N A18: W • N | 25-60 keV | Crothers, D.S.F.; McCann, J.F. Exact two-channel variational continuous-distorted-wave theory: results for symmetric resonant exchange. <i>J. Phys. B 10</i> , 2137 (1985) United Kingdom |
| 33630 F | E32: e • He; e • E ₂ | 0.1-1000 eV | Khare, S. P.; Iata, K. Elastic scattering of electrons and positrons by the helium atom and the hydrogen molecule at intermediate energies. <i>J. Phys. B 10</i> , 2901 (1985) India |
| 33631 E | E35: e • He E1: e • He | 633 eV | Jang, K.; Müller-Fiedler, R.; Schüssler, F.; Ehrhardt, H.; Klar, H. Absolute triple differential cross sections of electron impact ionization of helium at 633 eV collision energy. <i>J. Phys. B 10</i> , 2955 (1985) West Germany |
| 33632 F | E33: e • He E07: e • He | 30 eV | Taylor, K. T.; Clark, C. N.; Fom, S. C. Electron scattering by He ⁺ in resonance regions. <i>J. Phys. B 10</i> , 2967 (1985) United Kingdom |
| 33633 F | E33: e • Hg ²⁺ | 4x10 ⁻⁴ -8x10 ⁴ eV | Tayal, S. S.; Kingston, A. E. Electron collisional excitation of semi-forbidden transitions from the n = 1 and n = 2 states to the n = 3 states in Hg II. <i>J. Phys. B 10</i> , 2903 (1985) United Kingdom |
| 33634 E | F05: e • Ar ⁺ | 17.0-120 eV | Müller, A.; Haber, K.; Tinschert, K.; Becker, B.; Salzborn, E. An improved crossed-beam technique for the measurement of absolute cross sections for electron impact ionization of ions and its application to Ar ⁺ ions. <i>J. Phys. B 10</i> , 2993 (1985) West Germany |
| 33635 E | F05: e • Ar ⁺ ; e • Ar ²⁺ | 57.5-325 eV | Müller, A.; Tinschert, K.; Schenck, C.; Becker, B.; Salzborn, E. Electron impact double ionization of Ar ⁺ and Ar ²⁺ ions. <i>J. Phys. B 10</i> , 3111 (1985) West Germany |
| 33636 E | F30: 2hν • Ba | 670-283 nm | Causse, P.; Fillet, P.; Boulser, J. Spectroscopic studies of 9d ¹ d doubly excited autoionizing states of neutral barium. <i>J. Phys. B 10</i> , L881 (1985) France |
| 33637 F | H06: hv • Ar | 159-100 eV | Telkki, J.; Aberg, T. Near-threshold K-shell photoionization in argon. <i>J. Phys. B 10</i> , L809 (1985) Finland |
| 33638 F | H06: 2hv • Ca | 560.6 nm | Croser, C. L.; Clark, C. V. Resonant structure in multiphoton ionization of calcium. <i>J. Phys. B 10</i> , L897 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|---------------|--|
| 03639 E | R06: Shv + H ₂ | 3060 Å | Carnegie, C.; Rocca, J.; Formad, B. Resonant multiphoton ionization-dissociation of H ₂ . <i>J. Phys. B</i> 18, L531 (1985) France |
| 03640 F | A00: S10 ⁺ + C; S11 ⁺ + C; S12 ⁺ + C; S13 ⁺ + C; S14 ⁺ + C; S15 ⁺ + C; S16 ⁺ + C C36: S10 ⁺ + C | 125 MeV | Schramm, R.; Kuecher, P.; Metz, H. B.; Burkhard, H.; Kemmler, J.; Heil, D.; Grossmuller, K. O. Charge state dependence of heavy-electron yields in fast ion-foil interaction. <i>J. Phys. B</i> 18, L537 (1985) West Germany |
| 03641 E | A26: Na + Cl | 1.52-10 eV | Huang, D. P.; Yang, S. Y.; Wrynaber, E. H. Ion pair production in collisions of Na and Cl. <i>J. Phys. B</i> 18, L513 (1985) United States |
| 03642 E-F | A32: He + H ₂ ; He + O, A18: He + H ₂ ; He + O, | 27 neV (c.m.) | Ciavarella, F. A.; Palma, A. Angular distribution for He-H ₂ and He-O ₂ collisions at 27 neV: a comparison with experiments. <i>J. Phys. B</i> 18, L519 (1985) Italy |
| 03643 F | A09: Undef | Undef | Fleming, H. E. Ion-ion recombination at high ion density. <i>J. Phys. B</i> 18, L531 (1985) United States |
| 03644 E | D12: H ⁺ + Co; H ⁺ + Ni; H ⁺ + Cu; H ⁺ + Zn | 0.06-2.4 MeV | Reimer, U.; Jitschin, W.; Lutz, H. O. Polarization of the proton-induced L _α -radiation in M transition elements. <i>J. Phys. B</i> 18, 3113 (1985) East Germany |
| 03645 E | E03: e + Sn E05: e + Sn | 20-1000 eV | Ferrant, L. F.; James, G. K.; Bone, E. J.; Wilson, H.; Fantasia, A. An experimental and theoretical study of the ejected-electron spectrum of Sn I and Sn II autoionizing levels between 0 and 20 eV resulting from 20-1000 eV electron impact excitation. <i>J. Phys. B</i> 18, 3123 (1985) United Kingdom |
| 03646 F | B07: hv + Na R06: hv + Na | 409-610 nm | Leconte, J. M.; Luc-Koenig, E. Continuous state mixing induced by the weak magnetic field of the earth in the photoionization Stark spectra of sodium. <i>J. Phys. B</i> 18, 3139 (1985) France |
| 03647 F | B37: e + hv + Ar E32: e + Ar E11: e + Ar | Undef | Bivona, S.; Durlon, S.; Zanara, B.; Ferrante, G. Electron scattering in strong laser fields. Theoretical models versus recent experiments. <i>J. Phys. B</i> 18, 3159 (1985) Italy |
| 03648 E | D05: hv + Y; hv + Co; hv + Dy; hv + Yb | 279-661 keV | Sanna, A. S.; Viswesvara Rao, V. Photoelectric cross sections of 279 and 661 keV gamma rays in Y, Co, Dy, and Yb. <i>J. Phys. B</i> 18, 3161 (1985) India |
| 03649 F | A17: F + Xe | Undef | Picart, J.; Avrillier, S.; Tran Minh, B. Low-energy shape resonances in Lennard-Jones potentials. <i>J. Phys. B</i> 18, 3167 (1985) France |
| 03650 E | A11: Rb ⁺ + K ⁺ | 500 K | Cheron, D.; Houdouk, S. Collisions between excited potassium and rubidium atoms. <i>J. Phys. B</i> 18, 3197 (1985) France |
| 03651 F | E25: e + H E17: e + H | 253 eV | Sykes, F. W., Jr.; Joachain, C. J.; Piroux, D. Rikonal-Dom series theory of (e, 2e) reactions in atomic hydrogen. <i>J. Phys. B</i> 18, 3223 (1985) United States |
| 03652 F | E26: e + Hg ⁺ | 3.0-5 eV | Richman, A. P. Dielectronic recombination on Hg ⁺ . <i>J. Phys. B</i> 18, 3219 (1985) United States |
| 03653 E-F | A33: Al ¹⁰⁺ + H, A26: Al ¹⁰⁺ + H ₂ | 2.6 keV/nm | Moys, M.; Hitz, D.; Dousson, S.; Desclaux, J. P.; Blinn, S.; Druetta, M. Charge exchange-collision-based spectroscopy of Al VII. <i>J. Phys. B</i> 18, L539 (1985) France |
| 03654 F | R26: hv + Ar; hv + Xe | 60.1-269 eV | Kochiev, N. T.; Shekerson, S. I. The post collision interaction in the inner-shell photoionization of Ar and Xe. <i>J. Phys. B</i> 18, L551 (1985) Soviet Union |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|-------------------------------|--|
| 33655 F | A35: Undef | Undef | Amun'ya, B. Y.; Ivanov, V. R.; Kharchenko, V. A. Electron spin co-orientation in adiabatic atomic collisions. <i>J. Phys. B</i> 10, L263 (1985) Soviet Union |
| 33656 F | A06: H ⁺ + H; H ⁺ + H ⁺ | 1-5 MeV | McDann, J. P. Continuum distorted-wave theory of relativistic electron capture. <i>J. Phys. B</i> 19, L569 (1985) United Kingdom |
| 33657 F | A33: Undef A06: Undef | Undef | Frans, J. E. Vacancy production and decay in transfer-excitation collisions. <i>J. Phys. B</i> 10, L575 (1985) United States |
| 33658 F | E02: e + He | 3-163 eV | Suchkov, E. V. The power-type singularity in the electron-atom scattering amplitude. <i>J. Phys. B</i> 10, L579 (1985) Soviet Union |
| 33659 F | E33: e + H | 133-353 eV | Petriloge, R. S.; Joachain, C. J. Coherent electron impact excitation of the n = 2 states of atomic hydrogen at intermediate energies. <i>J. Phys. B</i> 10, L585 (1985) Belgium |
| 33660 F | E03: e + Kr | 50 eV | King, S. J.; Mill, P. A.; Cross, A. Electron impact excitation of the lowest-lying excited states of krypton. <i>J. Phys. B</i> 10, L589 (1985) United Kingdom |
| 33661 F | E03: e + Kr | 60-80 eV | Dunjo, A.; Koike, T.; Kani, K.; Sugahara, R.; Takahashi, A.; Nishimura, H. Electron-photon angular correlations for the excitation of krypton by electron impact. <i>J. Phys. B</i> 10, L595 (1985) Japan |
| 33662 F | E33: e + Si ¹³⁺ ; e + Ca ¹⁰⁺ ; e + Fe ¹⁶⁺ ; e + Kr ³⁶⁺ E35: e + Si ¹³⁺ ; e + Ca ¹⁰⁺ ; e + Fe ¹⁶⁺ ; e + Kr ³⁶⁺ E36: e + Si ¹³⁺ ; e + Ca ¹⁰⁺ ; e + Fe ¹⁶⁺ ; e + Kr ³⁶⁺ | 3.3311-6.6x10 ³ eV | Ljapojovic, B. P.; Schirter, R. H. P.; Volcota, S. The spectral intensities from hydrogen-like ions II. <i>J. Phys. B</i> 10, 3285 (1985) Yugoslavia |
| 33663 F | A33: H ⁺ + Hg ¹⁰⁺ ; H ⁺ + C ⁶⁺ ; H ⁺ + He ⁺ A35: H ⁺ + Hg ¹⁰⁺ ; H ⁺ + C ⁶⁺ ; H ⁺ + He ⁺ E33: e + Hg ¹⁰⁺ ; e + C ⁶⁺ ; e + He ⁺ E35: e + Hg ¹⁰⁺ ; e + C ⁶⁺ ; e + He ⁺ | 0.013-1.10x10 ³ eV | Talents, G. J. The relative intensities of hydrogen-like fine structure emitted from recombining and steady-state plasmas. <i>J. Phys. B</i> 10, 3299 (1985) Australia |
| 33664 F | H00: 2hv + H ₂ O | 0-0.2 a.u. | Boccia, R.; Sizzo, A. Two-photon transition probability calculations: electronic transition in the water molecule. <i>J. Phys. B</i> 10, 3319 (1985) Italy |
| 33665 F | E37: e + H + hv E32: e + H | 50.0-133 eV | Bandal, A. K.; Bano, B.; Sajwadar, P. S.; Ghosh, A. K. Laser-assisted electron-atom collisions including the exchange effect. <i>J. Phys. B</i> 10, 3339 (1985) India |
| 33666 F | E32: e + CH ₄ E17: e + CH ₄ | 5-333 eV | Fliender, K.; Fromme, D.; Balth, W.; Schwob, A.; Simepus, G. Total cross section measurements for positron and electron scattering on hydrocarbons between 5 and 333 eV. <i>J. Phys. B</i> 10, 3367 (1985) West Germany |
| 33667 F | E37: hv + e | | Varre, S.; Eblotzky, F. Classical limit of Compton scattering and electron scattering in external fields. <i>J. Phys. B</i> 10, 3395 (1985) Hungary |
| 33668 F | A03: Li + He | 3-60 keV(c.a.) | Kiura, H.; Olson, R. K. Li(2s - 2p) and He(3s - 3p) excitation in Li-He collisions. <i>J. Phys. B</i> 10, L617 (1985) United States |
| 33669 F | D00: He ⁰⁺ + H; He ⁰⁺ + H; He ⁰⁺ + H; He ⁰⁺ + H; He ⁰⁺ + H; He ⁰⁺ + H; He ⁰⁺ + H; He ⁰⁺ + H; He ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Ar ⁰⁺ + H; Kr ⁰⁺ + H; Kr ⁰⁺ + H; Kr ⁰⁺ + H; Kr ⁰⁺ + H; Kr ⁰⁺ + H; Kr ⁰⁺ + H; Xe ⁰⁺ + H; Xe ⁰⁺ + H; Xe ⁰⁺ + H; Xe ⁰⁺ + H; Xe ⁰⁺ + H; Xe ⁰⁺ + H | 13 keV | de Waart, S. T.; Fried, T.; Jellien, H.; Boers, R. L.; Bontje, A. G. Charge distribution of multiply charged ions scattered from tungsten. <i>J. Phys. B</i> 10, L623 (1985) The Netherlands |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|-----------------|--|
| 33673 F | E32: e + H ₂ E33: e + H ₂ E17: e + H ₂ | 23-81.6 eV | Ng-Yao, L.; Botelho, L.F.C.; Freitas, L.C.G. Vibrationally elastic and inelastic (D - 1) scattering of electrons by H ₂ - a coherent renormalized multicentre potential model approach. J. Phys. B 10, 1633 (1985) Brazil |
| 33674 E | H30: hv + Tl | 1223-796 eV | Saly, R. A.; Combridge, J. P. New high-resolution study of the 6s subshell spectrum of Tl I. J. Phys. B 10, 3487 (1985) West Germany |
| 33675 F | A12: H + H ₂ | 5333-9333 eV | Monteiro, T. S.; Dickinson, A. J.; Lewis, E. L. The broadening and shift of the sodium D lines due to collisions with atomic hydrogen. J. Phys. B 10, 3499 (1985) United Kingdom |
| 33676 F | H07: 2hv + H ⁻ ; hv + H ⁻ | 0.0-2.7 eV | Crance, R.; Aymar, R. Two-photon detachment of H ⁻ . A model calculation. J. Phys. B 10, 3529 (1985) France |
| 33678 F | E30: hv + Be E06: hv + Be ⁺ | 1333-953 eV | Roetta, R.; Spizzo, P. One-photon transition probabilities and photoionisation cross section calculations of Be. J. Phys. B 10, 3537 (1985) Italy |
| 33675 F | E32: 2hv + Be E30: 2hv + Be | 0.0-234 a.u. | Roetta, R.; Spizzo, P. Two-photon transition probabilities and photoionisation cross section calculations of Be. J. Phys. B 10, 3555 (1985) Italy |
| 33676 F | H36: hv + Na | 38-103 eV | Craig, R. I.; Larkins, P. P. Photoionisation calculations for the 3p subshell of atomic sodium. J. Phys. B 10, 3569 (1985) Australia |
| 33677 F | H36: hv + Hg | 18-73 eV | Keller, F.; Combet Farnoux, P. Characteristic features of spin polarisation for outer subshells of mercury. J. Phys. B 10, 3581 (1985) France |
| 33678 F | A33: He ⁺ + PERT; He ⁺ + PERT A35: He ⁺ + PERT; He ⁺ + PERT A37: He ⁺ + PERT; He ⁺ + PERT | 3.2-13 keV | Cohen, D. D. Theoretical calculations of the Betz technique for the 2s _{1/2} subshell ionisation cross sections from the L (sub gamma 1), L (sub gamma 2), and L (sub gamma 3) x-ray lines. J. Phys. B 10, 3637 (1985) Australia |
| 33679 E | A33: He ⁺ + Cd; He ⁺ + Cd A36: He ⁺ + Cd; He ⁺ + Cd A37: He ⁺ + Cd; He ⁺ + H ₂ | Thermal | Baltayan, P.; Puhay-Peyroola, J. C.; Sedghi, S. Determination of the rate constants for populations of the individual Cd ⁺ levels in thermal Penning and charge transfer reactions of He ⁺ (2P ⁺), and He ⁺ with cadmium. J. Phys. B 10, 3675 (1985) France |
| 33680 E | A33: C ²⁺ + H; C ²⁺ + H ₂ A36: C ²⁺ + H; C ²⁺ + H ₂ | 0.7-8.6 keV/amu | Ciric, D.; Brzduk, A.; Dijkkamp, D.; de Boer, P. J.; Fister, H. State-selective electron capture in C ²⁺ -H, H ₂ collisions (0.7-8.6 keV am ⁻¹) studied by photon spectroscopy. J. Phys. B 10, 3639 (1985) The Netherlands |
| 33681 F | F03: n + Se | 17-500 eV | Tombour, P.-J.O.; Biley, J. L.; Fennie, S. C.; Parrot, J. E.; Buckman, S. J. Total cross sections for the production of metastable neon atoms by electron impact. J. Phys. B 10, 3661 (1985) Australia |
| 33682 F | C30: As ⁺ + Si; As ⁺ + Ge; As ⁺ + SiN; Sb ⁺ + Si; Sb ⁺ + Ge; Sb ⁺ + SiN; Bi ⁺ + Si; Bi ⁺ + Ge; Bi ⁺ + SiN; P ⁺ + Si; P ⁺ + Ge; P ⁺ + SiN | Undef | Moharri-Kahki, M.; Ashworth, D. G. Calculation of projected range distributions of implanted ions in multilayer multi-element substrates. J. Phys. C 10, 1135 (1985) United Kingdom |
| 33683 F | A10: H + D ₂ | 0.55-1.3 eV | Blain, S. C.; Herstein, R. S.; Levine, R. D. Orientation dependence of the H + D ₂ reaction cross section: static model vs. trajectory calculations. J. Phys. Chem. 89, 10 (1985) United States |
| 33684 F | A17: He + H ₂ | Undef | Seaff, S. J.; Barton, P. G. An ab-initio study of the isotropic and anisotropic potential energy surfaces of the He-H ₂ interaction. J. Phys. Chem. 89, 197 (1985) Australia |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|--------------------------|---|
| 03685 F | A10: $H + H_2; D + H_2$ | 297-356 K | Garrett, B. C.; Truhlar, D. G. Generalized transition state theory and least-action tunneling calculations for the reaction rates of $H(D) + H_2(v=1) - H_2(HD) + H$. <i>J. Phys. Chem.</i> 89, 2220 (1985) United States |
| 03686 F | A10: $H_2^+ + H_2$ | 9.11-0.93 eV | Zahar, C. R.; Schatz, G. C. A semiclassical trajectory study of the $H_2^+ + H_2 - H_2^+ + H$ reaction. <i>J. Phys. Chem.</i> 89, 2612 (1985) United States |
| 03687 F | A17: $Hg + H_2$ | undef | Chaquin, P.; Sevin, A.; Yu, Y. Triplet vs. singlet reactivity of $3s^2 3p^2$ states of Hg on H_2 : a theoretical ab initio SCF-CI investigation. <i>J. Phys. Chem.</i> 89, 2013 (1985) France |
| 03688 E | A37: $He^+ + H_2$ A11: $He^+ + H_2$ A17: $He^+ + H_2$ | 15 neV | Tuffin, F.; LeRuden, A.; Perceux, J. Angular distribution of ejected electrons in Penning ionization of molecular nitrogen by helium metastable states 2^3S and 2^3P . <i>J. Phys. (Paris)</i> 86, 181 (1985) France |
| 03689 K-T | A36: $H^+ + Kr$ | 2-3 MeV | Andriamonjy, S.; Chénis, J. F.; Beterrier, J.; Saboya, B.; Schenker, J. M.; Seikic, B.; Gayet, B.; Salin, A.; Laurent, B.; Schepfer, J. F. Electron capture from the krypton M-shell by MeV protons. <i>J. Phys. (Paris)</i> 86, 309 (1985) France |
| 03690 K-T | A03: $C^{2+} + H; H^{2+} + H; O^{2+} + H$ A36: $H^{2+} + H; H^{2+} + H; H^{2+} + H; O^{2+} + H; O^{2+} + H;$ $O^{2+} + H; O^{2+} + H; O^{2+} + H; He^{2+} + H;$ $He^{2+} + H; He^{2+} + H; He^{2+} + H;$ $Ne^{2+} + H; Ne^{2+} + H; C^{2+} + H; C^{2+} + H;$ $F^{2+} + H$ | 9.25-50 keV/amu | Bendahan, R.; Blinn, S.; Deussen, S.; Metz, B.; Gayet, B.; Haussen, J.; Harrel, C.; Salin, A. Electron capture from atomic hydrogen by multiply charged ions in low energy collisions. <i>J. Phys. (Paris)</i> 86, 561 (1985) France |
| 03691 F | A17: $Li^{2+} + H$ | undef | Errea, L. F.; Hender, L.; Riern, A.; Yanes, R.; Haussen, J.; Harrel, C.; Salin, A. The LiH^{2+} quasimolecule. A comparison between the configuration interaction and the ODM approach. <i>J. Phys. (Paris)</i> 86, 739 (1985) Spain |
| 03692 E-T | A36: $Li^{2+} + H$ | 3.5-25 keV/amu | Errea, L. F.; Hender, L.; Riern, A.; Yanes, R.; Haussen, J.; Harrel, C.; Salin, A. Charge exchange in $Li^{2+}(1s) + H(1s)$ collisions. A molecular approach including two-electron transition factors. <i>J. Phys. (Paris)</i> 86, 719 (1985) Spain |
| 03693 E | D13: $H^+ + Ti$ | 667 eV | Bastast, B. Determination of hydrogen concentration profiles in titanium using SIMS. <i>J. Vac. Sci. Technol. A</i> 3, 1263 (1985) United States |
| 03694 F | D33: $e + He^+$ | Threshold | Bayes, F. A.; Saraph, H. Z.; Souton, H. J. Collision strength for the $[He II]$ line at 32.0 eV. <i>Mon. Not. R. Astron. Soc.</i> 215, 65p (1985) United Kingdom |
| 03695 F | C02: $e + Si; e + H_2O$ C05: $e + Si; e + H_2O$ | 10 ⁻² -20 MeV | Rogers, D.F.O. Low energy electron transport with EOS. <i>Nucl. Instrum. Methods Phys. Res. A</i> 227, 525 (1984) Canada |
| 03696 E | C36: $B^+ + Si; Au^+ + Si$ | 10-390 keV | Behar, N.; Fichtner, P. F.; Olivieri, C. A.; De Souza, J. P.; Lavislat, F. C.; Bierzack, J. P. Range profiles of implanted B and Au in amorphous silicon. <i>Nucl. Instrum. Methods Phys. Res. B</i> 6, 453 (1985) West Germany |
| 03697 E | D02: $Ar^+ + Cu; Ar^+ + Pt; Ar^+ + Ge$ | 1.25-320 keV | Anderson, N. H.; Stamm, D.; Sorenson, Y.; Whitlow, N. J. Angular distribution of particles sputtered from Cu, Pt, and Ge targets by keV Ar^+ ion bombardment. <i>Nucl. Instrum. Methods Phys. Res. B</i> 6, 459 (1985) Denmark |
| 03698 F | D02: $Ar^+ + Ge$ | 1.25-320 keV | Nustals, N.; Whitlow, N. J. Momentum and recoil-flux anisotropies in collision cascades: influence on sputtered particle angular distributions. <i>Nucl. Instrum. Methods Phys. Res. B</i> 6, 466 (1985) Finland |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|--------------|---|
| 03699 E-T | D02: Ar ⁺ + Au | 10-20 keV | Sarpev, D. S.; Colligon, J. S.; Heyraud, H.; Hill, A. R. Computer simulation of transmission sputtering of thin films and experimental measurements of recoil implantation of gold into silicon. Nucl. Instrum. Methods Phys. Res. B 6, 676 (1985) Bulgaria |
| 03700 E | D07: Ar ⁺ + Au | 5 keV | Latta, D. R. Monte Carlo study of 5 keV argon scattering off an amorphous gold surface. Nucl. Instrum. Methods Phys. Res. B 6, 679 (1985) Canada |
| 03701 E | C02: W ⁺ + W | Under | Sigurd, P.; Johannsson, K. Higher moments of the energy loss spectrum of swift charged particles penetrating a thin layer of material. Nucl. Instrum. Methods Phys. Res. B 6, 686 (1985) Denmark |
| 03702 E | C02: e + Al | 10-30 keV | Akhman, A. F.; Gibrakhtman, A. I. Comparison of various Monte Carlo schemes for simulation of low-energy electron transport in matter. Nucl. Instrum. Methods Phys. Res. B 6, 696 (1985) Soviet Union |
| 03703 E | D18: He ⁺ + H | Under | Van der Kol, G. J.; Van Veen, A.; De Groot, J.T.G.; Fasteau, R.H.J. Effects of vacancies near substitutional implants on trapping and desorption of helium - a simulation. Nucl. Instrum. Methods Phys. Res. B 6, 525 (1985) The Netherlands |
| 03709 E | D06: e + Al; e + Au | 3-100 keV | Prager, A. L. Monte Carlo calculations of low energy electron backscatter coefficients. Nucl. Instrum. Methods Phys. Res. B 6, 562 (1985) United States |
| 03705 E | A11: Ca ⁺ + He; Cd ⁺ + Ar | 605-775 eV | Peakin, R. P.; Balke, T. F. Quenching of metastable calcium atoms by helium and argon. Opt. Spectrosc. 57, 598 (1986) Soviet Union |
| 03706 E | E03: e + He | 2-250 eV | Boylev, A. Y.; Krasavin, A. V.; Smirnov, L. B. Measurement of the cross sections for electron-impact excitation of the helium atom. Opt. Spectrosc. 57, 601 (1986) Soviet Union |
| 03707 E | A06: H + Hg A18: H + Hg | 1-5 keV | Alvarez, I.; Cisneros, C.; Morales, A.; Boryas, T. J. H ⁺ formation in H ⁺ + Hg collisions. Phys. Lett. A 139, 268 (1985) Mexico |
| 03708 E | E02: e + H E03: e + H E17: e + H | 12-54 eV | Callaway, J. Scattering of electrons by atomic hydrogen at intermediate energies: elastic scattering and n = 2 excitation from 12 to 54 eV. Phys. Rev. A 32, 775 (1985) United States |
| 03709 E | A06: Li ⁺ + Hg; Li ⁺ + Ca; Li ⁺ + Sr; Li ⁺ + Ba | 1-10 keV | Coppola, E. J.; Bao, Y. K.; Peterson, J. B. Single-electron-capture cross sections for 1-10-keV Li ⁺ ions in alkaline-earth vapors. Phys. Rev. A 32, 784 (1985) United States |
| 03710 E | H03: hv + Al; hv + Cu; hv + Zn; hv + Cd; hv + Pb | 59.5 keV | Eichler, J.; de Barros, S. Coherent scattering of 59.5-keV f rays by Al, Cu, Zn, Cd, and Pb. Phys. Rev. A 32, 789 (1985) Brazil |
| 03711 E | A11: Na ⁺ + He; Pb ⁺ + He; H ⁺ + He | 293 eV | Gomard, F.; Petitjean, L. Possible influence of core effects in H ⁺ -atom-neutral collisions at thermal energies, within the framework of the impulse approximation. Phys. Rev. A 32, 793 (1985) France |
| 03712 E | A06: H ⁺ + N ₂ A17: H ₂ ⁺ + H; H ⁺ + N ₂ A18: H ⁺ + N ₂ | 0.2-20 keV | Kimura, H. Charge transfer in ion-molecule collisions at keV energy regime: study of H ⁺ + N ₂ collisions by the electron-transition-factor-modified molecular-orbital-expansion method. Phys. Rev. A 32, 802 (1985) United States |
| 03713 E | A06: Ar ²⁺ + Ar A18: Ar ²⁺ + Ar | 260 eV | Kelso, K. B., Jr.; Rosach, R. S. Charge and energy transfer in symmetric doubly charged Ar ²⁺ + Ar collisions. Phys. Rev. A 32, 815 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|--------------|---|
| 03710 E | A36: H ⁺ + H; H ⁺ + He; H ⁺ + Li; H ⁺ + Ne; H ⁺ + Ar; H ⁺ + Kr; H ⁺ + Rn | 3.2-50 keV | McQuire, J. S.; Klotz, R. E.; Fitt, R. C. Strong-potential Born calculations for 1s-hs electron capture from atoms by protons. Phys. Rev. A 32, 815 (1985) United States |
| 03715 E | E33: e + He ⁺ ; e + Li ²⁺ E35: e + He ⁺ ; e + Li ²⁺ | 70-530 eV | Hindels, R. E.; Griffin, D. C.; Kottner, C. Resonance contributions to the electron-impact excitation of ions in the distorted-wave approximation. Phys. Rev. A 32, 822 (1985) United States |
| 03716 E | A36: He ⁺ + He; He ⁺ + Ne; He ⁺ + Ar; He ⁺ + Kr; He ⁺ + Rn; He ⁺ + H ₂ ; He ⁺ + CH; He ⁺ + C ₂ ; He ⁺ + CH ₂ ; He ⁺ + CO; A37: He ⁺ + He; He ⁺ + Ne; He ⁺ + Ar; He ⁺ + Kr; He ⁺ + Rn; He ⁺ + H ₂ ; He ⁺ + CH; He ⁺ + C ₂ ; He ⁺ + CH ₂ ; He ⁺ + CO; A38: He ⁺ + He; He ⁺ + Ne; He ⁺ + Ar; He ⁺ + Kr; He ⁺ + Rn; He ⁺ + H ₂ ; He ⁺ + CH; He ⁺ + C ₂ ; He ⁺ + CH ₂ ; He ⁺ + CO | 1-2000 keV | Bull, R. E.; Coffe, L. V.; Itsh, A.; Dubois, R. R. Cross sections for ionization of gases by 10-2000-keV He ⁺ ions and for electron capture and loss by 5-350-keV He ⁺ ions. Phys. Rev. A 32, 829 (1985) United States |
| 03717 E | A33: H ₂ ⁺ + He A34: H ₂ ⁺ + He | 0.03 keV | Yano, G.; Nozka, D. R. Collision-induced dissociation mechanism in 0.03-keV H ₂ ⁺ -He collisions. Phys. Rev. A 32, 936 (1985) United States |
| 03718 E | A11: Yb ⁺ + He; Yb ⁺ + Ar | 300 E | Woh, S. G.; Golub, J.; Neuber, T. V. Collisional excitation of excited-state krypton cobercus in atomic ytterbium vapor. Phys. Rev. A 32, 944 (1985) United States |
| 03719 E | E02: e + H ₂ E17: e + H ₂ E19: e + H ₂ | 20-400 eV | Mattacherry, P. E.; Syamal, B. K.; Saha, S. C. Glauber-approx study of electron-molecule scattering at intermediate energies with the use of the free-electron-gas model. Phys. Rev. A 32, 956 (1985) India |
| 03720 E | A36: H ⁻ + He A16: H ⁻ + He A17: H ⁻ + He | 100-500 eV | Spec Issu, V.; Zaslav, V. A. Relative role of charge-exchange and electron-detachment processes in H ⁻ + He collisions. Phys. Rev. A 32, 963 (1985) France |
| 03721 E | E22: Ib ⁺ + He | Undef | Elliott, D. S.; Hamilton, R. W.; Arnett, K.; Smith, S. J. Correlation effects of a phase-diffusing field on two-photon absorption. Phys. Rev. A 32, 967 (1985) United States |
| 03722 E | E36: Undef E06: Undef | Undef | Las, A.; Salmo, S. K. Stimulated recombination: a stochastic approach. Phys. Rev. A 32, 971 (1985) Italy |
| 03723 E | E12: e + Be; e + C; e + Al | 17-50 keV | Fiestrup, S. A.; Kophart, J. O.; Park, S.; Klein, S. H.; Pantell, R. E.; Ebert, P. J.; Moran, N. J.; Dahling, S. A.; Bernas, S. L. Measurement of transition radiation from sodium-energy electrons. Phys. Rev. A 32, 977 (1985) United States |
| 03724 E | E36: hv + La; hv + Ce; hv + Pr; hv + Nd; hv + Sm; hv + Gd; hv + Dy; hv + Ho; hv + Er | 105 keV | Wesch, T. E.; Mangunathiah, C.; Sanjiviah, S. Photoeffect cross sections of some rare-earth elements at 105.0 keV. Phys. Rev. A 32, 989 (1985) India |
| 03725 E | A16: H ⁻ + H; H ⁻ + He; H ⁻ + Ne A18: H ⁻ + H; H ⁻ + He; H ⁻ + Ne | 2 keV | Wright, L. A.; Frank, R. B.; Cecal, T. C. Differential cross sections for collisional electron detachment from H ⁻ . Phys. Rev. A 32, 1215 (1985) United States |
| 03726 E | A22: Undef E23: Undef E25: Undef | 21-50 keV | Dell, F.; Beckl, E. Inner-shell alignment by Compton scattering. Phys. Rev. A 32, 1217 (1985) West Germany |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|-----------------|---|
| 03727 E | 805: He ⁺ + He | 100-96 meV | Sochenkay, C.; Schafers, F.; Schwanen, G.; Weizmann, W. Resonances of the photoelectron spin-polarization parameter in the <i>S</i> _p autoionization range of neon. <i>Phys. Rev. A</i> 32, 1252 (1985) West Germany |
| 03728 E | 803: He ⁺ + H ₂ 836: He ⁺ + H ₂ | 0-227/amu | Vombot, D.; Chetani, A.; Vohler, K.; Soret, J. P.; Pignatelli, P.; Riti, B.; Deussen, S.; Salin, A.; Stephan, C. Alignment of He ⁺ n ² P states produced by collisions of He ⁺ with H ₂ at 0 keV/amu. <i>Phys. Rev. A</i> 32, 1256 (1985) France |
| 03729 E | 806: He ⁺ + C; He ⁺ + C 837: He ⁺ + C; He ⁺ + C | 0.1-0.6 keV/amu | Yamazaki, Y.; Oda, H. Structures observed in electron spectra produced by field ionization of swift He and He Lyberty projectiles traversing carbon foils. <i>Phys. Rev. A</i> 32, 1263 (1985) Japan |
| 03730 E-T | 836: Li ⁺ + He ⁺ | 0003-2500 Å | Truman, J. A.; Burthardt, C. E.; Cocoy, B. A.; Krauss, R. L.; Saulton, T. R.; Carver, S. F.; Lewenthal, J. J.; Gorman, A. E.; Hanson, S. V. Photoionization of the excited <i>S</i> _p state of sodium: experiment and theory. <i>Phys. Rev. A</i> 32, 1266 (1985) United States |
| 03731 E | 836: He ⁺ + He | Undef | Dixit, S. V.; Lynch, D. L.; McElroy, W.; Sun, B. B. Rotational branching ratios in (1 + 1) resonant-enhanced multiphoton ionization of He via the 1 ² E ⁺ state. <i>Phys. Rev. A</i> 32, 1267 (1985) United States |
| 03732 E | 837: He ⁺ + He | 25-625 keV/amu | Edwards, A. E.; Wood, B. S.; Ezell, B. L. Double ionization of helium by He ⁺ projectiles. <i>Phys. Rev. A</i> 32, 1266 (1985) United States |
| 03733 E | 837: He ⁺ + K; He ⁺ + Nb; He ⁺ + Cs; He ⁺ + O ₂ | 300 E | Gray, L. G.; Keiffer, B. S.; Battiff, J. H.; Dunning, F. B.; Walters, G. E. Use of polarization techniques to investigate the dynamics of Penning ionization reactions. <i>Phys. Rev. A</i> 32, 1308 (1985) United States |
| 03734 E | 807: He ⁺ + H ⁻ | 3-40 meV | Greene, C. E.; Rau, A.D.P. Dipole threshold laws for single and double detachment from negative ions. <i>Phys. Rev. A</i> 32, 1352 (1985) United States |
| 03735 E | 833: C ⁺ + H; H ⁺ + H 836: C ⁺ + H; H ⁺ + H | 1-120 keV | Kimura, K.; Liu, C. D. Unified treatment of atom-atom and ion-atom collisions. II. Applications to H ⁺ + H and C ⁺ + H collisions. <i>Phys. Rev. A</i> 32, 1357 (1985) United States |
| 03736 E | 836: He ⁺ + He 818: He ⁺ + He | 100-10000 keV | Kobayashi, K.; Teshima, H.; Isibata, Y. Rikonal approximation for proton-helium electron-capture processes. <i>Phys. Rev. A</i> 32, 1363 (1985) Japan |
| 03737 E-T | 833: He ⁺ + He 818: He ⁺ + He | 25-100 keV | Kvale, T. J.; Seely, D. G.; Mieschowski, D. H.; Dodd, E.; Coy, Y. J.; Kiser, R.; Sills, E.; Pascher, J. L.; Park, J. T. Angular differential cross sections for the excitation of 1 ² S and 2 ² P states by 25- to 100-keV-proton impact. <i>Phys. Rev. A</i> 32, 1369 (1985) United States |
| 03738 E | 832: O ⁺ + H ₂ ; O ⁺ + H ₂ 877: O ⁺ + H ₂ ; O ⁺ + H ₂ | 2.5-37 keV | Liu, J. H. Elastic scattering of fast electrons by H ₂ [1E(ano g ⁺) and H ₂ [1E(sub g ⁺)]. <i>Phys. Rev. A</i> 32, 1386 (1985) Canada |
| 03739 E | 817: He + H ₂ ; He + H ₂ ; Ar + H ₂ | Undef | Rosenkrantz, M. E.; Krauss, R. Damped dispersion interaction energies for He-H ₂ , He-H ₂ , and Ar-H ₂ . <i>Phys. Rev. A</i> 32, 1022 (1985) United States |
| 03740 E | 837: He ⁺ + He 817: He ⁺ + He | 23-100 meV | Pango, S.; Penzance, A.; Perdris, R.; Vatel, G.; Cohen, J. S. Associative ionization mechanisms in collisions between He(5 ² P) and He(1 ² S) atoms at thermal energies. <i>Phys. Rev. A</i> 32, 1012 (1985) France |
| 03741 E | 836: Undef | Undef | Weaver, O. L.; McKeire, J. H. Analysis of the Thomas peak as a resonance in momentum transfer. <i>Phys. Rev. A</i> 32, 1035 (1985) United States |
| 03742 E | 812: Undef | Undef | Datta Gupta, S.; Farkhi, L. A. Boltzmann-Lorentz model of collisional broadening of spectra. <i>Phys. Rev. A</i> 32, 1039 (1985) West Germany |

| Ref. No. | Constants | Energy Range | Reference |
|-----------|---|---|--|
| 03703 F | H05: Undef | Undef | Mabell, J. J. Interference in atomic fluorescence excited by polarized photoassociation. <i>Phys. Rev. A</i> 32, 1458 (1985) |
| 03704 T | H06: hv + Dn | 5.10-250 eV | Jensberg, K. R.; Carter, S. L.; Kelly, H. P.; Salomonson, S. Photoionization cross section and resonance structure of atomic sodium. <i>Phys. Rev. A</i> 32, 1672 (1985) |
| 03705 E | H01: hv* | | Van Linden van den Heuvell, H.; Gallagher, T. F. Ionization of H atoms by 0-CM electric fields. <i>Phys. Rev. A</i> 32, 1695 (1985) |
| 03706 F | H01: Undef | | Li, X.; Peng, Y. Quantum properties of a three-level atom interacting with the radiation field. <i>Phys. Rev. A</i> 32, 1501 (1985) |
| 03707 F | H01: Undef | | Thomas, G. V. Dipole interaction of a multilevel system with a continuous-wave or Gaussian-pulsed laser. <i>Phys. Rev. A</i> 32, 1515 (1985) |
| 03708 F | H02: Undef | Undef | Corcia-Zelding, F.; Saccaro G., A. High-order effects in Rydberg-type optical mixing. <i>Phys. Rev. A</i> 32, 1526 (1985) |
| 03709 E-T | A02: T0* + He; T0* + He; T0* + He A11: T0* + He; T0* + He; T0* + He | 100 F | Waller, J. C.; Le Coent, J. L. Stimulated photon echo for angular analysis of elastic and depolarizing T0*-molecule collisions. <i>Phys. Rev. A</i> 32, 1620 (1985) |
| 03710 F | A07: Undef H07: Undef | Undef | Lee, S. S.; George, Y. F. Multiple resonances in non-Franck-Condon transitions due to nonlocal effects in laser-induced associative ionization. <i>Phys. Rev. A</i> 32, 1650 (1985) |
| 03711 F | E03: e + He ²⁺ ; e + He ²⁺ E05: e + He ²⁺ ; e + He ²⁺ E07: e + He ²⁺ ; e + He ²⁺ | 5x10 ³ -2x10 ⁷ eV | Fujimoto, Y.; Kato, Y. Enhancement of the excitation and dissociation rate coefficients of ions in dense plasmas: the role of autoionizing states. <i>Phys. Rev. A</i> 32, 1663 (1985) |
| 03712 F | A17: H + H | Undef | Vabri, R.; Ferreira de Silva, A. Variational calculation of the two-dimensional H ₂ molecule. <i>Phys. Rev. A</i> 32, 1670 (1985) |
| 03713 E-T | A07: H* + H ₂ ; H* + He; H* + H ₂ ; H* + He | 3.1-3.5 MeV | Eduards, A. K.; Seal, B. S.; Szil, E. L. Double ionization of H ₂ caused by two sequential projectile-electron collisions. <i>Phys. Rev. A</i> 32, 1673 (1985) |
| 03714 E | H02: hv + Dn | 237-123 au | Salomon, E. A.; Cooper, J. W.; Robison, G. Photoabsorption cross section of boron from 237.9 to 123 au. <i>Phys. Rev. A</i> 32, 1678 (1985) |
| 03715 F | H06: hv + Ca | 2-7 eV | Pinzola, W. S. Photoelectron angular distributions for excited ns subshells of calcium. <i>Phys. Rev. A</i> 32, 1683 (1985) |
| 03716 E | A03: H0* + Hb A11: H0* + Hb | 023 F | Kase, S. S.; Yajima, Y.; Yokono, H.; Nishizawa, K.; Sakurai, K. Collisional energy transfer between Rydberg and ground-state atoms. <i>Phys. Rev. A</i> 32, 1910 (1985) |
| 03717 E | H07: hv + Li ⁻ | 2.0-2.5 eV | Lee, Y. K.; Peterson, J. B. Effect of a virtual state near an s-wave threshold: absolute Li ⁻ photo-detachment cross sections near the Li(2P) threshold. <i>Phys. Rev. A</i> 32, 1917 (1985) |
| 03718 E | H07: hv + H ⁻ | 10.9-11.1 eV | Hochstetler, D. E.; Butterfield, K. B.; Clark, D. A.; Donahue, J. B.; Gray, P. A. H.; Bryant, B. C.; Harvey, C. J.; Smith, D. U.; Costet, G. Energy measurement of the lowest 1P ^o Feshbach resonance in H ⁻ . <i>Phys. Rev. A</i> 32, 1921 (1985) |
| 03719 F | H06: Undef | Undef | Johnson, B. B.; Delahardt, D. P.; McCarty, C. V.; Boucigno, T. D. Extension of time-independent wave-operator methods to the calculation of the two-body Coulomb photoionization amplitudes. <i>Phys. Rev. A</i> 32, 1990 (1985) |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|-----------------|---|
| 03760 E | A03: Na ⁺ + Na ⁺ All: Na ⁺ + Na ⁺ | 263-323 eV | Allegriani, M.; Cabbanini, C.; Neri, L.; Telle, R. Cross-section measurement and theoretical evaluation for the energy-transfer collision. <i>Phys. Rev. A</i> 32, 2068 (1985) Italy |
| 03761 E | A37: H ⁺ + Ba A18: H ⁺ + Ba | 9.9-10.1 MeV | Bost, H.; Lorenz, H.; Bohl, S.; Seidel, J.; Koenig, W. K-shell ionization probability in elastic proton scattering on ¹³⁸ Ba through an f _{7/2} isobaric-analog resonance. <i>Phys. Rev. A</i> 32, 2077 (1985) West Germany |
| 03762 E | A33: H ⁺ + Bi; H ⁺ + Co; H ⁺ + Ge; H ⁺ + As; H ⁺ + Sb; H ⁺ + Sr; H ⁺ + V; H ⁺ + Zr; H ⁺ + Pd A35: H ⁺ + Bi; H ⁺ + Co; H ⁺ + Ge; H ⁺ + As; H ⁺ + Sb; H ⁺ + Sr; H ⁺ + V; H ⁺ + Zr; H ⁺ + Pd A37: H ⁺ + Bi; H ⁺ + Co; H ⁺ + Ge; H ⁺ + As; H ⁺ + Sb; H ⁺ + Sr; H ⁺ + V; H ⁺ + Zr; H ⁺ + Pd | 3.25-2.5 MeV | Pappas, J. L.; Kocur, P. H.; Price, J. L.; McDaniel, F. A.; Seltz, R.; Lapicki, C. L-shell x-ray production cross sections of Bi, Co, Ge, As, Sb, Sr, V, Zr, and Pd by (3.25-2.5)-MeV protons. <i>Phys. Rev. A</i> 32, 2308 (1985) United States |
| 03763 E | E03: e + O ₂ E06: e + O ₂ | 0-500 eV | Schleean, R. B.; Sharpton, F. A.; Chung, S.; Lin, C. C.; Anderson, L. V. Emission from oxygen atoms produced by electron-impact dissociative excitation of oxygen molecules. <i>Phys. Rev. A</i> 32, 2300 (1985) United States |
| 03764 E | E03: e + Ne | 0-300 eV | Phillips, R. B.; Anderson, L. V.; Lin, C. C. Electron excitation cross sections for the metastable and resonant levels of Ne(2p ³ 3s). <i>Phys. Rev. A</i> 32, 2317 (1985) United States |
| 03765 E | A06: He ⁺ + He; He ²⁺ + He; He ³⁺ + Ar; He ⁴⁺ + Kr; He ⁵⁺ + Rn; He ⁶⁺ + U ₂ ; He ⁷⁺ + CO; He ⁸⁺ + O ₂ ; He ⁹⁺ + CH ₄ ; He ¹⁰⁺ + CO ₂ ; He ¹¹⁺ + H ₂ O A37: He ⁺ + He; He ²⁺ + He; He ³⁺ + Ar; He ⁴⁺ + Kr; He ⁵⁺ + Rn; He ⁶⁺ + U ₂ ; He ⁷⁺ + CO; He ⁸⁺ + O ₂ ; He ⁹⁺ + CH ₄ ; He ¹⁰⁺ + CO ₂ ; He ¹¹⁺ + H ₂ O | 10-300 keV/atom | Rudd, R. L.; Coffe, T. V.; Itoh, A. Ionization cross sections for 17-333-keV/a and electron-capture cross sections for 5-150-keV/a He ⁿ⁺ ions in gases. <i>Phys. Rev. A</i> 32, 2325 (1985) United States |
| 03766 E | E06: hv + H ₂ | 0-1.0 a.u. | Yu, C.; Fitzer, R. H.; McCurdy, C. W. Molecular photoionization cross sections by the complex-basis-function method. <i>Phys. Rev. A</i> 32, 2336 (1985) United States |
| 03767 E | A07: O ⁸⁺ + Sc; O ⁹⁺ + Ti; O ¹⁰⁺ + Cr; O ¹¹⁺ + Fe; O ¹²⁺ + Ni; O ¹³⁺ + Cu; O ¹⁴⁺ + Zn; O ¹⁵⁺ + Se; O ¹⁶⁺ + Sr; O ¹⁷⁺ + Zr; O ¹⁸⁺ + Mo; O ¹⁹⁺ + Ru; O ²⁰⁺ + Ag; O ²¹⁺ + Cd; O ²²⁺ + Sn; O ²³⁺ + Te; O ²⁴⁺ + Ba; O ²⁵⁺ + Ce; O ²⁶⁺ + Sm; O ²⁷⁺ + Ho; O ²⁸⁺ + Yb; O ²⁹⁺ + Tm; O ³⁰⁺ + Pt; O ³¹⁺ + Au; O ³²⁺ + Pb; O ³³⁺ + Bi; O ³⁴⁺ + Sc; O ³⁵⁺ + Tl; O ³⁶⁺ + Cf; O ³⁷⁺ + Fr; O ³⁸⁺ + Fl; O ³⁹⁺ + Co; O ⁴⁰⁺ + Zn; O ⁴¹⁺ + Se; O ⁴²⁺ + Sr; O ⁴³⁺ + Cu; O ⁴⁴⁺ + Ni; O ⁴⁵⁺ + Fe; O ⁴⁶⁺ + Ti; O ⁴⁷⁺ + Cr; O ⁴⁸⁺ + Mo; O ⁴⁹⁺ + Ru; O ⁵⁰⁺ + Rh; O ⁵¹⁺ + Pd; O ⁵²⁺ + Ag; O ⁵³⁺ + Cd; O ⁵⁴⁺ + Sn; O ⁵⁵⁺ + Te; O ⁵⁶⁺ + Ba; O ⁵⁷⁺ + Ce; O ⁵⁸⁺ + Sm; O ⁵⁹⁺ + Ho; O ⁶⁰⁺ + Yb; O ⁶¹⁺ + Tm; O ⁶²⁺ + Pt; O ⁶³⁺ + Au; O ⁶⁴⁺ + Pb; O ⁶⁵⁺ + Bi | 35-70 keV | Seidel, J.; Bohl, S.; Lorenz, H.; Hechler, S.; Bost, P. K-shell ionization by ¹⁶ O and ²² S ions: reduced-velocity dependence of the binding effect. <i>Phys. Rev. A</i> 32, 2342 (1985) West Germany |
| 03768 E | A36: H ⁺ + Hg A16: H ⁺ + Hg A10: H ⁺ + Hg; H + Hg; H ⁺ + Hg | 7-135 keV | Van Wijngaarden, A.; Patel, J.; Becker, K.; Drake, G.W.F. Charge-exchange processes of hydrogen ions with Hg atoms at keV energies. <i>Phys. Rev. A</i> 32, 2353 (1985) Canada |
| 03769 E | A33: He ⁺ + H A36: He ⁺ + H | 1-130 keV | Errea, L. F.; Gomez-Lorenzo, J. M.; Sessler, L.; Biern, A. Practical criterion for the determination of translation factors. II. Application to He ⁺ + H(1s) collisions. <i>Phys. Rev. A</i> 32, 2356 (1985) Spain |

| Ref. No. | Reactions | Energy Range | Reference |
|----------|--|-------------------------------------|---|
| 03770 F | A03: O + C; S + Ne A06: O + C; S + Ne | Undef | Jahnke-Arndtson, B. H. Semi-empirical sliding model for rearrangement collisions. <i>Phys. Rev. A</i> 32, 2166 (1985) Pack Company |
| 03771 F | A31: He ⁺ + Ar; He ⁺ + PERT A30: He ⁺ + Ne; He ⁺ + Ar; He ⁺ + N ₂ ; He ⁺ + Kr; He ⁺ + PERT | 10 ³ -10 ⁴ eV | Kaneko, T. Electron-loss and excitation cross sections for a He ⁺ ion colliding with various atoms. <i>Phys. Rev. A</i> 32, 2175 (1985) Japan |
| 03772 F | A07: Undef | Undef | Alber, G.; Cooper, J. Intensity effects in two-photon collisional redistribution of radiation. <i>Phys. Rev. A</i> 32, 2196 (1985) United States |
| 03773 F | A02: hv + Ca; hv + Pr; hv + Ne; hv + Kr | 876-1030 eV | Segar, J.; Brewer, W. B.; Kalkowski, G.; Kaindl, J.; Paparazzo, E. Photoabsorption by the 3d shell in Ca, Pr, Ne, and Kr: observations and calculations. <i>Phys. Rev. A</i> 32, 2202 (1985) United States |
| 03774 F | A37: H ⁺ + H; H ⁺ + He | 25-100 keV | Bakoyan, Y.; Lin, C. B.; Fritsch, W. Calculations of the energy distribution of electrons ejected in ion-atom collisions using pseudostates. <i>Phys. Rev. A</i> 32, 2090 (1985) United States |
| 03775 F | A38: Undef | Undef | Spill, E. A. Projectile K-Auger-electron production by bare, one-electron, and two-electron ions through two-degree Auger spectroscopy. <i>Phys. Rev. A</i> 32, 2090 (1985) United States |
| 03776 F | A31: Undef | Undef | Hahn, Y. Maximization principle for single-channel scattering. <i>Phys. Rev. A</i> 32, 2096 (1985) United States |
| 03777 F | A06: He ⁺ + H ₂ O A37: He ⁺ + H ₂ O A30: He ⁺ + H ₂ O | 5-450 keV | Rudd, J. E.; Itoh, A.; Guffo, I. V. Cross sections for ionization, capture, and loss for 5-450-keV He ⁺ on water vapor. <i>Phys. Rev. A</i> 32, 2099 (1985) United States |
| 03778 F | A36: Undef | Undef | Hitchie, B. Propagation of an ionizing light pulse through a gaseous medium. <i>Phys. Rev. A</i> 32, 2500 (1985) United States |
| 03779 F | E21: e + H | 11-35 eV | Ora, D. H.; Callaway, J. Spin asymmetry in elastic scattering of electrons by hydrogen atoms. <i>Phys. Rev. A</i> 32, 2530 (1985) United States |
| 03780 F | E23: e + Li E17: e + Li | 60-200 eV | Tivary, S. K.; Sacak, J.; Madison, D. H. Electron excitation of Auger transitions in atoms. <i>Phys. Rev. A</i> 32, 2501 (1985) United States |
| 03781 F | A05: hv + Si | 97-109 eV | Niedel, R. L.; Turovski, E.; Margaritondo, G.; Perfetti, P. Experimental test of the existence of photoionization resonances. <i>Phys. Rev. B</i> 30, 6815 (1984) United States |
| 03782 F | A09: H ₂ + Ti + Cu | Undef | Fischer, C. B.; Whitten, J. L. Dissociation of hydrogen on a Ti-Cu alloy surface. <i>Phys. Rev. B</i> 30, 5021 (1984) United States |
| 03783 F | A37: Undef | Undef | Celli, V.; Maradudin, A. A. Temperature effects in diffractive atom-surface scattering. <i>Phys. Rev. B</i> 31, 825 (1985) United States |
| 03784 F | A01: Undef | Undef | Eriksson, H. G.; Karlsson, B. E.; Niljardena, E.S.I.L. Oscillatory polarization potential induced at a surface by a penetrating charge. <i>Phys. Rev. B</i> 31, 803 (1985) Sweden |
| 03785 F | A13: e + Cu | 20-7000 eV | Ketrich, N. F.; Kaniuchov, V. N. Ion- and electron-stimulated low-temperature desorption of gases dissolved in metals. <i>Sov. At. Energy</i> 57, 527 (1985) Soviet Union |
| 03786 F | A18: D ₂ ⁺ + Ne; D ₂ ⁺ + Ne | 6-33 keV | Pisarev, A. A.; Tsyplakov, V. N. Absorption parameters of deuteron ions in molybdenum. <i>Sov. At. Energy</i> 57, 530 (1985) Soviet Union |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|---|-----------------------|---|
| 03787 I | D12: e + Fe | 10-100 keV | Isaev, V. I.; Kovalev, V. P. Energy and angular distributions of electrons bremsstrahlung from thick targets. Sov. ht. Energy 57, 643 (1985) Soviet Union |
| 03788 I | C02: H ⁺ + Be; H ⁺ + Al; H ⁺ + Fe; H ⁺ + Ag; H ⁺ + U; H ⁺ + Ag; Ag ⁺ + Ag; Ag ⁺ + Ag; Al ⁺ + Ag; C ⁺ + Ag; Be ⁺ + Ag; C38: Bi ⁺ + Pb | 0.01-1 MeV/amu | Basko, H. H. Stopping of fast ions in a dense plasma. Sov. J. Plasma Phys. 10, 689 (1984) Soviet Union |
| 03789 E-T | E11: e + Kr; e + Xe; e + Hg | 6-6.5 keV | Kogan, V. I.; Kisekhina, A. B. Radiation emission by quasiclassical electrons in an atomic potential. Sov. Phys.-JETP 63, 665 (1986) Soviet Union |
| 03790 E-T | D11: e + Li | 200-300 eV | Kulyapin, V. A.; Feodosenko, A. F.; Shatalov, V. B.; Sachuranko, A. I. Detection of gaps in the energy spectra of lithium. Sov. Phys.-JETP Lett. 43, 1386 (1984) Soviet Union |
| 03791 E | E03: e + Li E15: e + Li | 0-300 eV | Akelsakhin, L. S.; Bojachev, G. G.; Zepeschnyi, I. P.; Uglia, S. Y. Observation of radiative transitions between lithium-atom autoionization states excited by an electron beam. Sov. Phys.-JETP Lett. 43, 1287 (1984) Soviet Union |
| 03792 E | A33: H ⁺ + Zn; H ⁺ + Cd; H ⁺ + Hg A35: H ⁺ + Zn; H ⁺ + Cd; H ⁺ + Hg | 3.1-2 keV | Isiple, M. Y.; Ovchinnikov, V. L.; Shpenik, O. B. Formation of excited states of zinc, cadmium, and mercury atoms and ions in collisions with low-energy protons. Sov. Phys.-JETP Lett. 43, 1296 (1984) Soviet Union |
| 03793 I | A36: H ⁺ + H | 10-10 ⁵ eV | Bogdanov, A. V.; Gevockyan, A. S. Resonant charge exchange mechanisms at high and moderate energies. Sov. Phys.-Tech. Phys. 29, 176 (1984) Soviet Union |
| 03794 I | E03: e + He E17: e + Fe | 30-250 eV | Asen'ya, M. Y.; Chernysheva, L. V.; Shvimerman, S. A. Excitation of the helium 2 ² S triplet level by low- and moderate-energy electrons. Sov. Phys.-Tech. Phys. 29, 849 (1984) Soviet Union |
| 03795 I | A37: H ⁺ + Au | 2.5-8 keV | Konarov, F. F. Ionization cross sections for inner-shell electrons in the relativistic binary collision model. Sov. Phys.-Tech. Phys. 29, 855 (1984) Soviet Union |
| 03796 I | A02: H ⁺ + He A17: H ⁺ + He | 5.05 keV | Dedkov, G. V. Decrease in the elastic scattering cross sections for atoms and ions in high-energy binary collisions. Sov. Phys.-Tech. Phys. 29, 1197 (1984) Soviet Union |
| 03797 I | C34: H ⁺ + PZET | 7ndel | Gerasimov, S. A. Transformation of Thomas-Fermi coordinates and the range of fast charged particles in matter. Sov. Phys.-Tech. Phys. 29, 1431 (1984) Soviet Union |
| 03798 I | A37: H ⁺ + Fe | 3.3-2 keV | Volkov, V. P.; Gerasimov, S. A. Deducing the atomic potential from the experimental electron energy distribution function. Sov. Phys.-Tech. Phys. 30, 1 (1985) Soviet Union |
| 03799 I | A37: He + Ar; He + Kr; He + Xe | 337-633 K | Devdariani, A. Z.; Zagrebina, A. L.; Kasyanenko, S. V.; Sebykhin, V. N.; Tolmachev, V. A. Influence of the structure of the quasimolecular terms of ionization during collisions with resonantly excited atoms. Sov. Phys.-Tech. Phys. 30, 214 (1985) Soviet Union |
| 03800 E | D12: Ho ⁺ + Al; Ho ⁺ + Yb; Ho ⁺ + Au; Ho ⁺ + Pb; Ho ⁺ + Mo; Ho ⁺ + Ho; Ho ⁺ + W; Ce ⁺ + Al; Ce ⁺ + Yb; Ce ⁺ + Au; La ⁺ + Pb; Ce ⁺ + Ho; Ce ⁺ + Mo; Ce ⁺ + Fe | 0.06-8 keV | Belykh, S. P.; Evtukhov, A. N.; Horozov, S. P. Identification of the particles responsible for the continuous emission during ion bombardment of metals. Sov. Tech. Phys. Lett. 10, 337 (1984) Soviet Union |
| 03801 E | D38: H ₂ ⁺ + Cu | 30 keV | Bitenstik, I. S.; Parilis, E. S. Excitation of high-lying rotational and vibrational states of fast diatomic molecules scattered by a solid surface. Sov. Tech. Phys. Lett. 10, 635 (1984) Soviet Union |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|--------------|---|
| 33017 F | A36: $H^+ + He$ | 53-533 keV | Basu, C. K.; Sural, D. P. Electron capture process in proton-alkali atom collisions. Indian J. Phys. B 57, 23 (1983) India |
| 33018 E | E33: $e + H_2$ | 432 eV | Bajjara, P. A.; Roy, T.; Mather, D. Inner-shell resonance in differential elastic scattering of electrons from H_2 . Indian J. Phys. B 57, 32 (1983) India |
| 33019 F | E20: $He^+ + He$ | 1.5-10 keV | Funda, S.; Chakraborty, T.; Karmohapatra, S. R. Multiple scattering of neon ions in helium in the presence of magnetic focusing. Indian J. Phys. B 57, 51 (1983) India |
| 33020 F | E03: $e + B$ E17: $e + B$ | 54.6 eV | Dewanjan, D. P. A higher order model for inelastic electron-atom scattering. Indian J. Phys. B 57, 57 (1983) India |
| 33021 F | E35: $e + Cu$; $e + Ag$ | 103-333 keV | Das, J. K.; Chakraborty, S. K-shell doubly differential cross sections for ionization of atoms. Indian J. Phys. B 57, 63 (1983) India |
| 33022 Y | F02: $e + Z_2$ | 0.5-3.5 eV | Sar, S.; Ghosh, A. S. Local model exchange potentials. Indian J. Phys. B 57, 67 (1983) India |
| 33023 F | F05: $e + H$ E17: $e + H$ | 100-250 eV | Razumdar, P. S.; Basu, R.; Ghosh, A. S. Ionization of the hydrogen atom by electron impact with the use of the polarized-orbital method. Indian J. Phys. B 57, 95 (1983) India |
| 33024 F | E31: $e + Li^+$ | 103-353 eV | Pathy, B.; Srivastava, R.; Rai, B. K. Electron impact double excitation in helium-like ions. Indian J. Phys. B 57, 139 (1983) India |
| 33025 F | A36: $H^+ + Ar$ | 1-12 keV | Sharma, A. K.; Srivastava, R. A. Proton-argon charge transfer cross sections with a realistic electron-target interaction. Indian J. Phys. B 57, 119 (1983) India |
| 33026 F | F02: $e + H$ E17: $e + H$ | 75-500 eV | Sarkar, S.; Chakraborty, R. K. Determination of spin exchange scattering amplitude for 1S-2S transition. Indian J. Phys. B 57, 149 (1983) India |
| 33027 F | A33: $H^+ + He$ A18: $He^+ + He$ | 133-533 keV | Gupta, S. P.; Saxena, S.; Mather, K. C. Excitation of helium (1'S - 1'S) by proton impact at intermediate and high energies. Indian J. Phys. B 57, 154 (1983) India |
| 33028 F | E32: $e + H_2$ E17: $e + H_2$ E19: $e + H_2$ | 100-1000 eV | Joshiwara, K. M.; Desai, R. S. Elastic scattering of electrons by hydrogen molecules. Indian J. Phys. B 57, 161 (1983) India |
| 33029 F | F04: $e + H_2$; $e + D_2$ F03: $e + H_2$; $e + D_2$ | 6-21 eV | Bhattacharyya, S.; Chatterjee, L.; Roy, T. Negative ion formation in collision of electron with H_2 and isotopes. Indian J. Phys. B 57, 184 (1983) India |
| 33030 F | E32: $e + H$ E17: $e + H$ | 233 eV | Chandra Prabha, C. B.; Desai, R. S. Two-potential formulation in RH08. Indian J. Phys. B 57, 193 (1983) India |
| 33031 F | A33: $H^+ + H$ A36: $H^+ + H$ | 13-433 keV | Kao, B. K.; Satapathy, U. C.; Tripathy, D. H. 1s - 2s capture in proton-hydrogen charge transfer scattering. Indian J. Phys. B 57, 195 (1983) India |
| 33032 F | A19: $H^+ + H^-$ | 50-1000 keV | Ghosh, S. Charge transfer in $H^+ + H^-$ collisions. Indian J. Phys. B 57, 202 (1983) India |
| 33033 F | F05: $e + H$ E17: $e + H$ | 100-250 eV | Razumdar, P. S.; Basu, R.; Ghosh, A. S. Ionization of the hydrogen atom by electron impact using adiabatic method. Indian J. Phys. B 57, 215 (1983) India |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|--------------|---|
| 03030 F | A17: F + F; H + Li; He + He; He + Li; Li + F; Li + Li | Under | Easa, S. I.; Shukla, G. C. Relativistic long-range interactions between H, He, and Li atoms. <i>Indian J. Phys.</i> 57, 225 (1983) India |
| 03035 F | F25: e + Li ⁺ F ⁺ e + Li ⁺ | 333-2373 eV | Ray, A.; Ray, S.; Sil, N. C. Evaluation of the amplitude for electron impact ionization of Li ⁺ . <i>Indian J. Phys.</i> 57, 323 (1983) India |
| 03036 F | A30: H ⁺ + Li | 200-5000 eV | Somani, B. K.; Sil, N. C. Formation of hydrogen atom in an arbitrary excited state in H ⁺ + Li collisions. <i>Indian J. Phys.</i> 57, 369 (1983) India |
| 03037 F | F02: e + F; e + He; e + F ⁺ | 100-200 eV | Chandra Prabha, C. S.; Desai, R. S. Elastic scattering of electrons by F(1s), F(2s) & He in the modified SES approximation. <i>Indian J. Pure Appl. Phys.</i> 23, 12 (1985) India |
| 03038 E | D07: Li + NaCl | Thermal | Baker, S.; Schoonmaker, B. C. Dynamics of the gas-surface interaction and the mechanism of condensation of NaCl molecules incident on NaCl(100) surfaces. <i>J. Appl. Phys.</i> 58, 2351 (1985) United States |
| 03039 F | F04: Cs ⁺ + Cs + F | 0.5-2.0 keV | Van Amerfoort, P. J.; Geerlings, J.-J.C.; Kerkman, L.-P.T.; Grammenas, E.-H.A.; Lou, J. Charge and energy transfer in collisions of Cs ⁺ ions with a crystalline F(110) surface. <i>J. Appl. Phys.</i> 59, 2312 (1985) The Netherlands |
| 03040 F | D02: Cs ⁺ + F + Cs; H ⁺ + F + Cs; F ⁺ + F + Cs; H ₂ ⁺ + F + Cs | 16-600 eV | Van Amerfoort, P. J.; Tong, Y. C.; Grammenas, E.-H.A. A model for the stationary cesium coverage on a converter surface in a cesium neocathode hydrogen discharge. <i>J. Appl. Phys.</i> 58, 2317 (1985) The Netherlands |
| 03041 E | E33: e + He; e + He ⁺ ; e + Ar | 13-577 eV | Kariolopolo, A. M.; Smegurskii, A. V.; Shpenik, O. B. Total excitation cross sections of metastable levels of inert-gas atoms in electron impact. <i>J. Appl. Spectrosc.</i> 62, 125 (1985) Soviet Union |
| 03042 F | D09: F ⁺ + CaO; He ⁺ + As | Under | Battaglia, F.; George, T. F. A diagrammatic approach to ion neutralization at surfaces: on the validity of first-order perturbation calculations. <i>J. Chem. Phys.</i> 82, 1867 (1985) United States |
| 03043 F | A11: OH ⁺ + CH ₂ ; OH ⁺ + CO; OH ⁺ + H ₂ ; OH ⁺ + D ₂ ; OH ⁺ + O ₂ ; OH ⁺ + F ₂ ; OH ⁺ + H ₂ O; OH ⁺ + D ₂ O; OH ⁺ + CO ₂ ; OH ⁺ + D ₂ O | 137 E | Copeland, S. A.; Dyer, R. J.; Crowley, D. P. Rotational-level-dependent quenching of A ² Σ ⁺ OH and OD. <i>J. Chem. Phys.</i> 82, 4322 (1985) United States |
| 03044 F | A10: Cl + H ₂ ; Cl + HD; Cl + D ₂ ; Cl + T ₂ | 200-1500 K | Tucker, S. C.; Truhlar, D. G.; Garrett, B. C.; Isaacson, A. D. Variational transition state theory with least-action tunneling calculations for the kinetic isotope effects in the Cl + H ₂ reaction: tests of extended-LPPE, information-theoretic, and diatomic-in-molecules potential energy surfaces. <i>J. Chem. Phys.</i> 82, 4302 (1985) United States |
| 03045 F | J37: F + H ₂ + hν | 3-1.0 eV | Last, I.; Beer, H. Quantum and semi-classical studies of reactions in strong laser fields: F(² P _{3/2} , ² P _{1/2}) + H ₂ + h bar omega (3.117, 3.469, 1.17 eV). <i>J. Chem. Phys.</i> 82, 4956 (1985) Israel |
| 03046 F | F03: e + D ₂ | 0.45-4.5 eV | Buchman, S. J.; Phelps, A. V. Vibrational excitation of D ₂ by low energy electrons. <i>J. Chem. Phys.</i> 82, 4999 (1985) United States |
| 03047 F | A12: F + H ₂ ; F + D ₂ ; F + HD | 150-765 K | Stechler, F.; Truhlar, D. G.; Garrett, B. C. Variational transition state theory calculations of the reaction rates of F with H ₂ , D ₂ , and HD and the intermolecular and intramolecular kinetic isotope effects. <i>J. Chem. Phys.</i> 82, 5499 (1985) United States |
| 03048 F | A10: F ₂ + OH | 1200-2000 K | Bashwi, O.; Brown, R. J. A molecular dynamics study of the reaction F ₂ + OH = HF + F. <i>J. Chem. Phys.</i> 82, 5526 (1985) United States |
| 03049 F | A10: Ar ⁺ + H ₂ ; Ar ⁺ + D ₂ ; Ar ⁺ + HD | 3.35-33 eV | Ervin, K. K.; Armstrong, P. B. Rotational energy dependence of Ar ⁺ + H ₂ = ArH ⁺ + Y(H ₂ = H ₂ , D ₂ , HD) from thermal to 33 eV c.m. J. <i>Chem. Phys.</i> 83, 166 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|-----------------|--|
| 03850 E | A11: H ₂ O ⁺ + H ₂ O H25: hv + H ₂ O u09: hv + H ₂ O | 9-35 eV | Dutuit, G.; Tabche-Fouhaila, A.; Messer, J.; Frohlich, H.; Guyon, P. H. Photodissociation processes of water vapor below and above the ionization potential. <i>J. Chem. Phys.</i> 83, 586 (1985) France |
| 03851 E | 330: hv + H ₂ | 850-845 Å | Glass-Raujean, H.; Breton, J.; Guyon, P. H. Photoabsorption probabilities of H ₂ levels lying near the H(1S) + H(n = 2) dissociation limit. <i>J. Chem. Phys.</i> 83, 1660 (1985) France |
| 03852 F | A03: H + D ₂ A14: H + D ₂ | 0.55-1.1 eV | Blais, S. C.; Truhlar, D. G. Product state distributions for inelastic and reactive H + D ₂ collisions as functions of collision energy. <i>J. Chem. Phys.</i> 83, 2201 (1985) United States |
| 03853 F | D11: SO + Pt; NC + Ag | 100-2000 K | Mullhansen, C. W.; Williams, L. H.; Tully, J. C. Dynamics of gas-surface interactions: scattering and desorption of SO from Ag(111) and Pt(111). <i>J. Chem. Phys.</i> 83, 2590 (1985) United States |
| 03854 F | E03: e + V; e + Mn | 50 eV | Peterkop, B. K. Calculation of excitation cross sections and oscillator strengths for vanadium and manganese atoms. <i>Opt. Spectrosc.</i> 58, 7 (1985) Soviet Union |
| 03855 E | F04: hv + Ga | 1.46-1.48 eV | Tarunov, A. T.; Eshtabilov, S. B. Study of the Rydberg states of atomic gallium by the stepwise laser photoionization method. <i>Opt. Spectrosc.</i> 58, 16 (1985) Soviet Union |
| 03856 F | F03: e + Si; e + Ge | 50-200 eV | Peterkop, B. K. Calculation of excitation cross sections and oscillator strengths of Si and Ge atoms. <i>Opt. Spectrosc.</i> 58, 121 (1985) Soviet Union |
| 03857 F | A17: NaAr; NaKr; NaXe; KAr; KKr; KXe | Undef | Singh, D.; Varmhi, V. P. Bound state properties of the Leonard-Jones 8-6 potential. <i>Physica B+C</i> 132, 235 (1985) Canada |
| 03858 E | A03: Si ¹⁰⁺ + C A26: Si ¹⁰⁺ + C | 32-105 keV | Falinks, J.; Watson, S. L. Projectile velocity dependence of the alignment of He-like 2P states of foil excited S projectiles. <i>Phys. Lett. A</i> 113, 298 (1985) United States |
| 03859 F | A17: He ⁺ + He | Undef | Cesicini, S. The He ⁺ (1s,2s) + He interaction potential. <i>Phys. Lett. A</i> 110, 451 (1985) Italy |
| 03860 E | A06: C ⁶⁺ + H; C ⁶⁺ + H ₂ ; O ⁶⁺ + H; O ⁶⁺ + H ₂ ; N ⁷⁺ + H; N ⁷⁺ + H ₂ ; F ⁹⁺ + H; F ⁹⁺ + H ₂ ; Se ¹⁶⁺ + H; Se ¹⁶⁺ + H ₂ | 0.3-8.3 keV/amu | Reyer, P. W.; Howell, A. H.; Savener, C. C.; Phaneuf, R. A. Observation of low-energy Z oscillations in total electron-capture cross sections for bare projectiles colliding with H and H ₂ . <i>Phys. Rev. Lett.</i> 58, 2663 (1985) United States |
| 03861 E | D13: H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; H ₂ ⁺ + Csi; F ₂ ⁺ + Csi | 600 keV | Thomas, J. P.; Filipowicz, P. E.; Fallavier, A.; Schweikert, E. A. Ion-induced desorption by high-energy (600 keV) hydrogen clusters. <i>Phys. Rev. Lett.</i> 55, 133 (1985) France |
| 03862 E | E02: e + F E17: e + F | 1-103 eV | Stein, T. S.; Gomez, R. D.; Hsieh, Y. P.; Kauppil, B. E.; Ewan, C. K.; Hsu, Y. J. Total-cross-section measurements for positrons and electrons colliding with potassium. <i>Phys. Rev. Lett.</i> 55, 688 (1985) United States |
| 03863 F | D09: He ⁺ + Ca + Cu | 63 eV | Bartscher, B.; Sesselmann, W.; Koppers, J.; Ertl, G.; Heberland, H. Singlet to triplet conversion of metastable He atoms during desorption at a Ca-covered surface. <i>Phys. Rev. Lett.</i> 55, 611 (1985) West Germany |
| 03864 E | H07: hv + He ⁻ | 1.2-1.4 eV | Peterson, J. H.; Bao, Y. K.; Matusik, D. L. Threshold behavior near an electronic shape resonance: analysis of the He(2P) threshold in He ⁻ photodetachment and determination of He(2S) electron affinity. <i>Phys. Rev. Lett.</i> 55, 692 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|---------------------------|--|
| 33865 F | D02: Ar ⁺ + PENT | 633 eV | Steinbruehl, C. A simple formula for low-energy sputtering yields. <i>Appl. Phys. (Germany)</i> 1 34, 37 (1985) Switzerland |
| 33866 E | H36: 3hv + Fe | 595 nm | Kronert, W.; Bann, J.; Kluge, R. J.; Ruster, S.; Wallneroth, K.; Prauer, P.; Trastman, N. Laser resonant ionization of plutonium. <i>Appl. Phys. (Germany)</i> 6 30, 65 (1985) East Germany |
| 33867 F | D18: H + C | Undef | Aronovitz, S.; Cheng, S. Absorption and recombination of hydrogen atoms on a model graphite surface. <i>Astrophys. J., Part 1</i> 293 , 283 (1985) United States |
| 33868 E | E03: e + H ₂ E04: e + H ₂ | 100-200 eV | Shamansky, B. L.; Ajello, J. M.; Hall, D. T. Electron impact excitation of H ₂ : Rydberg band systems and the benchmark dissociative cross section for H Lyman-alpha. <i>Astrophys. J., Part 1</i> 296 , 765 (1985) United States |
| 33869 E | E33: e + He E05: e + He | 200 eV | Shamansky, B. L.; Ajello, J. M.; Hall, D. T.; Franklin, B. Vacuum ultraviolet studies of electron impact excitation of He: excitation of He n 2p ² Rydberg series and ionization excitation of He ⁺ n1 Rydberg series. <i>Astrophys. J., Part 1</i> 296 , 776 (1985) United States |
| 33870 F | F33: e + Ca ²⁺ ; e + Fe ²⁺ | 6.3-8.7 K | Pradhan, A. K. Improved excitation rate coefficients for the n = 2 and n = 3 levels of Ca III and Fe XIV including fine structure. <i>Astrophys. J. Suppl. Ser.</i> 59 , 183 (1985) United States |
| 33871 F | D11: H ₂ + CH ₄ | Thermal | Jiang, P.; Yang, L.; Chen, F. Hydrogen adsorption on the C(110) surface. <i>Chin. Phys. Lett.</i> 9 , 985 (1984) Republic of China |
| 33872 E | H03: hv + H ₂ ; hv + HD; hv + D ₂ | 100-1400 cm ⁻¹ | Best, S. P.; Bloodworth, A. J.; Clark, B.J.H.; Eggelte, R. J. Detection of H ₂ , HD, and D ₂ by Raman spectroscopy. A powerful aid for the elucidation of reaction mechanisms. <i>J. Am. Chem. Soc.</i> 107 , 2624 (1985) United Kingdom |
| 33873 E | A10: HO ₂ + HO ₂ ; OH + H ₂ ; OH + H ₂ O ₂ | 713-773 K | Baldwin, B. B.; Bess, C. E.; Honeyman, S. B.; Walker, R. E. The actual reaction of HO ₂ radicals and the rate constants of the hydrogen + oxygen reaction. <i>J. Chem. Soc. Faraday Trans. 1</i> 83 , 3187 (1988) United Kingdom |
| 33874 E | D11: CO + Ni | 393-513 K | Gijzen, O.L.J.; Van Zandvoort, H.H.J.; Laboie, F.; Vliegenthart, J. A.; Jansert, G. Carbon monoxide on Ni(111). Adsorption isotherms and intermolecular interactions. <i>J. Chem. Soc. Faraday Trans. 11</i> 80 , 771 (1984) The Netherlands |
| 33875 | J31: Diatonic potentials | Undef | Husley, P.; Kramler, D. B.; Serrill, J. R.; Watts, J. D. Ground-state diatomic potentials. Part 2. Van der Waals molecules. <i>J. Chem. Soc. Faraday Trans. 11</i> 82 , 1249 (1986) United Kingdom |
| 33876 E | H05: hv + H ₂ O; hv + D ₂ O | 130-122 nm | Simoes, J. P.; Smith, A. J.; Dixon, B. B. Rotationally resolved photofragment alignment and dissociation dynamics in H ₂ O and D ₂ O. <i>J. Chem. Soc. Faraday Trans. 11</i> 82 , 1489 (1986) United Kingdom |
| 33877 E | A11: Ca ⁺ + H ₂ ; Sr ⁺ + H ₂ ; Ca ⁺ + Sr; Ca ⁺ + CO; Ca ⁺ + H ₂ ; Ca ⁺ + D ₂ | 950 K | Russio, D.; Roberts, G. Time-resolved emission studies of the collisional quenching of Ca(4 ³ P[sub>sub 2]) and Sr(5 ³ P[sub>sub 2]) by various gases in an equilibrium-coupled system following pulsed dye-laser excitation at lambda = 657.3 nm [Ca(4 ³ P ₂) coming from Ca(4 ¹ S ₂)]. <i>J. Chem. Soc. Faraday Trans. 11</i> 81 , 101 (1985) United Kingdom |
| 33878 E | A11: C ₂ D ₂ ⁺ + He; C ₂ D ₂ ⁺ + Ne; C ₂ D ₂ ⁺ + Ar; C ₂ D ₂ ⁺ + Kr; C ₂ D ₂ ⁺ + Xe; C ₂ D ₂ ⁺ + I ₂ ; C ₂ D ₂ ⁺ + D ₂ ; C ₂ D ₂ ⁺ + H ₂ ; C ₂ D ₂ ⁺ + CO | 300 K | Smith, H.J.G.; Davis, C. C.; Smith, I.W.M. Relaxation of C ₂ D ₂ ⁺ (v, v ₂) by vibration-rotation, translation energy transfer. <i>J. Chem. Soc. Faraday Trans. 11</i> 81 , 417 (1985) United Kingdom |
| 33879 E | A11: Ca ⁺ + H ₂ ; Ca ⁺ + D ₂ | 850-1075 K | Russio, D.; Roberts, G. Collisional quenching of Ca(4 ³ P[sub>sub 2]) by H ₂ and D ₂ studied over the temperature range 850-1075 K by time-resolved atomic resonance emission at lambda = 657.3 nm [Ca(4 ³ P ₂) = Ca(4 ¹ S ₂) + hν] following pulsed dye-laser excitation. <i>J. Chem. Soc. Faraday Trans. 11</i> 81 , 527 (1985) United Kingdom |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|-----------------|---|
| 03060 E | A14: F ⁺ + OH + He; Na + OH + He; K + OH + He | 493 K | Hamill, D.; Plane, J.H.C.; Riang, C. C. Absolute third-order rate constant for the reaction between F ⁺ + OH + He determined by time-resolved molecular resonance-fluorescence spectroscopy, OH(A ² X ⁻ - X ²), coupled with steady atomic resonance-fluorescence measurements, He(4 ² P(sub 3) - 5 ² S _{1/2}). J. Chem. Soc. Faraday Trans. II 81, 561 (1985) United Kingdom |
| 03061 E | A11: Ca + O ₂ + He | 481 K | Bessis, D.; Plane, J.H.C.; Riang, C. C. Measurement of the absolute third-order rate constant for the reaction between Ca + O ₂ + He determined by time-resolved molecular resonance-fluorescence spectroscopy, OH(A ² X ⁻ - X ²), coupled with steady atomic resonance-fluorescence, Ca(2 ² P(sub 3) - ² S _{1/2}). J. Chem. Soc. Faraday Trans. II 81, 769 (1985) United Kingdom |
| 03062 E | A11: Sr ⁺ + H ₂ ; Sr ⁺ + D ₂ | 725-1100 K | Bessis, D.; Roberts, G. A kinetic investigation of the collisional behaviour of Sr(5 ² P(sub 3)) with H ₂ and D ₂ over the temperature range 725-1100 K, studied by time-resolved atomic emission at lambda = 689.3 nm [Sr(5 ² P ₃ - Sr(5 ² S ₂) + hv] following pulsed dye-laser excitation. J. Chem. Soc. Faraday Trans. II 81, 1365 (1985) United Kingdom |
| 03063 E | A03: S ₂ ⁺ + O ⁺ A11: S ₂ ⁺ + O ⁺ | Thermal | de Souza, A. R.; Goumet, G.; Younou, H.; Khint, T. Note on the determination of the efficiency of the reaction S ₂ (A ² X) + O(² P) - S ₂ + O(¹ S). J. Phys. B 10, 1461 (1985) France |
| 03064 E | A07: hv + H ⁺ F04: hv + H ⁺ | 3 keV | Claeys, W.; Cornet, A.; Lorent, V.; Fussen, D. H(3s) beam production by laser excitation of metastable hydrogen atoms in an electric field: I. Experiment. J. Phys. B 10, 3667 (1985) Belgium |
| 03065 E | A07: hv + H ⁺ H04: hv + H ⁺ | Undef | Fussen, D.; Claeys, W.; Cornet, A.; Lorent, V. H(3s) beam production by laser excitation of metastable hydrogen atoms in an electric field: II. Theoretical approach. J. Phys. B 10, 3673 (1985) Belgium |
| 03066 E | H06: hv + Na | 12-163 eV | Craig, B. J.; Lathin, P. F. Photoionisation calculations for the s subshells of atomic sodium. J. Phys. B 10, 3711 (1985) Australia |
| 03067 E | H06: hv + Mg | 12.4-14.8 eV | Bartschat, R.; Scott, P. Photoelectron polarization in the photoionization of Mg(6s ² ¹ S ₀ (sup o)). J. Phys. B 10, 3725 (1985) United Kingdom |
| 03068 E | F06: hv + H ₂ | 719-744 Å | Hara, S. Theoretical study of the photoionization of H ₂ . J. Phys. B 10, 3759 (1985) Japan |
| 03069 E | A03: Na ⁺ + H ₂ ; Na ⁺ + CO A14: Na ⁺ + H ₂ ; Na ⁺ + CO | 27-192 eV(C.N.) | Nanagawa, T.; Kita, S.; Izawa, H.; Inouye, H. Rainbow effects of momentum transfer mechanism in collision of Na ⁺ ions with H ₂ and CO molecules. J. Phys. B 10, 3775 (1985) Japan |
| 03090 E | A06: H ⁺ + He ⁺ | 8-133 keV(C.N.) | Binn, K.; Helchert, F.; Salzborn, E. Measurements of charge transfer in H ⁺ + He ⁺ collisions. J. Phys. B 10, 3783 (1985) West Germany |
| 03091 E | A03: He ⁺ + Li A04: He ⁺ + Li | 2.8-2.3 keV | Ghosh, S.; Mandal, C. S.; Mukherjee, S. C. Single and double electron capture from lithium by fast alpha particles. J. Phys. B 10, 3797 (1985) India |
| 03092 E | C04: H ⁺ + Si; Ar ⁺ + Si; Zn ⁺ + GaAs C05: H ⁺ + Si; Ar ⁺ + Si; Zn ⁺ + GaAs | 20-180 keV | Ashworth, D. G.; Nonlvi-Kokki, M.; Oves, P. Simulation of three-dimensional ion implantation distributions. J. Phys. C 10, 5303 (1985) United Kingdom |
| 03093 E | H02: hv + Si | 25-50 keV | Hiko, J. P.; Martin, L. J.; Barot, Z. X-ray attenuation of silicon in the energy range 25-50 keV. J. Phys. C 10, 5215 (1985) Australia |
| 03094 E | C01: e + N ₂ O | 87-133 keV | García-Molina, F.; Gran-Hartis, A.; Hovio, A.; Pittchie, B. H. Peterisation effects in the interaction of charged particle beams with bounded condensed media. J. Phys. C 10, 5135 (1985) Spain |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|--------------|---|
| 33895 E | E30: e + N ₂ ⁺ E36: e + N ₂ ⁺ | Undef | Forand, J. L.; Mitchell, J.P.A.; McGowan, J. W. Triatomic molecular dissociation: a method for measuring individual decay channel cross sections. <i>J. Phys. E</i> 18, 621 (1985) Canada |
| 33896 F | D18: h + π + Sb | 1e73 E | Betzger, T. B.; Schubert, W.; Prisl, J. The trapping of hydrogen at nitrogen in niobium investigated by diffuse x-ray scattering. <i>J. Phys. F</i> 15, 779 (1985) East Germany |
| 33897 Y | D02: Cl ₂ ⁺ + Au; Cl ₂ ⁺ + Si; Ga ⁺ + Au; Ia ⁺ + Si; Cl ⁺ + Au; Cl ⁺ + Si; Ga ₂ ⁺ + Au; Ga ₂ ⁺ + Si; He ⁺ + Au; Xe ⁺ + Si; S ⁺ + Au; S ⁺ + Si; O ₂ ⁺ + Au; O ₂ ⁺ + Si; O ⁺ + Au; O ⁺ + Si | 0-1 keV | Steinbrichel, C. On the sputtering yield of molecular ions. <i>J. Vac. Sci. Technol. A</i> 3, 1913 (1985) Switzerland |
| 33898 E | D12: He ⁺ + SiO ₂ ; He ⁺ + SiO ₂ ; Ar ⁺ + SiO ₂ ; Xe ⁺ + SiO ₂ D17: He ⁺ + SiO ₂ ; He ⁺ + SiO ₂ ; Ar ⁺ + SiO ₂ ; Xe ⁺ + SiO ₂ | 0.5-2.0 keV | Thomas, J. B., III; Hofmann, S. Ion bombardment induced changes in silicon dioxide surface composition studied by x-ray photoelectron spectroscopy. <i>J. Vac. Sci. Technol. A</i> 3, 1921 (1985) United States |
| 33899 E | D03: Ar ⁺ + Si; Ar ⁺ + SiO ₂ | 1.5-5.3 keV | Sander, P.; Kaiser, W.; Jede, B.; Lipinsky, B.; Ganschow, G.; Bunninghoven, A. Secondary ion and sputtered neutral formation from oxygen loaded Si(111). <i>J. Vac. Sci. Technol. A</i> 3, 1946 (1985) West Germany |
| 33900 T | A17: He + H ₂ | Undef | Varandas, A.J.C. A double many-body expansion of molecular potential energy functions. I. Hartree-Fock-approximate correlation energy (SPACE) potential for the HeH ₂ , Van der Waals molecule. <i>Mol. Phys.</i> 53, 1303 (1984) East Germany |
| 33901 E | D11: CD + C | Thermal | Fiber, J.; Morrison, J. A.; Peters, C. The adsorption of carbon monoxide on graphite. <i>Mol. Phys.</i> 53, 1463 (1980) Canada |
| 33902 E | A11: H ₂ + Fe + hν R27: Fe + H ₂ | Undef | Last, I.; Baer, H. Examination of the Landau-Zener approximation in reactive atom-atom collisions. <i>Mol. Phys.</i> 54, 265 (1985) United States |
| 33903 E | R25: 2hv + H ₂ O; 2hv + D ₂ O | 2e8 eV | Hodgson, A.; Simons, J. P.; Ashfold, M.S.R.; Mayley, J. R.; Dixon, R. W. Quantum state-selected photodissociation dynamics in H ₂ O and D ₂ O. <i>Mol. Phys.</i> 58, 351 (1985) United Kingdom |
| 33904 T | A11: He + H ₂ ⁺ ; He + HD ⁺ | Thermal | Farantos, S. C. A quasiclassical study of collisions of He with HD(B ¹ (sub π) ⁺). <i>Mol. Phys.</i> 54, 815 (1985) Greece |
| 33905 E | D29: SC ₂ + Pd D11: SC ₂ + Pd D13: SO ₂ + Pd | 1e3-1233 E | Kolzer, J. G.; Basseth, R. W. Adsorption, desorption, dissociation and recombination of SO ₂ on a palladium (111) surface. <i>Ann. Phys. (Germany)</i> 82, 265 (1985) East Germany |
| 33906 F | E35: e + Ar H06: Lv + Ar | Undef | Anuska, R. V.; Kheifets, A. S. On our ability to measure the singly ionized rare-gas spectroscopic factors using the (gassa, e) and (e, 2e) reactions. <i>J. Phys. B</i> 18, L679 (1985) Soviet Union |
| 33907 E | A37: Ar ⁺ + Ar; Ar ²⁺ + Ar; Ar ²⁺ + Ar | 15 keV | Ogertsov, G. N.; Nikulin, V. K.; Nikoushin, V. N.; Guschina, B. A.; Flaks, I. P. Quenching of autoionisation state excitation due to the collapse of the quasimolecular orbital in the Ar(sup π) ⁺ + Ar system. <i>J. Phys. B</i> 18, L665 (1985) Soviet Union |
| 33908 T | D01: e + H | 5e, 6-150 eV | Van Wyjaerden, W. L.; Walters, M.S.J. State multipoles for the n = 1 - n = 2 excitation of atomic hydrogen by electron impact. <i>J. Phys. B</i> 18, L689 (1985) United Kingdom |
| 33909 F | R25: e + Ar F19: e + Ar | 8199 eV | Grun-Grzhinailo, A. B. On the theory of the (e, 2e) process for the 2p subshell of argon. <i>J. Phys. B</i> 18, L665 (1985) Soviet Union |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|------------------|--|
| 03910 T | H06: hv • He; hv • Ba ²⁺ ; hv • La ³⁺ ; hv • Cs ⁺ E37: hv • I ⁻ | 3-993 eV | Asusic, Z. V.; Ivanov, V. K.; Kuchenko, V. A. The effect of atomic rearrangement on the photoionisation cross section for M subshells of the isoelectronic Xe series. <i>J. Phys. B</i> 18, 3071 (1985) Soviet Union |
| 03911 F | F06: e • Bb ⁺ ; e • B ⁺ H36: hv • Bb ⁺ | 500-600 K | Gene, S. Radiative recombination in rubidium. <i>J. Phys. B</i> 19, 3001 (1985) France |
| 03912 E | A37: He ²⁺ • Yb; He ²⁺ • W; He ²⁺ • Au; He ²⁺ • Pb | 1.2-3.0 MeV | Sohmi, S. S.; Crompton, D. L-shell ionisation of medium and heavy elements by 1.2-3.0 MeV incident alpha particles. <i>J. Phys. B</i> 18, 3939 (1985) United Kingdom |
| 03913 F | A36: Undef A07: Undef | Undef | Peach, G.; Willis, S. L.; McDowell, H.B.C. The classical theory of charge transfer and ionisation processes in collisions between complex atomic ions. <i>J. Phys. B</i> 18, 3921 (1985) United Kingdom |
| 03914 F | A36: He ⁺ • H; He ⁺ • He ⁺ ; H ⁺ • He; Fe ²⁺ • He A37: He ⁺ • H; He ⁺ • He ⁺ ; H ⁺ • He; He ²⁺ • He | 25-1223 keV | Willis, S. L.; Peach, G.; McDowell, H.B.C.; Banerji, J. Charge transfer and ionisation processes in collisions involving atoms and ions of hydrogen and helium. <i>J. Phys. B</i> 18, 3919 (1985) United Kingdom |
| 03915 E | A33: C ²⁺ • He; C ²⁺ • Ne; C ²⁺ • Xe; C ²⁺ • Ar A36: C ²⁺ • He; C ²⁺ • Ne; C ²⁺ • Xe; C ²⁺ • Ar | 400-500 eV | Cederquist, R.; Andersen, L. H.; Barany, I.; Sveinland, P.; Knudsen, H.; Nielsen, E. E.; Pedersen, J.O.K.; Sorensen, J. State-selective single- and double-electron capture processes in slow C ²⁺ • He, Ne, Ar, and Xe collisions. <i>J. Phys. B</i> 18, 3951 (1985) Sweden |
| 03916 E | E32: e • CH, E33: e • CH, E17: e • CH, | 0.5-10 eV | Muller, P.; Jung, K.; Kocher, K. H.; Sohn, W.; Ehrhardt, H. Rotational excitation of CH ₂ by low-energy-electron collisions. <i>J. Phys. B</i> 18, 3971 (1985) West Germany |
| 03917 F | A11: Kr • N ₂ | 77.3-333 K | Dickinson, A. S.; Lee, H. S. Classical trajectory calculations of transport properties for a model Ar-N ₂ potential surface. <i>J. Phys. B</i> 18, 3987 (1985) United Kingdom |
| 03918 F | A37: He ⁺ • He ⁺ | 333 K | Inaba, S.; Goto, T.; Hattori, S. Energy distributions of electrons ejected in collisions of He metastable atoms with He metastable atoms. <i>J. Phys. B</i> 18, 1721 (1985) Japan |
| 03919 E | H06: hv • Ag | 18-140 eV | Krause, R. G.; Svensson, H. A.; Carlson, F. A.; Lecol, G.; Idzerit, D. E.; Holland, D.M.P.; Parr, A. C. Photoeffect in the ed subshell of atomic silver between 18 and 140 eV. <i>J. Phys. B</i> 18, 4209 (1985) United States |
| 03920 T | A03: Li • Na | 5-1000 keV(c.m.) | Nielsen, S. E.; Larsen, H.; Dahler, J. S. Two-electron model of Li(2s-2p) and Na(3s-3p) excitation in Li-Na high-energy collisions. <i>J. Phys. B</i> 18, 4295 (1985) Denmark |
| 03921 E | C06: C ²⁺ • C C37: C ²⁺ • C | 2e-83 MeV | Woods, C. J.; Cowan, R.E.B.; Britwell, L. B.; Sofield, C. J. Absolute excited-state populations of fast carbon ions in solids. <i>J. Phys. B</i> 18, 4113 (1985) United Kingdom |
| 03922 F | E13: e • H E17: e • H | 35-100 eV | Papoff, A.; Sasena, S.; Nathur, K. C. Study of asymmetry in the 1s-2s excitation of the spin-polarized hydrogen atom by a spin-polarized electron. <i>J. Phys. B</i> 18, 4129 (1985) India |
| 03923 F | F33: e • He; e • He ⁺ | 10-33 eV | Berrington, K. A.; Burke, P. G.; Freitas, L.C.G.; Kingston, A. E. Electron excitation from the 1'S, 2'S and 2'P states of helium. An eleven-state R-matrix calculation. <i>J. Phys. B</i> 18, 4135 (1985) United Kingdom |
| 03924 F | F33: e • Fe E05: e • He | 1.2-23 keV | Nitroy, J. D.; McCarthy, J. E.; Weigold, E. A natural orbital analysis of the helium (n, 2e) spectrum. <i>J. Phys. B</i> 18, 4169 (1985) Australia |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|---|---------------|---|
| 01925 Z | E02: e + Be; e + Al; e + Si; e + Al E17: e + Be; e + Al; e + Si; e + Al | 3.5-500 keV | Salvat, F.; Mayol, B.; Molian, E.; Parvillada, J. A simple model for electron scattering: elastic cross-sections. <i>J. Phys. D</i> 18, 1821 (1985) Spain |
| 11926 E-2 | E30: Impurities | | Isler, R. C. Impurities in tokamaks. <i>Nucl. Fusion</i> 20, 1599 (1980) United States |
| 11927 E | E02: e + H E17: e + H | 11-15 eV | Callaway, J.; Oza, B. N. Optical-potential model for electron-atom scattering. <i>Phys. Rev. A</i> 32, 2628 (1985) United States |
| 11928 E | E02: Lu + Be | 1.5-8.7 keV | Coma, S.; Povera, B. Photo-absorption cross sections for beryllium from 1.5 to 8.7 keV. <i>Phys. Rev. A</i> 32, 2637 (1985) United States |
| 11929 E | E03: e + He E04: e + He E10: He + He | 0-8 keV | Buehler, D. W.; Jacobs, D. H. Polarized-photon-scattered-particle correlation measurements in He + He collisions. <i>Phys. Rev. A</i> 32, 2652 (1985) United States |
| 11930 E | E17: Li + He; Li + He; He + He; He + He; He + He; He + He E02: e + He E17: e + He | 1-10 eV | Rossi, F.; Pascale, J. Pseudopotential molecular-structure calculations for alkali-metal-argon-He systems. <i>Phys. Rev. A</i> 32, 2657 (1985) France |
| 01931 E | E04: undef | undef | Sack S. H. Analysis of perturbation methods for rearrangement collisions: comparison of distorted-wave and coupled-channel-wave transition amplitudes. <i>Phys. Rev. A</i> 32, 2670 (1985) United States |
| 01932 E | E07: Be + C | 40 keV | Palinkas, J.; Hauer, R. J.; Watson, B. L. Delayed emission of 2p-1s and 3p-1s X rays from 40-keV neon ions following beam-foil excitation. <i>Phys. Rev. A</i> 32, 2676 (1985) United States |
| 11933 E | E07: Sr + Ca | | Yagisawa, H. Transition process under intense laser field: Sr(Ca) $^2S_{1/2} + Ca(^1S_0) + h\nu \rightarrow Sr(^1S_0) + Ca(^3P_0)$. <i>Phys. Rev. A</i> 32, 2682 (1985) Japan |
| 01934 E | E17: e + N | 20-500 eV | Sharma, S. P.; Prakash, S. Comparison of integral-equation approximations for e + N scattering at intermediate energies. <i>Phys. Rev. A</i> 32, 2689 (1985) India |
| 01935 E | E02: e + CH, E17: e + CH ₄ | 3-20 eV | Lina, R.A.P.; Gibson, T. L.; Hup, D. H.; Schey, V. Studies of electron-polyatomic-molecule collisions: applications to e-CH ₄ . <i>Phys. Rev. A</i> 32, 2696 (1985) United States |
| 11936 E | E06: e + H E10: He + H | 13-173 keV | Hirajima, J. E. Radiative electron capture in proton-hydrogen collision. <i>Phys. Rev. A</i> 32, 2722 (1985) Argentina |
| 11937 E | E02: e + He E17: He + He E07: He + He | undef | Hsu, Y. P.; Olson, R. E. Satellite structure in laser-assisted charge-transfer cross sections. <i>Phys. Rev. A</i> 32, 2707 (1985) United States |
| 11938 E | E04: undef | undef | Diebold, G. J. Quantum-mechanical interference in two-photon absorption: a nonlinear analogue of the Hanle effect. <i>Phys. Rev. A</i> 32, 2719 (1985) United States |
| 11939 E | E04: He + Cs + He | 0.133-5033 eV | O'Callaghan, N. J.; Gallagher, A.; Holstein, T. Absorption and emission of radiation in the region of an avoided level crossing. <i>Phys. Rev. A</i> 32, 2750 (1985) United States |
| 01940 E | E04: He + H | 0.2-0.5 eV | Chu, S. I.; Cooper, J. Threshold shift and above-threshold multiphoton ionization of atomic hydrogen in intense laser fields. <i>Phys. Rev. A</i> 32, 2769 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|---|--------------|--|
| 33901 F | E35: e + He E17: e + He | 222-2033 eV | Soy, J. C.; Matsubara, T. Double differential cross sections for electron-impact ionization of helium. <i>Phys. Rev. A</i> 32, 3390 (1985) West Germany |
| 33902 F | A36: e + He; He + He ⁺ E39: He + He ⁺ | 2.0-0.3 keV | Gimon, R. E.; Simons, E. Molecular-state cross-section calculations for e + He going to or coming from He + He ⁺ . <i>Phys. Rev. A</i> 32, 3392 (1985) United States |
| 33903 C | E35: e + He | 250 eV | Baliyan, S. S.; Srivastava, S. S. Triple-differential cross sections for the fast-electron-impact ionization of atomic hydrogen. <i>Phys. Rev. A</i> 32, 3390 (1985) India |
| 33904 F | A66: Sn1zf | Undef | Jahnke-Bjornson, D. H.; Asmussen, Per A. Exact relativistic second Born approximation for electron capture. <i>Phys. Rev. A</i> 32, 3390 (1985) West Germany |
| 33905 C | E30: He + He | Undef | Deshmukh, P. C.; Hanson, S. T. Application of the relativistic random-phase approximation to He He photoionization. <i>Phys. Rev. A</i> 32, 3377 (1985) India |
| 33906 F | C32: Fe + Cu | 7 keV | Sakanato, S.; Shioni, H.; Ishiyari, R. *Erratum: Geometrical effect on the measurement of stopping power: angle-dependent energy loss of 7-keV protons in Cu foils and computer simulation [<i>Phys. Rev. A</i> 27, 813(1983)]. <i>Phys. Rev. A</i> 32, 3377 (1985) Japan |
| 33907 F-T | A12: He ⁺ + He | 700 eV | Bienisch, P. J. Normalized line shapes for far-wing continuum spectra: the He-He satellite band. <i>Phys. Rev. A</i> 32, 3353 (1985) United States |
| 33908 E | D13: He + He ₂ ; He + CO; He + NO; He + O ₂ ; He + H ₂ O | 203-503 eV | Fossenberg, P. A.; Love, P. J.; LaRoche, P. R.; Behm, V.; Parks, C. C. K-shell photoionization of solid He ₂ , CO, NO, O ₂ , and H ₂ O. <i>Phys. Rev. B</i> 31, 2630 (1985) United States |
| 33909 E | D07: Fe + Cu; He + Cu; Ar + Cu; He + Cu; He + Cu | 63 keV | Rieder, E. H.; Stocker, S. Scattering of He, He, Ar, He, and He from Cu(112). <i>Phys. Rev. B</i> 31, 3392 (1985) Switzerland |
| 33910 E | C32: Fe ⁺ + C | 2.6-0.3 keV | de Pina, A. C. Effect of target thickness on the He ⁺ stopping power. <i>Phys. Rev. B</i> 31, 4653 (1985) Brazil |
| 33911 E | D13: He + He ₂ + Cr | 03-75 eV | Bertel, E.; Stockbauer, B.; Kertz, B. L.; Bauscher, D. E.; Holey, T. E. Resonant photoemission and the mechanism of photon-stimulated ion desorption in a transition-metal oxide. <i>Phys. Rev. B</i> 31, 5500 (1985) United States |
| 33912 T | D13: He + He + He; | 6-13 eV | Clifton, V. L.; Jutila, P. E. Ion energy distributions from photon- and electron-stimulated desorption: reflection approximation. <i>Phys. Rev. B</i> 31, 6001 (1985) United States |
| 33913 F | D13: He + He + He; He + He + He; He + He + He; He + He + He; He + He + He; He + He + He; | 33-133 eV | Bertel, E.; Bauscher, D. E.; Kertz, B. L.; Stockbauer, B.; Holey, T. E. Photon-stimulated desorption of He ⁺ ions from He on He and Cr: comparison with bulk solid He ₂ . <i>Phys. Rev. B</i> 31, 6000 (1985) United States |
| 33914 F | D13: Undef | Undef | Gagliano, E. B.; Goldberg, E. C.; Passerigi, R.C.G.; Ferron, J. Tight-binding model for secondary-ion emission. <i>Phys. Rev. B</i> 31, 6980 (1985) Argentina |
| 33915 T | D13: Undef | Undef | Clifton, V. L.; Erick, H. A.; Sacks, P. S. Angular distributions of ions desorbing from a stepped surface. <i>Phys. Rev. B</i> 31, 7553 (1985) United States |
| 33916 F | D39: Undef | Undef | Favai, P. Resonant neutralization of ions scattered from surfaces in the intermediate-velocity regime. <i>Phys. Rev. B</i> 32, 1313 (1985) Japan |

| Ref. No. | Abstracts | Energy Range | Reference |
|-----------|--|--------------|--|
| 33957 | E31: Lumera | | George, T. P.; Liu, J.; Bari, A. C.; Murphy, D. C. Theory of laser-stimulated surface processes. <i>Prog. Surf. Sci.</i> 10, 139 (1984) United States |
| 33958 | E08: Photoelectron spectroscopy | | Fidley, C. S. Angle-resolved x-ray photoelectron spectroscopy. <i>Prog. Surf. Sci.</i> 16, 275 (1984) United States |
| 33959 E-T | E01: Ion-ion collisions | | Bolder, E.; Peart, B. Experimental aspects of two-body ion-ion collisions. <i>Rep. Prog. Phys.</i> 48, 1283 (1985) United Kingdom |
| 33960 E-T | D06: Ar ⁺ + Al | 10-50 keV | Bomzath, C.; Bomzath, B.; Bos, H. Absolute Auger yields in Ar ⁺ + Al collisions: experiments and computer simulations. <i>Surf. Sci.</i> 151, L137 (1985) France |
| 33961 T | D04: e + C; e + Al; e + Ag; e + Cu; e + Ga; e + Si; e + V; e + Fe; e + Ni | 2.2-3.1 keV | Jahromski, A. Elastic backscattering of electrons from surfaces. <i>Surf. Sci.</i> 151, 166 (1985) West Germany |
| 33962 E | D17: Ar ⁺ + Cu; Ar ⁺ + Cu ₂ | 3-5 keV | Famner, G.; Ebert, B.; Schmidt, H. P. The stability of CuO and Cu ₂ O surfaces during oxygen sputtering studied by XPS and AES. <i>Surf. Sci.</i> 151, 933 (1985) West Germany |
| 33963 E | D37: Undef | Undef | Kara, A.; Armand, G. Elastic scattering of neutral particles from a surface with isolated defects using a soft potential. <i>Surf. Sci.</i> 152-153, 77 (1985) France |
| 33964 E | D37: Undef | Undef | Schlap, W. A. Matrix inversion for the CB method in surface scattering. <i>Surf. Sci.</i> 152-153, 88 (1985) Switzerland |
| 33965 E | D07: Ba ⁺ + Pt | 2000 eV | Niekus, K.; Coosa, G. Alkali ion impact collision scattering at Pt (111). <i>Surf. Sci.</i> 152-153, 93 (1985) West Germany |
| 33966 E-T | D38: SO + Ag | 3.48 eV | Kloys, A. P.; Lantz, A. C.; Kuechler, D. J. Rotational polarization in SO scattering from Ag(111). <i>Surf. Sci.</i> 152-153, 99 (1985) The Netherlands |
| 33967 E | D08: Ba ⁺ + Cu D39: Ba ⁺ + Cu | 6 keV | Van Zoest, J. H.; Van der Hey, C. E.; Fleit, J. H.; Niekus, K. Directional dependence of ion neutralization at a surface. <i>Surf. Sci.</i> 152-153, 136 (1985) The Netherlands |
| 33968 E | D31: Undef | Undef | Landuyt, J. P.; De Bryne, B.; Van der Elstrooten, L.; Versik, J. A novel algorithm to determine the collision in ion scattering simulations. <i>Surf. Sci.</i> 152-153, 116 (1985) Belgium |
| 33969 E | D03: Ar ⁺ + Si; Ar ⁺ + Ga; Ar ⁺ + Bi | 1.5 keV | List, W.; Rohrer, L.; Reinken, B.; Pilsch, H. Investigation of secondary ion yields from In and Ga at the solid-liquid phase transition. <i>Surf. Sci.</i> 152-153, 121 (1985) West Germany |
| 33970 T | D13: Undef | Undef | Ploj, C.; Gerhard, W. Secondary ion production by latent energy of neutrally emitted particles. <i>Surf. Sci.</i> 152-153, 127 (1985) West Germany |
| 33971 E | D08: H ⁺ + Cu; H ⁺ + Zn; H ₂ ⁺ + Cu; H ₂ ⁺ + Zn; He ⁺ + Cu; He ⁺ + Zn; He ⁺ + Co; Ne ⁺ + Zn; Ar ⁺ + Cu; Ar ⁺ + Zn; Kr ⁺ + Cu; Kr ⁺ + Zn; Xe ⁺ + Cu; Xe ⁺ + Zn | 4-20 keV | Zals, P. C.; Beckers, L. J. Ion-induced secondary electron emission from copper and zinc. <i>Surf. Sci.</i> 152-153, 135 (1985) The Netherlands |
| 33972 E | D11: H ₂ + Pt; CO + Pt | 300 K | Poelmann, B.; Verhey, L. E.; Coosa, G. Temperature dependency of the initial sticking probability of H ₂ and CO on Pt(111). <i>Surf. Sci.</i> 152-153, 496 (1985) West Germany |
| 33973 E | D13: Undef | Undef | Bortol, E.; Stockbauer, B.; Kertt, P. L.; Radey, Y. E.; Bamker, D. E. The decay channels of the 3p resonance in the 3d transition metals and their relevance to the mechanism of electron and photon stimulated ion desorption. <i>Surf. Sci.</i> 152-153, 776 (1985) Austria |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|-----------------|---|
| 33974 F | D37: Undef D04: Undef | Undef | Holoney, S.; Cudzik, J. B. Energy redistribution and dissociation in molecule-surface collisions involving charge transfer/surface hopping. <i>Surf. Sci.</i> 152-153, 838 (1985) Sweden |
| 33975 E | D32: Ag* + Cr + Ni D17: Ag* + Cr + Ni | 2 keV | Bowen, P. T.; Petrose, S. A. Surface segregation and preferential sputtering in Cr-Ni alloys. <i>Surf. Sci.</i> 152-153, 925 (1985) Canada |
| 33976 F | D37: Be* + Ti | 5 keV | Yakouchi, H.; Yamamura, Y. Kinetic energy versus total scattering angle diagram for large-angle surface ion scattering. <i>Surf. Sci.</i> 154, 1 (1985) Japan |
| 03977 F | D11: N ₂ + Ni | 300 K | Steinrück, H. Z.; Boudalic, K. B.; Siskler, A. The sticking coefficient of N ₂ on Ni(111) as a function of particle energy and angle of incidence: a test of detailed balancing. <i>Surf. Sci.</i> 154, 99 (1985) Austria |
| 33978 F | D37: Undef | Undef | Morris, A. M.; Colli, V.; Toigo, F. Debye-Haller factor in atom-surface scattering: elastic and inelastic channels. <i>Surf. Sci.</i> 154, 121 (1985) Italy |
| 03979 F | D07: Undef | Undef | Homs, D. R. On improving the trajectory approximation in atom-surface scattering. I. Formalism. <i>Surf. Sci.</i> 154, 658 (1985) United States |
| 03980 E-F | D38: He* + W D39: He* + W | 0.3-2.6 keV | Orzech, K. J.; Holbly, H. F.; Cramer, A. H.; Thygesen, K. H. Neutralization of helium ions backscattered from tungsten. <i>Surf. Sci.</i> 159, 35 (1985) United States |
| 33981 F | D38: He* + Ni D39: He* + Ni | 1 keV | Lee, H. S.; George, T. F. Neutralization and excitation in low-energy ion-surface collisions. <i>Surf. Sci.</i> 159, 219 (1985) United States |
| 33982 F | E33: F + Ne | 41-60 eV | Semenyuk, Y. B. An electron-impact study of structure of the resonance excitation cross section in helium ions. <i>Vkr. Phys. J.</i> 29, 1252 (1988) Soviet Union |
| 03983 E | E04: hv + Fe | 33.94-34.54 keV | Czerwinski, E.; Seund, F.; Schupp, D.; Schenker, H.; Hillmann, A. H.; Schenk-Schwarz, H. Resonant Raman scattering of synchrotron X rays by neon: test of angular and polarization dependence of RRS. <i>Z. Phys. A</i> 322, 183 (1985) West Germany |
| 03984 F | A04: D0* + He; H ¹⁰⁰⁺ + He | 17-20 keV | Jakubassa-Abundson, D. B. Radiative electron capture accompanying resonant nuclear scattering. <i>Z. Phys. A</i> 322, 191 (1985) West Germany |
| 33985 E | B26: hv + Fe | 133-96 eV | Heckenkamp, C.; Schafer, F.; Schwanke, G.; Weizmann, U. The photoelectron spin-polarization parameters in the 5p-photoionization range of neon. IIV ICPEAC, Palo Alto, Abstracts, p. 3, Stanford University (1985) West Germany |
| 33986 E | B3a: hv + Fe | 13-32 eV | Schafer, F.; Heckenkamp, C.; Weizmann, U. Photoelectron spin-polarization in the Cooper minimum of Fe 6s. IIV ICPEAC, Palo Alto, Abstracts, p. 5, Stanford University (1985) West Germany |
| 03987 F | H0a: hv + Cl | 780-200 Å | Sanson, J.A.B.; Shafer, Y.; Aggel, G. C. Photoionization of atomic and molecular chlorine. IIV ICPEAC, Palo Alto, Abstracts, p. 6, Stanford University (1985) United States |
| 03988 E | H0a: hv + Ba* | 12-143 eV | Bizez, J. H.; Cebeynes, D.; Gerard, P.; Beilouzier, F.; Keller, J. C.; Lecomte, J. L.; Piquet, J. L.; Tard, S.; Ejeret, D.; Mendia, G. Measurement of the 3d photoionization cross section in laser excited barium atoms between 15 eV and 153 eV photon energy. IIV ICPEAC, Palo Alto, Abstracts, p. 7, Stanford University (1985) France |
| 03989 E | H0a: hv + Ba | 100-140 eV | Becker, G.; Kolzel, B.; Kerthoff, H. G.; Langer, B.; Szostak, D.; Schütz, H. Evidence for shape resonance dependent satellite behavior in atomic barium. IIV ICPEAC, Palo Alto, Abstracts, p. 12, Stanford University (1985) West Germany |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|----------------------------------|--|--|
| 03990 F | H06: hv + Cs ⁺ | 623-303 eV | Theodosios, C. E. Photoionization of excited Cs I states. IIV ICPEAC, Palo Alto, Abstracts, p. 18, Stanford University (1985) United States |
| 03991 F | H36: hv + 0 | 1.2-6.3 eV | Bhattacharya, S. K.; Hanson, S. T. Threshold effects in inner-shell photoionization of open-shell atoms: Hartree-rect calculations of boron. IIV ICPEAC, Palo Alto, Abstracts, p. 20, Stanford University (1985) United States |
| 03992 F | H36: hv + He ⁺ | 7-1.3 eV | McNamee, A. Z.; Hanson, S. T. Photoionization of the excited He 4d state. IIV ICPEAC, Palo Alto, Abstracts, p. 21, Stanford University (1985) United States |
| 03993 F | H36: hv + Hg | 10.5-10.3 eV | Bartschat, K.; Scott, B. S. Photoionization of mercury. IIV ICPEAC, Palo Alto, Abstracts, p. 23, Stanford University (1985) United States |
| 03994 F | H36: hv + H ₂ | 3-1 a.u. | McCardy, C. E.; Yu, C. H.; Pitzer, R. R. Molecular photoionization cross sections by the complex basis function method. IIV ICPEAC, Palo Alto, Abstracts, p. 40, Stanford University (1985) United States |
| 03995 F | H06: hv + H ₂ | 736 Å ⁰ | Kara, S. The rotationally and vibrationally resolved photoionization of H ₂ by 736 Å ⁰ line. IIV ICPEAC, Palo Alto, Abstracts, p. 46, Stanford University (1985) Japan |
| 03996 E | H07: hv + He ⁺ | 1.22-2.50 eV | Lee, Y. K.; Peterson, J. B. Modified photodetachment threshold behavior near resonances. IIV ICPEAC, Palo Alto, Abstracts, p. 48, Stanford University (1985) United States |
| 03997 E | H07: hv + He ⁺ | 1.22-1.39 eV | Peterson, J. B.; Lee, Y. K.; Coggiola, V. J.; Maestri, D. L. Details of the He ⁺ (sup e) 2h1p resonance and the He (2P ²) electron affinity. IIV ICPEAC, Palo Alto, Abstracts, p. 49, Stanford University (1985) United States |
| 03998 F | H05: 2hv + HD ⁺ | 1.6-1.7x10 ⁴ Å ⁰ | Chakrabarti, B. K.; Bhattacharyya, S. S.; Datta, K. K.; Saha, S. Two-photon dissociation of HD ⁺ by the 1s sigma(sub g) - 1s sigma(sub g) vibrational transition. IIV ICPEAC, Palo Alto, Abstracts, p. 92, Stanford University (1985) India |
| 03999 F | H17: e + H | 30-400 eV | Khare, S. P.; Prakash, S. Relationship between Fr-uhols integral equation and Schwinger variational principle and its application to atomic scattering. IIV ICPEAC, Palo Alto, Abstracts, p. 91, Stanford University (1985) India |
| 04000 F | H32: e + He | 3-23 eV | Compeanu, B. I. Semiempirical model description of the low energy electron scattering from helium. IIV ICPEAC, Palo Alto, Abstracts, p. 99, Stanford University (1985) Romania |
| 04001 F | H02: e + Ar | 300-800 eV | Ija, I.; Hu-Yao, L.; Hoqueira, J. C.; Barbieri, B. S. Elastic cross sections for electron-sigma scattering in the intermediate energy (300-1000 eV) range. IIV ICPEAC, Palo Alto, Abstracts, p. 105, Stanford University (1985) Brazil |
| 04002 E | H02: e + Fe | 5-200 eV | Nishimura, N.; Danjo, A.; Matsuda, F. Differential scattering cross sections of electrons from Fe. IIV ICPEAC, Palo Alto, Abstracts, p. 130, Stanford University (1985) Japan |
| 04003 F | H03: e + He H17: e + He | 80 eV | Csanak, G.; Cartwright, D. C. Cross sections and coincidence parameters for excitation of the s'LL (n = 2,3,4) states of helium. IIV ICPEAC, Palo Alto, Abstracts, p. 111, Stanford University (1985) United States |
| 04004 E | H33: e + He | 18-43 eV | Williams, J. F.; Humphrey, J. Electron impact excitation of the 3P state of helium. IIV ICPEAC, Palo Alto, Abstracts, p. 112, Stanford University (1985) Australia |
| 04005 F | H03: e + H H17: e + H | 100 eV | Sasana, S.; Gupta, J. P.; Nathur, K. C. Electron impact excitations of 1s and ns states of hydrogen. IIV ICPEAC, Palo Alto, Abstracts, p. 123, Stanford University (1985) India |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|---------------------------------|---|
| 04006 F | D12: e + Au; e + U | 75 keV | Altman, J. C.; Quarles, C. Double atomic-field bremsstrahlung. IIV ICPEAC, Palo Alto, Abstracts, p. 139, Stanford University (1985) United States |
| 30337 F | F05: e + He F17: e + He | 33.5 eV | Van der Hart, P.J.H.; Van Eck, J.; Heideman, T.G.M.; Niemhuis, G. An optical potential model for post-collision interaction in ejected electron spectra. IIV ICPEAC, Palo Alto, Abstracts, p. 154, Stanford University (1985) The Netherlands |
| 30338 F | F05: e + He F17: e + He | 500 eV | Avaldi, L.; Camilloni, P.; Fainelli, E.; Stefani, G. Absolute double differential ionization cross-section for electron impact: He. IIV ICPEAC, Palo Alto, Abstracts, p. 157, Stanford University (1985) Italy |
| 00009 E | F05: e + Cl; e + Br; e + I | 10-200 eV | Hepes, T. B.; Wetzel, P. C.; Freund, R. S. Electron impact ionization cross section measurements of the chlorine, bromine, and iodine atoms. IIV ICPEAC, Palo Alto, Abstracts, p. 161, Stanford University (1985) United States |
| 30310 E | A01: He ⁺ + Ar; He ⁺ + Ar A07: F ⁺ + Ar; He ⁺ + Ar F03: e + Ar F05: e + Ar | 23-2x10 ⁴ keV/amu | Schattner, K. H.; Kraus, B.; Flais, H. J.; Beymann, K. Production of excited Ar II- and Ar III-ions by proton-and electron-impact. IIV ICPEAC, Palo Alto, Abstracts, p. 165, Stanford University (1985) West Germany |
| 30311 E | F05: e + Xe | 16-163 eV | Mather, D.; Madrinathan, C. Partial cross sections for single and multiple ionization of Xe using crossed electron-neutral beams. IIV ICPEAC, Palo Alto, Abstracts, p. 167, Stanford University (1985) India |
| 00012 E | F05: e + Ar | 62-100 eV | Muber, E. A.; Puerta, J.; Wiesenann, K. Single electron impact ionization cross sections for ground state and metastable Ar ⁺ ions. IIV ICPEAC, Palo Alto, Abstracts, p. 168, Stanford University (1985) West Germany |
| 30313 T | F05: e + H | 500 eV | Baliyan, M. S.; Srivastava, N. K. Importance of higher-order effects in large-angle coplanar symmetric (e,2e) processes. IIV ICPEAC, Palo Alto, Abstracts, p. 173, Stanford University (1985) India |
| 00014 T | F05: e + H F17: e + H | 250 eV | Roy, A. C. Triply differential cross sections for the H(e,2e)H ⁺ process. IIV ICPEAC, Palo Alto, Abstracts, p. 171, Stanford University (1985) Australia |
| 30315 E | F05: e + He F17: e + He | 1000 eV | Cook, J.P.D.; McCarthy, J. E.; Vitroy, J. D.; Weigold, E. The noncoplanar symmetric (e,2e) reaction on the valence orbitals of neon. IIV ICPEAC, Palo Alto, Abstracts, p. 173, Stanford University (1985) Australia |
| 00016 T | F03: e + H F17: e + H | 50.0 eV | Dewanjan, D. P.; Khediker, S. M. A new approach to scattering by multi-central interactions. IIV ICPEAC, Palo Alto, Abstracts, p. 170, Stanford University (1985) India |
| 30317 T | F03: e + He ⁺ | 33-100 eV | Castwright, D. C.; Csanak, J. Electron-impact excitation from the 2P5 metastable state of helium to higher electronic states. IIV ICPEAC, Palo Alto, Abstracts, p. 199, Stanford University (1985) United States |
| 30318 T | F03: e + Na; e + K F17: e + Na; e + K | 63-170 eV | Bielichowsky, C. E.; Lins de Barros, M.J.P. Electron impact excitation of alkali atoms. IIV ICPEAC, Palo Alto, Abstracts, p. 211, Stanford University (1985) Brazil |
| 30319 T | F02: e + H ₂ F03: e + H ₂ F17: e + H ₂ | 3.76-10 eV | Feldt, A. W.; Gibson, T. L.; Morrison, M. A.; Sans, B. C. Theoretical cross sections for low-energy e-H ₂ scattering. IIV ICPEAC, Palo Alto, Abstracts, p. 219, Stanford University (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|--------------|---|
| 00020 I | E02: e + H ₂ | 100-800 eV | Sao, B. S.; Dami, K. S. Scattering of electrons by hydrogen molecule in independent united atom model. XIV ICPEAC, Palo Alto, Abstracts, p. 223, Stanford University (1985) India |
| 00021 F | E02: e + D ₂ | 400-800 eV | Iga, I.; Ju-Tsu, L.; Hogueira, J. C.; Barbieri, B. S.; Lopes, B.C.A. Electron elastic cross sections measurements for O ₂ at intermediate energy (100-1000 eV) range. XIV ICPEAC, Palo Alto, Abstracts, p. 224, Stanford University (1985) Brazil |
| 00022 E | E17: e + CH ₄ | 2.00-30 eV | Perch, J.; Granitz, B.; Baith, W. Low-energy electron scattering on methane. XIV ICPEAC, Palo Alto, Abstracts, p. 233, Stanford University (1985) West Germany |
| 00023 E | E03: e + CH ₄ , E17: e + CH ₄ | 0.5-10 eV | Muller, B.; Jung, K.; Ehrhardt, H. Rotational and rovibrational excitation of CH ₄ by electron impact between 0.5 eV and 10 eV. XIV ICPEAC, Palo Alto, Abstracts, p. 234, Stanford University (1985) West Germany |
| 00024 F | E32: e + CH ₄ , E03: e + H ₂ | 7.5-12 eV | Lina, R.A.P.; Gibson, T. L.; Suo, B. H.; McKay, V. Multichannel Schwinger variational calculations of low-energy electron-molecule collisions. XIV ICPEAC, Palo Alto, Abstracts, p. 235, Stanford University (1985) United States |
| 00025 I | E33: e + H ₂ | 12-20 eV | Schneider, B. J.; Collins, L. A. A linear algebraic approach to electronic excitation of atoms and molecules by electron impact. XIV ICPEAC, Palo Alto, Abstracts, p. 241, Stanford University (1985) United States |
| 00026 I | E17: e + H ₂ | 200-800 eV | Sao, B. S. Inelastic scattering of electrons by hydrogen molecule. XIV ICPEAC, Palo Alto, Abstracts, p. 243, Stanford University (1985) India |
| 00027 E | E68: e + CO; e + CO ₂ ; e + CH ₄ , E05: e + CO; e + CO ₂ ; e + CH ₄ | 10-500 eV | Oriant, O. J.; Srivastava, S. K. Ionization and dissociative ionization of CO, CO ₂ , and CH ₄ by electron impact. XIV ICPEAC, Palo Alto, Abstracts, p. 273, Stanford University (1985) United States |
| 00028 I | E38: e + H ₂ , E39: e + H ₂ | 6-12 eV | Bhattacharyya, S.; Chatterjee, L.; Vasuchoudhury, K. An ab-initio study of the dissociative attachment of H ₂ of electrons at energies 6 eV to 12 eV. XIV ICPEAC, Palo Alto, Abstracts, p. 280, Stanford University (1985) India |
| 00029 I | E03: e + O ²⁺ ; e + Ne ²⁺ ; e + Ar ²⁺ ; e + Si ²⁺ | 2-90 Ry | Agarwal, K. N. Electron impact excitation of optically allowed transitions in C-like ions. XIV ICPEAC, Palo Alto, Abstracts, p. 287, Stanford University (1985) United Kingdom |
| 00030 E-I | E31: e + Hg ⁰ , E17: e + Ar ⁰ | 35-50 eV | Williams, I. D.; Chetjian, A.; Neezane, A. Z.; Henry, R.J.W. Differential electron scattering cross sections for the 3s ² 5 _{1/2} - 3p ² 5 _{1/2} transitions in Hg II: Comparison of experiment and theory. XIV ICPEAC, Palo Alto, Abstracts, p. 289, Stanford University (1985) United States |
| 00031 F | E23: e + Li ⁰ | 100-500 eV | Srivastava, R.; Katiyar, A. K. Excitation of doubly excited autoionization states in Li. XIV ICPEAC, Palo Alto, Abstracts, p. 293, Stanford University (1985) India |
| 00032 E | E05: e + He ²⁺ | 2.5-20 keV | Chastrenee, S.; Deffrance, P.; Rachafi, S.; Belin, D.; Brouillart, Y. Electron impact ionization of He ²⁺ . XIV ICPEAC, Palo Alto, Abstracts, p. 299, Stanford University (1985) Belgium |
| 00033 E | E05: e + Ti ⁰ ; e + Ti ²⁺ | 12-2000 eV | Dimeranz, H. J.; Harrison, R.F.S.; Suits, A.C.R. Ionization of Ti ⁰ , Ti ²⁺ , and Ar ²⁺ by electron impact. XIV ICPEAC, Palo Alto, Abstracts, p. 307, Stanford University (1985) United Kingdom |
| 00034 F | E35: e + Bi ⁰ ; e + Bi ²⁺ ; e + Bi ³⁺ | 11-1000 eV | Muller, A.; Tischer, K.; Achenbach, C.; Salzborn, E.; Becker, B.; Pindzola, H. S. Single and multiple ionization of multiply charged ions by electron impact. XIV ICPEAC, Palo Alto, Abstracts, p. 301, Stanford University (1985) West Germany |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|------------------|--|
| 30335 F | E33: e + Kr ²⁰⁺ | 13 keV | Kuznetsov, A. Z.; Lee, J.; Heary, R. J. B.; Boed, K. J. Electron impact excitation of Kr ²⁰⁺ . IIV ICPEAC, Palo Alto, Abstracts, p. 332, Stanford University (1985) United States |
| 30336 E | E35: e + Ba ⁺ ; e + K ⁺ | 3.333-3 keV | Miyazawa, T.; Oda, K.; Horikawa, Y.; Ono, Y.; Ikeruhi, Y.; Kobayashi, S.; Takayanagi, T.; Sakai, K.; Suzuki, H. Measurements of cross section for single and double ionization for Ba ⁺ , K ⁺ , and Na ⁺ . IIV ICPEAC, Palo Alto, Abstracts, p. 333, Stanford University (1985) Japan |
| 00037 F | E05: e + B ²⁺ ; e + C ²⁺ ; e + N ²⁺ ; e + O ²⁺ | 6.3-22.9 eV | Campana, B. E.; Nagy, L. Distorted wave cross sections for electron-impact ionization of the lithium-like ions. IIV ICPEAC, Palo Alto, Abstracts, p. 334, Stanford University (1985) Romania |
| 00038 E | E06: e + S ²⁺ | 0-22 eV | Bittner, P. F.; Datz, S.; Miller, F. D.; Popiller, P. L. Dielectronic recombination measurements of P ²⁺ , S ²⁺ , and Cl ²⁺ . IIV ICPEAC, Palo Alto, Abstracts, p. 334, Stanford University (1985) United States |
| 30339 F | E36: e + Rg ⁺ | 1.9-8.7 eV | Nickson, A. P. Dielectronic recombination of Rg ⁺ . IIV ICPEAC, Palo Alto, Abstracts, p. 339, Stanford University (1985) United States |
| 30340 F | E38: e + Rg ⁺ E39: e + Rg ⁺ | 3.36-3.5 eV | Takagi, C.; Sakuma, S. Dissociative recombination of Rg ⁺ by collisions with slow electrons. IIV ICPEAC, Palo Alto, Abstracts, p. 336, Stanford University (1985) Japan |
| 00041 E | E17: e + Na | 3-78 eV | Stein, T. S.; Kwan, C. K.; Gomer, R. B.; Hsieh, Y. F.; Kauppila, W. E.; Van, Y. J. Positron and electron-alkali (sodium and potassium) total cross section measurements. IIV ICPEAC, Palo Alto, Abstracts, p. 322, Stanford University (1985) United States |
| 30342 E | E17: e + O ₂ | 1-533 eV | Kwan, C. K.; Hsieh, Y. F.; Kauppila, W. E.; Smith, S. J.; Stein, T. S. Positron and electron total cross-section measurements for molecular oxygen. IIV ICPEAC, Palo Alto, Abstracts, p. 332, Stanford University (1985) United States |
| 30343 F | A33: Li + Na | 0-1333 keV(c.a.) | Nielson, S. E.; Larsen, H.; Dahler, J. S. Two electron model calculations of Li(2s-2p) and Na(3s-3p) excitation in Li-Na high energy collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 354, Stanford University (1985) Denmark |
| 30344 E | A37: He ⁺ + Ar | 3.33-8 eV | Jerrard, P. A.; Smith, A.C.H. Velocity dependence of chemi-ionization of rare gas atoms and simple molecules. IIV ICPEAC, Palo Alto, Abstracts, p. 375, Stanford University (1985) United Kingdom |
| 30345 F | A33: He ⁺ + He; He ⁺ + He A37: He ⁺ + He; He ⁺ + He | 133 eV | Kaurava, I.; Srivastava, R.; Tripathi, A. B. Excitation of helium by He ⁺ and H impact: a distorted wave approach. IIV ICPEAC, Palo Alto, Abstracts, p. 383, Stanford University (1985) India |
| 30346 F | A33: H ⁺ + H | 10-200 keV | Reinhold, C. O.; Miraglia, J. E. Proton-hydrogen excitation at high and intermediate energies. IIV ICPEAC, Palo Alto, Abstracts, p. 381, Stanford University (1985) Argentina |
| 00047 E | A01: Li ⁺ + H A18: Li ⁺ + H | 43.8 keV | Fraser, J. L.; Bhattachary, G. Differential cross sections for the excitation of atomic hydrogen by lithium ions at intermediate energy. IIV ICPEAC, Palo Alto, Abstracts, p. 382, Stanford University (1985) United States |
| 30348 F | A33: H ⁺ + Na | 3.1-13 a.u. | Scholler, O.; Briggs, J. S. The excitation of sodium atoms by proton impact. IIV ICPEAC, Palo Alto, Abstracts, p. 384, Stanford University (1985) West Germany |
| 30349 E | A33: He ⁺ + Na; He ⁺ + Na; He ⁺ + Na; He ⁺ + Na | 1-25 keV | Anderson, L. W.; Allen, J. S.; Liu, C. C.; Niers, P. E. Excitation of the Na(3d) level by He ⁺ , He ⁺ , He ⁺ , or He ⁺ ions. IIV ICPEAC, Palo Alto, Abstracts, p. 385, Stanford University (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|-----------------|---|
| 00050 E | A03: K α + He A10: K β + He | 46.7 keV | Rudd, E.; Blankenship, D. B.; Saely, D. G.; Gay, T. J.; Pouchot, J. L.; Park, J. T. Inelastic differential scattering cross sections for exciting K α , 44.7, and 150 keV K β in collisions with He: K α (1s) + He - K α (1p) + He and K β (3d or 4d) + He. IIV ICPEAC, Palo Alto, Abstracts, p. 306, Stanford University (1985) United States |
| 30351 F | A22: H $^+$ + H | 25 keV | Potrieye, R. M.; Joachain, C. J.; Furdado, F. Optical model theory of elastic H $^+$ + H and H $^+$ + He scattering at intermediate velocities. IIV ICPEAC, Palo Alto, Abstracts, p. 308, Stanford University (1985) Belgium |
| 00052 F | A03: La $^{3+}$ + H $_2$ A36: La $^{3+}$ + H $_2$ | 450-700 keV | Clark, H. W.; Bernstein, E. M.; Tania, J. A.; Berkmner, F. M.; Gohil, P.; Graham, B. G.; McFarland, R. M.; Soryan, T. J.; Miller, A.; Schlachter, A. S.; Stearns, J. S.; Stockli, R. P. L-shell resonant-transfer-and-excitation for La $^{3+}$ + H $_2$ collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 391, Stanford University (1985) United States |
| 30353 E | A33: S $^{16+}$ + He A36: S $^{16+}$ + He | 23-220 keV | Yank, J. A.; Bernstein, E. M.; Clark, H. W.; Graham, B. G.; McFarland, R. M.; Soryan, T. J.; Johnson, B. M.; Jones, K. E.; Wilson, R. Correlated and uncorrelated electron capture and K-shell excitation in S $^{16+}$ + He collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 390, Stanford University (1985) United States |
| 30354 E | A33: Ca $^{19+}$ + H $_2$ A36: Ca $^{19+}$ + H $_2$ A38: Ca $^{19+}$ + H $_2$ | 103-320 keV | Bernstein, E. M.; Tania, J. A.; Berkmner, F. M.; Clark, H. W.; Graham, B. G.; McFarland, R. M.; Soryan, T. J.; Miller, A.; Schlachter, A. S.; Stearns, J. S. Correlations between charge changing events and K x-ray emission in Ca $^{19+}$ + H $_2$ collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 395, Stanford University (1985) United States |
| 30355 E | A36: Ca $^{19+}$ + H $_2$; Ca $^{17+}$ + H $_2$ | 103-325 keV | Graham, B. G.; Tania, J. A.; Bernstein, E. M.; Clark, H. W.; McFarland, R. M.; Soryan, T. J.; Berkmner, F. M.; Schlachter, A. S.; Stearns, J. S.; Miller, A. Structure in high energy, multiply-charged ion-atom electron-capture cross sections. IIV ICPEAC, Palo Alto, Abstracts, p. 396, Stanford University (1985) United Kingdom |
| 00056 E | A03: Si $^{14+}$ + He A38: Si $^{14+}$ + He | 15-95 keV | Clark, H. W.; Anthony, J.; Swenson, J. K.; Shafroth, S. M. Excitation and ionization in Si $^{14+}$ + He collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 398, Stanford University (1985) United States |
| 30357 E | A33: S $^{16+}$ + Au | 80 keV | Berinde, A.; Clertes, C.; Kulescu, A.; Fiseras, D.; Piticu, I.; Zoran, V. Target-thickness dependence of the Au L α x-ray yields produced by 2.5 MeV/amu sulphur ions. IIV ICPEAC, Palo Alto, Abstracts, p. 399, Stanford University (1985) Romania |
| 00058 E | A07: C $^+$ + He A10: C $^+$ + He A17: C $^+$ + He | 0.05-2.0 keV | Toburen, L. H. Electron emission in collisions of C $^+$ ions with atomic and molecular targets. IIV ICPEAC, Palo Alto, Abstracts, p. 420, Stanford University (1985) United States |
| 30359 E | A27: H $^+$ + Li; He $^{10+}$ + Li | 20-2000 keV/amu | Shah, B. B.; Elliott, D. S.; Gilbody, H. B. Ionization and charge transfer in collisions of H $^+$ and He $^{10+}$ ions with Li atoms. IIV ICPEAC, Palo Alto, Abstracts, p. 405, Stanford University (1985) United Kingdom |
| 30363 E | A36: He $^{2+}$ + He A37: He $^{2+}$ + H $_2$; He $^{2+}$ + He; He $^{2+}$ + He; He $^{2+}$ + Ar | 5-323 keV/amu | Itoh, I.; Budd, H. E.; Coffe, T. V. Cross sections for ionization and electron transfer for 5-323 keV/s He $^{2+}$ ions in gases. IIV ICPEAC, Palo Alto, Abstracts, p. 426, Stanford University (1985) United States |
| 30364 E | A37: He $^{2+}$ + He; He $^{2+}$ + He; He $^{2+}$ + Ar; C $^{6+}$ + He; C $^{6+}$ + He; C $^{6+}$ + Ar; O $^{8+}$ + He; O $^{8+}$ + He; O $^{8+}$ + Ar; Ne $^{10+}$ + He; Ne $^{10+}$ + He; Ne $^{10+}$ + Ar | 1.65 keV/amu | Shibata, K.; Se, S. N.; Tonoue, T.; Kusagai, K.; Nawa, H.; Kambara, T.; Kohno, I.; Tawara, H. Ionization of rare gas atoms in 1.65 MeV/amu fully stripped ion impact. IIV ICPEAC, Palo Alto, Abstracts, p. 427, Stanford University (1985) Japan |
| 30362 F | A37: H $^+$ + He | 30 keV | Mokoyama, T.; Liu, C. D.; Vritsch, B. Calculations of electron energy distribution ejected in ion-atom collisions by pseudostate method. IIV ICPEAC, Palo Alto, Abstracts, p. 411, Stanford University (1985) Japan |

| Ref. No. | Reactions | Energy Range | Reference |
|----------|---|--|--|
| 30263 E | A37: Li ⁺ + He | 3.0-8 keV | Izumi, Y.; Katano, H.; Omi, H.; Takayangi, T.; Sekiya, K.; Suzuki, H. Cross sections for electron autoionization in low energy Li ⁺ + He collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 817, Stanford University (1985) Japan |
| 00064 E | A16: F ⁺ + Ne; F ⁺ + Ar | 50-150 eV (rel) | Scott, D.; Hug, H. T.; Champion, S. L.; Boverman, L. D. Collisional electron detachment of alkali anions. IIV ICPEAC, Palo Alto, Abstracts, p. 823, Stanford University (1985) United States |
| 30265 E | A33: H ⁺ + He | 13-33 keV | Hintermayer, H.; Kessler, G.; Farnberg, T.; Schulz, H. The H ⁺ p _{3/2} states excited by proton impact: absolute cross sections and alignment. IIV ICPEAC, Palo Alto, Abstracts, p. 835, Stanford University (1985) East Germany |
| 00064 E | A03: H ⁺ + He; H ⁺ + Ne A36: H ⁺ + Ne; H ⁺ + He | 1-300 keV | Hippeler, B.; Harbich, F.; Faust, H.; Kleinpoppen, H.; Lotz, H. O. Alignment and orientation of H(2p) excitation in H ⁺ - and H ⁺ -He gas collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 843, Stanford University (1985) East Germany |
| 30267 F | A30: C ⁺ + He; C ⁺ + H; C ²⁺ + He; C ²⁺ + H; C ³⁺ + He | 10 ⁻² -10 ⁷ eV/amu | Karashima, S.; Hatanabe, T.; Liu, Y. Electron stripping cross section from multi-charged ions by H and He. IIV ICPEAC, Palo Alto, Abstracts, p. 853, Stanford University (1985) Japan |
| 30268 E | A33: C ²⁺ + He; F ²⁺ + He; Si ²⁺ + He; Fe ²⁺ + He | 1-25 vel(a.u.) | Thunn, U.; Briggs, J. S.; Scholler, O. Theory of the excitation of highly-stripped projectile ions. IIV ICPEAC, Palo Alto, Abstracts, p. 861, Stanford University (1985) West Germany |
| 30269 F | A33: C ²⁺ + H | 3-12 vel(a.u.) | Selop, A.; Eichler, J. Hydrogen excitation in energetic stripped-ion hydrogen atom collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 862, Stanford University (1985) United States |
| 30270 E | A36: H ²⁺ + He | 51 keV | Gleizes, A.; Benoit-Cattin, P.; Bordenave-Montesquieu, A.; Dousson, S.; Hitz, B. Autoionization of H ²⁺ (n ² Hn ² L ²) formed by two-electron capture in H ²⁺ (1s ²) + He collision, at 3.0 keV/amu. IIV ICPEAC, Palo Alto, Abstracts, p. 866, Stanford University (1985) France |
| 30271 E | A36: H ²⁺ + He; H ²⁺ + He A10: H ²⁺ + He; H ²⁺ + He | 60-70 keV | Bordenave-Montesquieu, A.; Benoit-Cattin, P.; Gleizes, A.; Dousson, S.; Hitz, B. Electron angular distributions and total cross sections for two-electron capture processes observed in H ²⁺ + He collisions by electron spectroscopy at 12.2 keV. IIV ICPEAC, Palo Alto, Abstracts, p. 865, Stanford University (1985) France |
| 00072 E | A06: Xe ⁺ + Ar; Ar ²⁺ + Ar A37: Xe ⁺ + Ar; Ar ²⁺ + Ar | 36-100 keV | Nack, H.; Drentje, A. G.; Slebocka, A. Triple coincidence studies of slow collisions of highly charged ions with atoms: electron spectra. IIV ICPEAC, Palo Alto, Abstracts, p. 866, Stanford University (1985) The Netherlands |
| 30273 E | A37: Ar ²⁺ + Kr; Ar ²⁺ + Kr; Ar ³⁺ + Kr; Ar ²⁺ + Kr; Ar ³⁺ + Kr; Ar ⁴⁺ + Kr; Ar ³⁺ + Kr; Ar ⁴⁺ + Kr | 3.0-16.2 keV | Liljebj, L.; Astner, G.; Barany, A.; Cedergren, H.; Hansson, H.; Hult, S.; Svelplund, P.; Johansson, S.; Sandstrom, H.; Hansfelt, K. G. Multi-electron processes in slow collisions of Ar(2p ²) ⁺ with He, Ar, Kr. IIV ICPEAC, Palo Alto, Abstracts, p. 873, Stanford University (1985) Sweden |
| 30276 E | A36: He ²⁺ + He A10: He ²⁺ + He | 132-700 eV | Tunnell, L. W.; Cocke, C. L.; Waggoner, V. T.; Giese, J. F. Differential cross sections for electron transfer in He ²⁺ + He collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 872, Stanford University (1985) United States |
| 30275 E | A36: I ²⁺ + He; I ²⁺ + He; I ³⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; I ²⁺ + He; I ³⁺ + He; I ⁴⁺ + He; | 992-5140 | Hann, B.; Cocke, C. L. Electron capture cross sections and n, l-level populations for highly charged slow recoil ions. IIV ICPEAC, Palo Alto, Abstracts, p. 875, Stanford University (1985) United States |

| No. E. | Reactants | Energy Range | Reference |
|---------|---|-------------------------------|---|
| 30376 E | <p>A30: $H^+ + H$; $H^+ + H_2$; $H^+ + H_2^+$; $H^+ + H_2^+$; $H^+ + H_2^+$ $He^+ + H$; $He^+ + H_2$; $He^+ + H_2^+$; $He^+ + H_2^+$ $Ne^+ + H$; $Ne^+ + H_2$; $Ne^+ + H_2^+$; $Ne^+ + H_2^+$ $Ar^+ + H$; $Ar^+ + H_2$; $Ar^+ + H_2^+$; $Ar^+ + H_2^+$ $Kr^+ + H$; $Kr^+ + H_2$; $Kr^+ + H_2^+$; $Kr^+ + H_2^+$ $Xe^+ + H$; $Xe^+ + H_2$; $Xe^+ + H_2^+$; $Xe^+ + H_2^+$ $Kr^{2+} + H$; $Kr^{2+} + H_2$; $Kr^{2+} + H_2^+$; $Kr^{2+} + H_2^+$ $Xe^{2+} + H$; $Xe^{2+} + H_2$; $Xe^{2+} + H_2^+$; $Xe^{2+} + H_2^+$</p> | 333 eV | <p>Belauway, H.; Soutson, S.; Coller, H.; Vargo, P.; Fehring, H.; Winter, H. On neutralization of highly charged ions near metal surfaces. IIV ICPAC, Palo Alto, Abstracts, p. 877, Stanford University (1985) France</p> |
| 30377 E | <p>A23: $He^{2+} + H$ A36: $He^{2+} + H$</p> | 1-100 keV | <p>Llorente, J.M.C.; Erga, L. F.; Mendez, L.; Biera, A. A practical criterion to determine translation factors. Application to $He^{2+} + H$ collisions. IIV ICPAC, Palo Alto, Abstracts, p. 879, Stanford University (1985) Spain</p> |
| 30378 E | <p>A36: $He^+ + He$</p> | 3.0-6.5 eV | <p>Larsen, P.; Elkord, E. T. The charge transfer cross section for $He^+(2p, 2s)$ ions in He over the energy range 3.0 to 6.5 eV (LAB). IIV ICPAC, Palo Alto, Abstracts, p. 885, Stanford University (1985) Norway</p> |
| 00079 E | <p>A06: $C^+ + Li$; $N^+ + Li$; $O^+ + Li$</p> | 2-20 keV | <p>Assmy, F.; Lohita, G.; Winter, H. Electron capture from Li(2s) by 2-20 keV C^+, N^+, and O^+. IIV ICPAC, Palo Alto, Abstracts, p. 887, Stanford University (1985) Austria</p> |
| 00080 E | <p>A03: $H^+ + Li$ A36: $H^+ + Li$</p> | 2-20 keV | <p>Assmy, F.; Winter, H. State selective and total electron capture in $H^+ + Li(2s)$ collisions (2-20 keV). IIV ICPAC, Palo Alto, Abstracts, p. 888, Stanford University (1985) Austria</p> |
| 30381 E | <p>A36: $Hg^+ + He$ A18: $Hg^+ + He$</p> | 66.7 keV | <p>Redd, E.; Blankship, B. R.; Seely, D. C.; Coy, T. J.; Peacher, J. L.; Park, J. T. Differential cross sections for 30, 66.7, and 150 keV Hg^+ electron capture from He. IIV ICPAC, Palo Alto, Abstracts, p. 889, Stanford University (1985) United States</p> |
| 30382 E | <p>A36: $H^+ + Na$; $H^+ + Na$; $H^+ + Na$ A37: $H^+ + Na$; $H^+ + Na$; $H^+ + Na$</p> | 15-100 keV/amu | <p>Reis, R. D. Double target ionization resulting from single charge transfer in H^+, He^{2+}- neon, sodium and magnesium collisions. IIV ICPAC, Palo Alto, Abstracts, p. 890, Stanford University (1985) United States</p> |
| 30383 E | <p>A36: $H^+ + H$; $H^+ + H_2$; $C^+ + H$; $O^+ + H$; $F^+ + H$; $F^+ + H_2$; $Ne^{2+} + H$; $Ne^{2+} + H_2$</p> | 3.2-10 keV/amu | <p>Meyer, F. H.; Rowland, A. H.; Baraner, C. C.; Phaneuf, R. A. Low energy electron capture by fully stripped light ions from H and H_2. IIV ICPAC, Palo Alto, Abstracts, p. 891, Stanford University (1985) United States</p> |
| 00084 E | <p>A06: $H^+ + He$</p> | 0-20 keV | <p>Shingal, S.; Mundy, C. H.; Noble, C. J.; Flower, D. R.; Branden, B. H. Charge transfer in $H^+ + He$ collisions. IIV ICPAC, Palo Alto, Abstracts, p. 898, Stanford University (1985) United Kingdom</p> |
| 30385 E | <p>A36: $H^+ + He$ A37: $He^{2+} + He$; $H^+ + He$</p> | 25-100 keV | <p>Iskander, P.; Hoer, D. "Menzelberg Core" in classical trajectory Monte-Carlo calculations of ionization and charge exchange. IIV ICPAC, Palo Alto, Abstracts, p. 895, Stanford University (1985) Israel</p> |
| 30386 E | <p>A36: $Li^{2+} + He$</p> | 0.01-1.0x10 ⁶ cm/s | <p>Opredelce, L.; Falcon, C.; Casanbon, E. Single electron capture in $Li^{2+} + He$ collisions. IIV ICPAC, Palo Alto, Abstracts, p. 896, Stanford University (1985) Argentina</p> |
| 00087 E | <p>A06: $H^+ + He$ A18: $H^+ + He$</p> | 293 keV | <p>Kobayashi, S.; Tomino, H.; Ishihara, T. Rigorous cross sections in proton-helium electron capture processes. IIV ICPAC, Palo Alto, Abstracts, p. 897, Stanford University (1985) Japan</p> |
| 30388 E | <p>A33: $Fe^+ + Fe$</p> | 5-500 keV | <p>Tomper, A.; Ludde, H. J.; Jacob, B.; Dreisler, E. H. 2p-2s vacancy transfer in $Fe^+ + He$ collisions in the energy range of 5-503 keV. IIV ICPAC, Palo Alto, Abstracts, p. 898, Stanford University (1985) West Germany</p> |
| 00089 E | <p>A06: $H^+ + He$; $Li^{2+} + He$</p> | 10-60 keV | <p>Stich, U.; Ludde, H. J.; Dreisler, E. H. Charge transfer in two electron systems in the time dependent Hartree Fock picture. IIV ICPAC, Palo Alto, Abstracts, p. 900, Stanford University (1985) West Germany</p> |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|--------------------|---|
| 00090 F | A33: O ⁹⁺ + He A36: O ⁹⁺ + He | 2.5-80 keV/amu | Fritsch, W.; Lin, C. D. Atomic-orbital expansion representation of electron transfer in two-electron systems. IIV ICPEAC, Palo Alto, Abstracts, p. 502, Stanford University (1985) West Germany |
| 10091 F | A36: Fe ²⁶⁺ + H; Si ¹³⁺ + H | 0.1-200 keV/amu | Koike, F. Continuous energy state model for charge transfer in collisions of fully stripped ions with hydrogen atoms. IIV ICPEAC, Palo Alto, Abstracts, p. 503, Stanford University (1985) Japan |
| 10092 F | A32: h + H; H + C A07: F + H; H ⁺ + H; H + C; H ⁺ + C | 333 keV | Kaninsky, A. K.; Popova, N. I. Angular distributions of ions after fast ion-atom collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 530, Stanford University (1985) Soviet Union |
| 10093 F | A36: O ⁸⁺ + He | 10-60 keV | Hippler, D.; Datz, S.; Miller, P. D.; Pepiller, P. L. Double and single electron capture in 1-2 keV/u O ⁸⁺ + He collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 505, Stanford University (1985) United States |
| 10094 E | A33: S ¹⁶⁺ + Fe A36: S ¹⁶⁺ + Fe | 125 keV | Wetz, E. D.; Hoppler, D. Electron capture cross sections in fast ion-atom collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 530, Stanford University (1985) West Germany |
| 10095 E | A36: S ¹⁶⁺ + He; S ¹⁶⁺ + Ar; Ar ¹⁸⁺ + He; Ca ¹⁹⁺ + He; V ²⁰⁺ + He | 2.2-9.0 keV/amu | Graham, W. C.; Yanis, J. A.; Bernstein, L. R.; Clark, H. R.; McFarland, R. H.; Borjesson, T. J.; Stockli, R. G.; Berkner, K. H.; Pyle, R. V.; Schlachter, A. S.; Skuman, J. V.; Johnson, S. R.; Jones, K. B.; Roron, R. The energy dependence of electron-capture and-loss cross sections in keV/amu, highly-stripped, heavy ion collisions. IIV ICPEAC, Palo Alto, Abstracts, p. 509, Stanford University (1985) United Kingdom |
| 10096 F | A33: Kr ³⁶⁺ + C; Kr ³⁶⁺ + Al; Kr ³⁶⁺ + Ar; Kr ³⁶⁺ + V A36: Kr ³⁶⁺ + C; Kr ³⁶⁺ + Al; Kr ³⁶⁺ + Ar; Kr ³⁶⁺ + V | 35 keV/amu | Fozet, J. P.; Chetoui, A.; Bonisset, P.; Stephan, C. Comparison of electron capture process in gas and solid targets for 35 keV/u Kr ³⁶⁺ ions. IIV ICPEAC, Palo Alto, Abstracts, p. 513, Stanford University (1985) France |
| 10097 F | A36: He ²⁺ + Li | 800-2600 keV | Rukhjeev, S. C.; Ghosh, R.; Soodal, C. B. Single and double electron capture from lithium by fast alpha particle. IIV ICPEAC, Palo Alto, Abstracts, p. 512, Stanford University (1985) India |
| 10098 F | A36: H ⁺ + H; H ⁺ + O | 1.2-15 keV | Rukhjeev, S. C.; Saha, G. C.; Datta, S. Calculation of cross sections for electron capture from multi-electron atoms by fast ions. IIV ICPEAC, Palo Alto, Abstracts, p. 513, Stanford University (1985) India |
| 00099 F | A06: H ⁺ + He A19: H ⁺ + He | 0.1-7.6 keV | Godunov, A. L.; Konikrev, S. D.; Semoshenko, V. S. Calculation of differential charge-transfer cross section in the intermediate and high energy range based on the Faddeev-Merkuriev equations. IIV ICPEAC, Palo Alto, Abstracts, p. 515, Stanford University (1985) Soviet Union |
| 10100 F | A36: H ⁺ + He A10: H ⁺ + Te | 7.6 keV | Alston, S. Theory of electron capture at high energies. IIV ICPEAC, Palo Alto, Abstracts, p. 516, Stanford University (1985) West Germany |
| 10101 F | A36: H ⁺ + H A19: H ⁺ + H H ⁺ + H | 10 keV | Alston, S. Understanding the exact second-order capture cross section. IIV ICPEAC, Palo Alto, Abstracts, p. 517, Stanford University (1985) West Germany |
| 10102 F | A36: H ⁺ + H | 0.01-10 keV | Hirayama, J. E. Radiative electron capture in proton-hydrogen collision. IIV ICPEAC, Palo Alto, Abstracts, p. 531, Stanford University (1985) Argentina |
| 00103 F | C08: Au ⁷⁹⁺ + Au; Au ⁷⁹⁺ + Au | 200-800 keV/amu | Meyerhof, D. E.; Anholt, R.; Thieberger, P.; Wagner, H. E.; Gould, R.; Alonso, J.; Rieger, C. Analysis of charge distributions of relativistic heavy ions penetrating through solid targets. IIV ICPEAC, Palo Alto, Abstracts, p. 537, Stanford University (1985) United States |
| 00104 E | A03: Ar ¹⁸⁺ + H, Ar ¹⁸⁺ Ar ¹⁸⁺ + H ₂ | 66-1306 eV | Sakaura, T.; Kobayashi, N.; Kaneko, T. Ion energy-loss spectroscopy in the collisions of Ar ¹⁸⁺ (sub j) with H ₂ . IIV ICPEAC, Palo Alto, Abstracts, p. 501, Stanford University (1985) Japan |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|-------------------------------------|---|
| 30135 E | A11: Rb ⁺ + N ₂ ; Rb ⁺ + D ₂ ; Rb ⁺ + He | 2.20-2.31 eV | Cavellier, J.; Petitjean, L.; Santog, J. H.; Paillard, B.; de Pujo, P. Quasi-resonant collisional electronic to rotational energy transfer at thermal energies. XIV ICPEAC, Palo Alto, Abstracts, p. 568, Stanford University (1985) France |
| 00106 Y | A17: Ba + N ₂ | Undef | Bossi, F.; Pascale, J. Pseudopotential molecular-structure calculations of alkali-N ₂ systems. XIV ICPEAC, Palo Alto, Abstracts, p. 569, Stanford University (1985) France |
| 00107 E | A04: R ₂ ⁺ + Ar; R ₂ ⁺ + N ₂ A36: R ₂ ⁺ + Ar; R ₂ ⁺ + N ₂ A18: R ₂ ⁺ + Ar; R ₂ ⁺ + N ₂ | 1-5 keV | Alvarez, I.; Cisneros, C.; de Urquijo, J.; Morales, A.; Martinez, R. Dissociative electron capture of R ₂ ⁺ . XIV ICPEAC, Palo Alto, Abstracts, p. 572, Stanford University (1985) Mexico |
| 30130 E | A30: N ₂ ⁺ + He; ND ₂ ⁺ + He; D ₂ ⁺ + He A18: N ₂ ⁺ + He; ND ₂ ⁺ + He; D ₂ ⁺ + He | 3 keV | Cisneros, C.; Alvarez, I.; de Urquijo, J.; Martinez, R.; Bocgan, Y. J. Negative ion formation in polar dissociation of N ₂ ⁺ , ND ₂ ⁺ , and D ₂ ⁺ . XIV ICPEAC, Palo Alto, Abstracts, p. 573, Stanford University (1985) Mexico |
| 00109 E | A06: He ₂ ⁺ + Ar A36: He ₂ ⁺ + Ar C36: He ₂ ⁺ + Ar | 600-800 keV | Huber, D.; Ben Itzhak, I.; Gertner, I.; Hama, A.; Sommer, R. Formation of He ₂ ⁺ and He ₂ ⁺ molecules by charge exchange collisions of He ⁺ ions in the sub-MeV region. XIV ICPEAC, Palo Alto, Abstracts, p. 575, Stanford University (1985) Israel |
| 30110 E | A36: Ar ²⁺ + D ₂ A18: Ar ²⁺ + D ₂ | 2 keV | Martin, S. J.; Heckman, V.; Stevens, J.; Pollack, E. Double electron capture in Ar ²⁺ + D ₂ . XIV ICPEAC, Palo Alto, Abstracts, p. 581, Stanford University (1985) United Kingdom |
| 00111 F | A06: Ar ⁺ + N ₂ | 2.5-13 keV | Kimura, K.; Chapman, S.; Laue, W. F. Electron capture in Li ⁺ + N ₂ and Ar ⁺ + N ₂ collisions in the keV energy region and study of orientation effect of the target molecule. XIV ICPEAC, Palo Alto, Abstracts, p. 582, Stanford University (1985) United States |
| 00112 F | A06: N ⁺ + N ₂ | 0.2-15 keV | Kimura, K. Charge transfer in ion-molecule collisions at the keV energy region: study of N ⁺ + N ₂ collisions. XIV ICPEAC, Palo Alto, Abstracts, p. 583, Stanford University (1985) United States |
| 30113 E | A23: D ₂ ⁺ + Ca; R ₂ ⁺ + Ca; D ₂ ⁺ + Ca; N ₂ ⁺ + Ca | 2.215-2.3 keV/amu | Coggiola, N. J.; Bae, Y. K.; Peterson, J. E. Absolute charge transfer cross sections of 50 eV-3 keV R ⁺ , R ₂ ⁺ , N ₂ ⁺ , S ⁺ , and N ₂ ⁺ in Ca. XIV ICPEAC, Palo Alto, Abstracts, p. 584, Stanford University (1985) United States |
| 00110 E | A16: Cl ⁻ + N ₂ ; Cl ⁻ + O ₂ | 20-100 keV | Hird, B.; Rahman, F. Single and double electron detachment from Cl ⁻ by molecular oxygen and nitrogen. XIV ICPEAC, Palo Alto, Abstracts, p. 595, Stanford University (1985) Canada |
| 00115 F | A03: N ⁺ + Ar ¹⁷⁺ ; He ¹⁰⁺ + Ar ¹⁷⁺ ; Ar ¹⁰⁺ + Ag ¹⁷⁺ | 10 ⁷ -10 ⁸ eV | Welling, R. S.; Weisheit, J. C. Fine-structure excitation in ion-ion collisions. XIV ICPEAC, Palo Alto, Abstracts, p. 611, Stanford University (1985) United States |
| 30116 E | A36: N ⁺ + Al ⁺ ; N ⁺ + Ga ⁺ ; N ⁺ + In ⁺ ; N ⁺ + Tl ⁺ A37: N ⁺ + Al ⁺ ; N ⁺ + Ga ⁺ ; N ⁺ + In ⁺ ; N ⁺ + Tl ⁺ | (7-58) keV | Dunn, K. F.; Watts, H. F.; Angel, J. C.; Gilbody, H. B. Charge transfer and ionization in collisions of protons with Al ⁺ , Ga ⁺ , In ⁺ , and Tl ⁺ ions. XIV ICPEAC, Palo Alto, Abstracts, p. 613, Stanford University (1985) United Kingdom |
| 30117 F | A26: N ⁺ + Li ⁺ A37: N ⁺ + Li ⁺ | 75-350 keV | Reinhold, C. O.; Falcos, C. A. Ionization and charge transfer total cross sections for N ⁺ + Li ⁺ collisions. XIV ICPEAC, Palo Alto, Abstracts, p. 619, Stanford University (1985) Argentina |
| 30118 F | A39: N ⁺ + N ⁻ | 0.4-50 keV (ca) | Ermaolaev, A. N. Theoretical studies of mutual neutralization in p + N ⁻ collisions using model potentials. XIV ICPEAC, Palo Alto, Abstracts, p. 617, Stanford University (1985) United Kingdom |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|--------------------------------|--|
| 04119 F | A9a: He ⁺ + H ⁻ | 2.8-2333 eV | Torao, M.; Chetani, H.; Srna, S.; Arosillard, F. One electron transfer in He ⁺ + H ⁻ collisions into excited states of He ⁺ . XIV ICPEAC, Palo Alto, Abstracts, p. 623, Stanford University (1985) Belgium |
| 04120 F | A11: Ba ⁺ + Ar; Ba ⁺ + Ne; Ba ⁺ + Xe; Pb ⁺ + He | 293 K | Comand, F.; Petitjean, L. The possible influence of core effects in Rydberg atom-neutral collisions at thermal energies. XIV ICPEAC, Palo Alto, Abstracts, p. 625, Stanford University (1985) France |
| 04121 F | E33: e + He + H H3a: He + e + H | 133 eV | Pundir, R. S.; Nathar, K. C. Simultaneous electron photon excitation of hydrogen atom. XIV ICPEAC, Palo Alto, Abstracts, p. 646, Stanford University (1985) India |
| 04122 F | F02: e + He ⁺ | 106-1000 eV | Rao, M. S. Electron-ion (He ⁺) scattering at intermediate and high incident electron energy regions. (E greater than or equal to 133 eV). XIV ICPEAC, Palo Alto, Abstracts, p. 647, Stanford University (1985) India |
| 04123 F | A06: He ⁺ + H; He ²⁺ + H | 10-2x10 ⁶ eV/amu | Anbarov, A. B.; Avakov, G. V.; Blabhinov, L. D.; Sukhamedzhanov, A. B. Charge transfer in ion-atom collisions as the three-body problem. XIV ICPEAC, Palo Alto, Abstracts, p. 695, Stanford University (1985) Soviet Union |
| 04124 F | A20: He ⁺ + Ar | 2.5-60 keV | King, M.; Wang, L.; Morgan, T. J. Evidence for independent particle behavior in fast Rydberg hydrogen atom collisions with neutral atoms and molecules. XIV ICPEAC, Palo Alto, Abstracts, p. 736, Stanford University (1985) United States |
| 04125 F | F05: e + Yb | 5-300 eV | Ali, M. M.; Volovich, P. B.; Ovrhinnikov, V. L.; Shinos, L. L. Ionization cross section of ytterbium atoms by electron impact. XIV ICPEAC, Palo Alto, Abstracts, p. 737, Stanford University (1985) Soviet Union |
| 04126 F | F03: e + K | 0.5-50 keV | Zapozhny, I. P.; Yakstich, V. S.; Solomon, A. M. K-resonance investigation by electron bombardment of free potassium atoms. XIV ICPEAC, Palo Alto, Abstracts, p. 738, Stanford University (1985) Soviet Union |
| 04127 F | F06: Structure multiply charged ions | | Janev, R. K.; Presnyakov, L. P.; Shevelko, V. P. Structure and spectra of highly charged ions. p. 7 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |
| 04128 F | F32: Dielectronic recombination | | Janev, R. K.; Presnyakov, L. P.; Shevelko, V. P. Dielectronic recombination p. 84 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York (1985) Yugoslavia |
| 04129 F | F32: Excitation | | Janev, R. K.; Presnyakov, L. P.; Shevelko, V. P. Electron collisions with highly charged ions: general theory and excitation processes. p. 55 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |
| 04130 F | F32: Ionization | | Janev, R. K.; Presnyakov, L. P.; Shevelko, V. P. Electron-impact ionization of highly charged ions. p. 78 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |
| 04131 F | F31: Charge exchange | | Janev, R. K.; Presnyakov, L. P.; Shevelko, V. P. Collisions of atoms (ions, molecules) with highly charged ions: charge-transfer processes. p. 150 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |
| 04132 F | F31: Excitation | | Janev, R. K.; Presnyakov, L. P.; Shevelko, V. P. Collisions of atoms (ions) with highly charged ions: excitation and ionization. p. 170 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |
| 04133 F | F31: Ionization | | Janev, R. K.; Presnyakov, L. P.; Shevelko, V. P. Single-electron ionization. p. 131 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|---|---------------|---|
| 00134 F | Z01: Electron ions; Stripping | | Janev, S. K.; Presnyakov, L. P.; Shevelko, V. P. Electron ions and stripping processes. p. 200 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |
| 00135 | V31: Inner shell processes | | Janev, S. K.; Presnyakov, L. P.; Shevelko, V. P. Inner-shell and related processes. p. 253 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York (1985) Yugoslavia |
| 00136 F-T | J32: Rate coefficients | | Janev, S. K.; Presnyakov, L. P.; Shevelko, V. P. Electron-impact excitation. p. 180 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |
| 00137 | J32: Ionization | | Janev, S. K.; Presnyakov, L. P.; Shevelko, V. P. Electron-impact ionization. p. 293 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York (1985) Yugoslavia |
| 00138 | J32: Dielectronic recombination | | Janev, S. K.; Presnyakov, L. P.; Shevelko, V. P. Dielectronic recombination. p. 331 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York (1985) Yugoslavia |
| 00139 F-T | J31: Rate coefficients | | Janev, S. K.; Presnyakov, L. P.; Shevelko, V. P. Charge transfer p. 375 in Physics of Highly Charged Ions, G. Ecker, Ed. Springer-Verlag, New York, (1985) Yugoslavia |
| 00140 F | A36: CH ₂ ⁺ + He ₂ ; C ₂ H ⁺ + CH ₂ ; H ₂ ⁺ + He ₂ ; O ₂ ⁺ + He ₂ ; H ₂ O ₂ ⁺ + He ₂ ; H ₂ O ⁺ + He ₂ ; NH ₂ ⁺ + He ₂ ; CH ₃ ⁺ + He ₂ | 0.32 eV | Kadomtsev, N. B.; Seirnov, B. M. Collisions of ions with diatomic molecules. High Temp. 23, 15 (1985) Soviet Union |
| 00141 | E30: Surface excitation by electrons | | Broeris, P.; Demuth, J. Electron energy loss spectroscopy in the study of surfaces. Ann. Rev. Phys. Chem. 35, 99 (1984) United States |
| 00142 | A10: Review K01: Excited state ion-molecule | | Luong, S. B. State-resolved molecular reaction dynamics. Ann. Rev. Phys. Chem. 35, 139 (1984) United States |
| 00143 | D13: Review K04: Electron and photon excitation | | Maley, T. E.; Hauxner, D. E.; Stockbauer, R. Characterization of surfaces through electron and photon stimulated desorption. Ann. Rev. Phys. Chem. 35, 215 (1984) United States |
| 00144 F | V35: e + Ar E06: e + Ar ⁺ | 2500-12500 eV | Vicak, J.; Ferdinand, J. Collisional-radiative recombination in argon plasma. Beitr. Plasmaphys. Czechoslovakia |
| 00145 F | E35: e + Ar ⁺ ; e + CH ₂ ⁺ ; e + C ₂ H ₂ ⁺ | 10-1000 eV | Deutsch, H.; Schmidt, H. On the quantitative determination of cross sections of ionization of molecules by electronic collisions. Beitr. Plasmaphys. 20, 475 (1980) West Germany |
| 00146 E | A10: H + O ₂ ; OH + H ₂ | 1700-2500 K | Frank, P.; Just, T. High temperature reaction rate for H + O ₂ + OH + O and OH + H ₂ + H ₂ O + H. Ber. Bunsen. Ges. Phys. Chem. 89, 741 (1985) West Germany |
| 00147 E | H32: hv + Sb; hv + Sn; hv + Zn; hv + V; hv + Y | 50-136 keV | Seneel, S.D.R.; Prenchaud, K.; Rao, B. N.; Parthasarathi, K. Total photo cross sections in elements. Indian J. Phys. A 56, 67 (1984) India |
| 00148 F | J04: Au ⁺ + Si; In ⁺ + Si; Sb ⁺ + Si; Te ⁺ + Si; Cu ⁺ + Si; Au ⁺ + Si; Bi ⁺ + Si; Pb ⁺ + Si; Tl ⁺ + Si; Pt ⁺ + Si; H ⁺ + Si | 0.6-90 keV | Gupta, S. N.; Bhattacharya, P. K. Empirical description of shell-effects in low energy heavy-ion ranges in semiconductors. Indian J. Phys. A 56, 227 (1984) India |
| 00149 E | D12: e + Cu; e + Cd; e + Ta; e + Pb | 00-500 keV | Shivaram External bremsstrahlung generated by the complete absorption of beta particles in thick targets. Indian J. Phys. A 56, 265 (1984) India |
| 00150 F | D12: e + Cu; e + Ni; e + Ag; e + Cd; e + I; e + Pb | 0.3-2.27 MeV | Redrajan B.; Gopala, K.; Sanjivrajah, N. Yield constants of external bremsstrahlung (EB) excited by beta particles of ⁹⁰ Sr, ⁹⁰ Y and ⁹⁰ Tl in thick targets of different Z materials. Indian J. Phys. A 56, 276 (1984) India |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|------------------------|--|
| 30151 F | C30: e • Li; e • Ti; e • Sn; e • Pt; e • V; e • Si; e • Ge; e • Ag; e • Cd; e • Pb | 3.35-1333 keV | Fai, F. B.; Gupta, S. K.; Varsheya, V. P.; Gupta, D. K. Continuum-slowing-down-approximation range of electrons for the energy range 3.35-1333 keV. Indian J. Pure Appl. Phys. 23, 203 (1985) India |
| 30152 | R01: Dissociation; Excitation R02: Excitation | | Levner, E.; Schwarz, H. Gas-phase chemistry of collisionally active ions. Mass Spectrom. Rev. 2, 77 (1983) West Germany |
| 00153 F | A10: CH • O ₂ ; O • OH R01: Chemical reaction rate constants | 25-257 eV | Clary, D. C. Rates of chemical reactions dominated by long range intermolecular forces. Mol. Phys. 53, 1 (1980) United Kingdom |
| 00154 F | R02: hv • H ₂ | 3-223 cm ⁻¹ | Joslin, C. G.; Gray, C. G.; Gburecki, U. Far-infrared absorption in nitrogen gas. A theoretical study. Mol. Phys. 53, 23 (1980) Canada |
| 00155 F | A17: He • He; Li ⁺ • He | Undef | Tateishi, H.; Tanaka, H.; Onno, T.; Nakamura, T. The interaction potential for He-He and He • Li ⁺ . Vol. Phys. 51, 233 (1980) Japan |
| 30156 F | E35: e • He; e • Li ⁺ | Undef | Mohanty, J. P.; Singh, C. S.; Rai, D. K. The effect of exchange in autoionization processes. Pramana 25, 175 (1985) India |
| 30157 F | E36: e • Si ⁰⁺ ; e • Si ¹⁺ ; e • Si ²⁺ ; e • Si ³⁺ ; e • Si ⁴⁺ ; e • Si ⁵⁺ ; e • Si ⁶⁺ ; e • Si ⁷⁺ ; e • Si ⁸⁺ ; e • Fe ⁰⁺ ; e • Fe ¹⁺ ; e • Fe ²⁺ ; e • Fe ³⁺ ; e • Fe ⁴⁺ ; e • Fe ⁵⁺ ; e • Fe ⁶⁺ ; e • Fe ⁷⁺ ; e • Fe ⁸⁺ ; e • Fe ⁹⁺ ; e • Fe ¹⁰⁺ ; e • Fe ¹¹⁺ ; e • Fe ¹²⁺ ; e • Fe ¹³⁺ ; e • Fe ¹⁴⁺ ; e • Fe ¹⁵⁺ ; e • Fe ¹⁶⁺ ; e • Fe ¹⁷⁺ ; e • Fe ¹⁸⁺ ; e • Fe ¹⁹⁺ ; e • Fe ²⁰⁺ ; e • Fe ²¹⁺ ; e • Fe ²²⁺ | 130 eV | Alar, B.; Asari, S.H.B. Role of the Gaunt factor in the derivation of dielectronic recombination coefficient. Solar Phys. 96, 119 (1985) India |
| 30158 F | E31: Undef | Undef | Berk, A.; Tenkin, A. Sum rules and other properties involving resonance projection operators. Phys. Rev. A 32, 3196 (1985) United States |
| 30159 F | E32: e • He | 3.1-3.7 a.u. | Feagin, J. M.; Rucek, J.; Starace, A. F. Use of the Fock expansion for ψ -state wave functions of two-electron atoms and ions. Phys. Rev. A 32, 3219 (1985) United States |
| 00160 F | R01: Undef | Undef | Friedrich, H.; Wintjes, D. Interfering resonances and bound states in the continuum. Phys. Rev. A 32, 3231 (1985) West Germany |
| 00161 E | A06: Fe ⁰⁺ • He; Fe ¹⁺ • Al; Fe ²⁺ • Cu; Fe ³⁺ • Ag; Fe ⁴⁺ • Au; Fe ⁵⁺ • H; Fe ⁶⁺ • Be; Fe ⁷⁺ • Al; Fe ⁸⁺ • Cu; Fe ⁹⁺ • Ag; Fe ¹⁰⁺ • Au; Fe ¹¹⁺ • H; Fe ¹²⁺ • Be; Fe ¹³⁺ • Al; Fe ¹⁴⁺ • Cu; Fe ¹⁵⁺ • Ag; Fe ¹⁶⁺ • Au; Fe ¹⁷⁺ • H | 42-200 keV/amu | Meyerhof, W. E.; Anholt, B.; Eichler, J.; Gould, M.; Munger, C.; Alonso, J.; Thiesberger, P.; Wegner, H. E. Atomic collisions with relativistic heavy ions. III. Electron capture. Phys. Rev. A 32, 3291 (1985) United States |
| 30162 E | A78: Fe ⁰⁺ • Be; Fe ¹⁺ • Al; Fe ²⁺ • Cu; Fe ³⁺ • Ag; Fe ⁴⁺ • Au; Fe ⁵⁺ • H; Fe ⁶⁺ • Be; Fe ⁷⁺ • Al; Fe ⁸⁺ • Cu; Fe ⁹⁺ • Ag; Fe ¹⁰⁺ • Au; Fe ¹¹⁺ • H | 42-200 keV/amu | Anholt, B.; Meyerhof, W. E.; Gould, M.; Munger, C.; Alonso, J.; Thiesberger, P.; Wegner, H. E. Atomic collisions with relativistic heavy ions. IV. Projectile K-shell ionization. Phys. Rev. A 32, 3302 (1985) United States |
| 30163 E | A76: C ⁰⁺ • H; C ¹⁺ • H ₂ ; C ²⁺ • H; C ³⁺ • H ₂ ; C ⁴⁺ • H; C ⁵⁺ • H ₂ ; C ⁶⁺ • H; C ⁷⁺ • H ₂ ; C ⁸⁺ • H; C ⁹⁺ • H ₂ ; C ¹⁰⁺ • H; C ¹¹⁺ • H ₂ ; C ¹²⁺ • H; C ¹³⁺ • H ₂ ; C ¹⁴⁺ • H; C ¹⁵⁺ • H ₂ ; C ¹⁶⁺ • H; C ¹⁷⁺ • H ₂ ; C ¹⁸⁺ • H; C ¹⁹⁺ • H ₂ ; C ²⁰⁺ • H; C ²¹⁺ • H ₂ | 0.19-0.5 keV/amu | Meyer, F. W.; Novak, A. M.; Havener, C. C.; Phaneuf, B. A. Low-energy total-electron-capture cross sections for fully stripped and H-like projectiles incident on H and H ₂ . Phys. Rev. A 32, 3310 (1985) United States |
| 00164 C | A06: H ⁺ • Li; H ²⁺ • Li; He ⁺ • Li A37: He • Li; He ²⁺ • Li; He ³⁺ • Li | 15-233 keV | Dubois, P. D. Charge transfer and ionization of lithium by protons and helium ions. Phys. Rev. A 32, 3319 (1985) United States |
| 30165 F | R01: Undef | | Wayfeh, M. H.; Hillier, G. W.; Lieb, V. L. Electric field enhancement of depolarization of excited states. Phys. Rev. A 32, 3326 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|---------------------|---|
| 30166 I | E32: e + Ar E17: e + Ar E13: e + Ar | 1-23 eV | Dangupta, A.; Bhatia, A. K. Scattering of electrons from argon atoms. <i>Phys. Rev. A</i> 32, 3335 (1985) United States |
| 30167 C | E33: e + Na; e + Na ⁺ | 1-1000 eV | Stumpf, R.; Colloher, A. Electron excitation of Na(3S) and Na(3P) atoms to the Na(3D) state. <i>Phys. Rev. A</i> 32, 3348 (1985) United States |
| 30168 F | E33: e + N ₂ E06: e + N ₂ | 15-100 eV | Redmon, K. J.; Garrett, B. C.; Redmon, L. T.; McCurdy, C. W. Improved impact-parameter method for electronic excitation and dissociation of diatomic molecules by electron impact. <i>Phys. Rev. A</i> 32, 3354 (1985) United States |
| 30169 F | E33: e + O ₂ E06: e + O ₂ | 0-25 eV | Garrett, B. C.; Redmon, L. T.; McCurdy, C. W.; Redmon, K. J. Electronic excitation and dissociation of O ₂ and S ₂ by electron impact. <i>Phys. Rev. A</i> 32, 3366 (1985) United States |
| 30170 I | E33: e + Ar ¹⁷⁺ ; e + Ar ¹⁶⁺ ; e + Ar ¹⁵⁺ E36: e + Ar ¹⁷⁺ ; e + Ar ¹⁶⁺ ; e + Ar ¹⁵⁺ | 3.5-7.3 keV | Jacobs, V. L.; Rogerson, J. E.; Chen, B. H.; Cove, B. B. Effects of angular-momentum-changing electron collisions and radiative corrections on dielectronic satellite spectra. <i>Phys. Rev. A</i> 32, 3382 (1985) United States |
| 30171 E | E36: hν + Xe E36: hν + Xe | 055-035 au | Dannay, M.; Laporte, P.; Sabil, J. L.; Dannay, R. Multiphoton excitation and decay processes in xenon: off-breakdown and breakdown emission at sensitivities up to 1.0x10 ⁻¹² above cm ⁻² . <i>Phys. Rev. A</i> 32, 3418 (1985) France |
| 30172 I | E31: e | | Fajans, J.; Kirkpatrick, D. A.; Behafi, G. Off-axis electron orbits in resonant helical wigglers for free-electron-laser applications. <i>Phys. Rev. A</i> 32, 3448 (1985) United States |
| 00173 F | E01: hν + D ₂ ; hν + N ₂ ; hν + He | 700-058 au | Mirzahi, V.; Shelton, D. P. Nonlinear susceptibility of N ₂ and D ₂ accurately measured over a wide range of wavelengths. <i>Phys. Rev. A</i> 32, 3454 (1985) Canada |
| 00174 F | E06: Jadef | Undef | Benda, J. A.; Gauthier, D. J.; Boyd, D. B. Transient sub-frequency generation in resonant three-level media. <i>Phys. Rev. A</i> 32, 3461 (1985) United States |
| 30175 E-I | E36: hν + Na | 569) A ⁰ | Beach, R.; DeBoer, D.; Hartsman, J. R. Time-delayed four-wave mixing using intense incoherent light. <i>Phys. Rev. A</i> 32, 3467 (1985) United States |
| 30176 F | E31: Uadef E06: Uadef | Undef | Hazak, Z.; Strauss, M.; Oreg, J. Strong laser-atom interaction in the presence of jump-process type noise: the Bouquet approach. <i>Phys. Rev. A</i> 32, 3475 (1985) Israel |
| 00177 F | E06: hν + Al ¹³⁺ | 3.1-10 keV | Salmassi, D.; Yin, B. Y.; Pratt, B. N. Comparison between average-atom and detailed-configuration-type calculations of the photoionization cross sections of hot and dense aluminum plasmas. <i>Phys. Rev. A</i> 32, 3627 (1985) United States |
| 00178 E | A03: H ⁺ + Pb A.7: H ⁺ + Pb | 240-000 keV | Robab, R.; Bismette, B.; Innes, P. W. L-shell x-ray-production cross sections in lead by proton bombardment (200-800 keV). <i>Phys. Rev. A</i> 32, 3739 (1985) United States |
| 30179 L | E31: 2hν + Na; 2hν + K E06: 2hν + Na; 2hν + K | E06: 577-081 au | Tersaka, T.; Sato, Y.; Hershani, J. Multiphoton ionization of Na and K in a sodant electric field. <i>Phys. Rev. A</i> 32, 3742 (1985) Japan |
| 30180 E | E33: e + Mg ⁺ | 15-100 eV | Hezane, A. Z.; Henry, R.J.W. Generalized oscillator strengths for the 3s ² S - 3p ² P transition in Mg II. <i>Phys. Rev. A</i> 32, 3778 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|-----------------|--|
| 70181 F | E22: undef | Undef | Reason, J. L.; Ritchie, R. K. Recoil in electron-atom scattering. Phys. Rev. A 32, 3782 (1985) United States |
| 70182 F | F35: $e + H_2$ | Undef | Liu, J. W. Discrepancy between theory and experiment for noncoplanar symmetric ($\pi, 2\pi$) ionization profiles of $H_2[{}^2\Sigma(\text{sub } g)^+]$. Phys. Rev. A 32, 3784 (1985) Canada |
| 70183 E | F06: $h\nu + Xe$ | 1.17 eV | Esapert, H. J.; Schmier, H.; Happler, S.; Latz, H. O. Angular distribution of photoelectrons from above-threshold ionization of Xe. Phys. Rev. A 32, 3787 (1985) West Germany |
| 00180 E | H06: $h\nu + SO$ | 453.4-453.2 nm | Garrett, F. M.; Ferrell, W. B.; Haller, J. C.; Payne, S. G. σ Stark shifts in resonant multiphoton ionization of nitric oxide. Phys. Rev. A 32, 3793 (1985) United States |
| 00185 E | H04: $h\nu + Ba$ | 455 nm | Sander, W.; Ruff, G. A.; Lanje, V.; Eichmann, U. Laser-spectroscopic investigation and detection of Rydberg atoms by off-resonant core excitation. Phys. Rev. A 32, 3794 (1985) West Germany |
| 00186 F | H04: $h\nu + Sr$ | 576-562 nm | Agostini, P.; Petráš, G. Electron spectroscopy at thresholds in single and double multiphoton ionization of strontium. Phys. Rev. A 32, 3833 (1985) France |
| 00187 F | H05: $h\nu + Al$; $h\nu + Cu$; $h\nu + Fe$ | 0.00-0.06 MeV | Gol'din, N. L.; Tarbenko, V. D. Evaluation of the characteristics of the emission of secondary electrons from a metal bombarded by photons with energies in the range 0.35-1.3 MeV. Sov. At. Energy 58, 141 (1985) Soviet Union |
| 70188 E-F | A33: $H^+ + Ar$ | 3-55 eV | Orjantsov, G. B.; Nikoushin, V. N.; Plaks, I. F.; Sarjysan, S. G. Molecular-orbital mechanism for the formation of autoionization states by proton impact. Sov. Tech. Phys. Lett. 11, 273 (1985) Soviet Union |
| 70189 E | A37: $Li^+ + Li$ | 3.32 eV | Zagrebin, S. B.; Samson, A. V. Impact ionization in a beam of lithium atoms. Sov. Tech. Phys. Lett. 11, 283 (1985) Soviet Union |
| 70190 E | E33: $e + Bi$; $e + Bi^+$; $e + Bi^{2+}$ | 3-250 eV | Smirnov, Y. N. Electron-impact excitation of forbidden transitions of bismuth. Sov. Tech. Phys. Lett. 11, 287 (1985) Soviet Union |
| 70191 | R31: Review R02: Review | | Silver, J. D.; Peacock, B. J. Editors of The Physics of Highly Ionized Atoms (Proceedings of the International Conference on the Physics of Highly Ionized Atoms, Oxford, England, July 2-5, 1984) North-Holland, Amsterdam, Nucl. Instrum. Methods Phys. Res. B Vol. 9 No. 4 (1985) United Kingdom |
| 70192 F | E35: $e + Be \text{ Seq}$; $e + Yb^{2+}$ F36: $e + Be \text{ Seq}$; $e + Yb^{2+}$ | Undef | Safonova, O. I.; Vainshtein, L. A. Intensities of dielectronic satellites of Be-like ions. Nucl. Instrum. Methods Phys. Res. B 9, 359 (1985) Soviet Union |
| 70193 F | A33: Undef A36: Undef | Undef | Barat, N. Electron capture by low energy multicharged ions. Nucl. Instrum. Methods Phys. Res. B 9, 364 (1985) France |
| 00194 F | A03: $He^{2+} + H_2$; $He^{3+} + H$ A36: $He^{2+} + H_2$; $He^{3+} + H$ | Undef | Chetoui, A.; Verhaet, D.; Mohrer, K.; Borot, J. P.; Salin, A.; Stephan, C. Charge exchange collisions involving highly stripped ions: distribution and anisotropy of final state angular momenta. Nucl. Instrum. Methods Phys. Res. B 9, 368 (1985) France |
| 70195 E | A33: $He^{2+} + H_2$; $He^{3+} + He$; $Al^{10+} + H$, A36: $He^{2+} + H_2$; $He^{3+} + He$; $Al^{10+} + H$ | 7.2-3.4 a.u. | Blinov, S.; Bonnet, J. J.; Bordenave-Montesquieu, A.; Dousson, S.; Druetta, M.; Hatt, D.; Mayo, N. Radiative decay following low energy charge exchange collisions at the Agrippa facility. Nucl. Instrum. Methods Phys. Res. B 9, 371 (1985) France |
| 70196 E | A33: $He^{2+} + Li$ A36: $He^{2+} + Li$ | 3.55-13 keV/amu | Dijkkamp, D.; Boellaard, A.; de Meer, F. J. Single electron capture in slow $He^{2+} + Li$ collisions. Nucl. Instrum. Methods Phys. Res. B 9, 377 (1985) The Netherlands |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|---|----------------|---|
| 30197 E | A33: Ni ⁺ + Fe A07: Ni ⁺ + Fe | 233 keV | Chen, J. F.; Andriau, S.; Coetz, R.; Thibaud, J. P.; Aguer, P.; Kanauchi, F.; Strauder, J. P. Measurement of the ionization probability of the 1s sigma molecular orbital in half a collision at zero impact parameter. Nucl. Instrum. Methods Phys. Res. B 9, 302 (1985) France |
| 00198 E | *05: e + Ar ⁺ | 20-950 eV | Becher, R.; Muller, A.; Achenbach, C.; Firschart, K.; Salzborn, E. A dense electron target for the study of electron-ion collisions. Nucl. Instrum. Methods Phys. Res. B 9, 305 (1985) West Germany |
| 30199 E | A33: N ⁺ + He; N ⁺ + N ₂ ; N ⁺ + N ₂ ⁺ A36: N ⁺ + He; N ⁺ + N ₂ ; N ⁺ + He; N ⁺ + N ₂ | 63-71.5 keV | Bordeneuve-Montegiesse, A.; Benoit-Cattin, P.; Gleizes, A.; Harauchi, R. I.; Dousson, S.; Witz, D. Experimental cross sections for two-electron capture into nitrogen autoionizing states in F(2p ²) (q = 6, 7) on He and N ₂ collisions at 13.5 keV. Nucl. Instrum. Methods Phys. Res. B 9, 309 (1985) France |
| 00200 E | A03: Ca ⁺ + H A36: Ca ⁺ + H | 86 keV | Dube, L. J.; Burgdickfer, J. Electron capture into Rydberg states in collisions between multiply charged ions and hydrogen. Nucl. Instrum. Methods Phys. Res. B 9, 392 (1985) West Germany |
| 30201 E | A33: Ar ⁺ + Ar; Ar ²⁺ + Ar; Ar ³⁺ + Ar; Ar ⁴⁺ + Ar; Ar ⁵⁺ + Ar A36: Ar ⁺ + Ar; Ar ²⁺ + Ar; Ar ³⁺ + Ar; Ar ⁴⁺ + Ar; Ar ⁵⁺ + Ar A37: Ar ⁺ + Ar; Ar ²⁺ + Ar; Ar ³⁺ + Ar; Ar ⁴⁺ + Ar; Ar ⁵⁺ + Ar | 7.2-10.0 keV | Berany, A.; Astner, G.; Cedergvist, N.; Banaard, H.; Hult, S.; Hvelplund, P.; Johanson, A.; Kaudern, E.; Liljebj, L.; Sandstr, K. G. Absolute cross sections for multi-electron processes in low energy Ar(q) + Ar collisions: comparison with theory. Nucl. Instrum. Methods Phys. Res. B 9, 397 (1985) Sweden |
| 30202 E | E35: e + Y ⁺ ; e + Y ²⁺ | 90-2500 eV | Defrance, P.; Chaatrenne, S.; Broillart, Y.; Bachafi, S.; Belic, D. S.; Jureta, J.; Gregory, D. Electron impact ionization of Y ⁺ and Y ²⁺ . Nucl. Instrum. Methods Phys. Res. B 9, 433 (1985) Belgium |
| 00203 E | A03: Ca ⁺ + H; Ca ²⁺ + H; Y ⁺ + H A36: Ca ⁺ + H; Ca ²⁺ + H; Y ⁺ + H | 8.6-50 keV | Dijkamp, D.; Citric, D.; de Meer, F. J.; Vlieg, E. (n,l)-subshell electron capture cross sections in collisions of Ca ⁺ , Y ⁺ , and Ca ²⁺ with atomic hydrogen. Nucl. Instrum. Methods Phys. Res. B 9, 433 (1985) The Netherlands |
| 30204 E-I | A33: Ca ⁺ + N ₂ ; Ca ²⁺ + He A36: Ca ⁺ + N ₂ ; Ca ²⁺ + He | 2-5 keV | Dube, L. J.; Will, H.; Bruch, B.; Trabert, K.; Hochhaus, P. H. Theory and experiment of electron capture in collisions of multiply charged projectiles with light targets. Nucl. Instrum. Methods Phys. Res. B 9, 478 (1985) West Germany |
| 30205 E | A33: Ca ⁺ + H; N ⁺ + H; O ⁺ + H A36: Ca ⁺ + H; N ⁺ + H; O ⁺ + H | 3.2-13 keV/amu | Gayet, R.; Rasmussen, J.; Harel, C.; Salia, A. Electron capture from atomic hydrogen in the keV/amu energy range. Nucl. Instrum. Methods Phys. Res. B 9, 413 (1985) Italy |
| 30206 E | A33: Ar ⁺ + He; Ar ²⁺ + Ar; Ar ³⁺ + Ar; Ar ⁴⁺ + He; Ar ⁵⁺ + Ar; Ar ⁶⁺ + He A36: Ar ⁺ + He; Ar ²⁺ + Ar; Ar ³⁺ + Ar; Ar ⁴⁺ + He; Ar ⁵⁺ + Ar; Ar ⁶⁺ + He | 800-600 eV | Puerta, J.; Kahlert, H. J.; Koslovski, H. P.; Huber, P. A. Single electron capture by state-selected multiply charged Ar(q) ions (q = 1-6). Nucl. Instrum. Methods Phys. Res. B 9, 415 (1985) West Germany |
| 30207 E | A33: Ar ⁺ + He; Ar ²⁺ + Ar; Ar ³⁺ + He; Ar ⁴⁺ + He; Ar ⁵⁺ + Ar; Ar ⁶⁺ + He; Ar ⁺ + He; Ar ²⁺ + Ar; Ar ³⁺ + He; Ar ⁴⁺ + He; Ar ⁵⁺ + Ar; Ar ⁶⁺ + He; Ar ⁺ + He; Ar ²⁺ + Ar; Ar ³⁺ + He; Ar ⁴⁺ + He; Ar ⁵⁺ + Ar; Ar ⁶⁺ + He; Ar ⁺ + He; Ar ²⁺ + Ar; Ar ³⁺ + He; Ar ⁴⁺ + He; Ar ⁵⁺ + Ar; Ar ⁶⁺ + He | 1 keV | Hvelplund, P.; Andersen, L. H.; Berany, A.; Cedergvist, N.; Hvelplund, P.; Kaudern, E.; Sandstr, K. S.; Nielsen, E. H.; Sorensen, J. Energy-resolved spectroscopy studies of state-selective electron capture for multiply charged Ar recoil ions: comparison with the extended classical barrier model. Nucl. Instrum. Methods Phys. Res. B 9, 421 (1985) Denmark |
| 30208 E | A36: Xe ⁺ + Xe A37: Xe ⁺ + Xe | 100 keV | Schuch, R.; Muller, A.; Salzborn, E.; Dousson, S.; Witz, D.; Geller, R. Transfer ionization with bare 100 keV Xe ⁺ ions colliding with noble gas atoms. Nucl. Instrum. Methods Phys. Res. B 9, 426 (1985) West Germany |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|----------------|--|
| 00209 E | A07: C ²⁺ + Ar; C ²⁺ + Ne; C ²⁺ + He; C ³⁺ + Ar; C ³⁺ + Ne; C ³⁺ + He; C ⁴⁺ + Ar; C ⁴⁺ + Ne; C ⁴⁺ + He; C ⁵⁺ + Ar; C ⁵⁺ + Ne; C ⁵⁺ + He; C ⁶⁺ + Ar; C ⁶⁺ + Ne; C ⁶⁺ + He; Ar ¹⁰⁺ + Ar; Ar ¹⁰⁺ + Ne; Ar ¹⁰⁺ + He; Ar ¹²⁺ + Ar; Ar ¹²⁺ + Ne; Ar ¹²⁺ + He; Ar ¹⁴⁺ + Ar | 1.35 MeV/amu | Tomma, T.; Oe, S. H.; Kanagai, M.; Shibata, M.; Kano, M.; Gotohara, T.; Kohno, I.; Tawara, H. Ionization of Ne, He, and Ar atoms by 1.35 MeV/amu C (sup q) ⁺ (q = 2-6) and Ar (sup q) ⁺ (q = 4-10) ion impact. Nucl. Instrum. Methods Phys. Res. B 9, 929 (1985) Japan |
| 00210 E | A36: I ¹⁰⁰⁺ + He; I ¹²⁰⁺ + He; I ¹⁴⁰⁺ + He; I ¹⁶⁰⁺ + He; I ¹⁸⁰⁺ + He; I ²⁰⁰⁺ + He; I ²²⁰⁺ + He; I ²⁴⁰⁺ + He; I ²⁶⁰⁺ + He; I ²⁸⁰⁺ + He; I ³⁰⁰⁺ + He; I ³²⁰⁺ + He; I ³⁴⁰⁺ + He; I ³⁶⁰⁺ + He; I ³⁸⁰⁺ + He; I ⁴⁰⁰⁺ + He; I ⁴²⁰⁺ + He; I ⁴⁴⁰⁺ + He; Kr ⁷⁰⁺ + He; Kr ⁸⁰⁺ + He; Kr ⁹⁰⁺ + He; Kr ¹⁰⁰⁺ + He; Kr ¹¹⁰⁺ + He; Kr ¹²⁰⁺ + He; Kr ¹³⁰⁺ + He; Kr ¹⁴⁰⁺ + He; Kr ¹⁵⁰⁺ + He; Kr ¹⁶⁰⁺ + He; Kr ¹⁷⁰⁺ + He; Kr ¹⁸⁰⁺ + He | 7.5-100 keV | Tawara, H.; Iwai, T.; Kaneko, Y.; Kinoshita, M.; Kobayashi, M.; Matsunoto, A.; Ohtani, S.; Okubo, K.; Takagi, S.; Tsurubachi, S. Electron capture in I (sup q) ⁺ (q = 10-61) + He collisions at low energies. Nucl. Instrum. Methods Phys. Res. B 9, 832 (1985) Japan |
| 00211 F | A33: H ³⁺ + H A36: H ³⁺ + H | 0.006-0.25 eV | Thylse, K. W.; Barany, A. A semi-classical analysis of orbiting resonances in slow charge transfer processes. Nucl. Instrum. Methods Phys. Res. B 9, 835 (1985) Sweden |
| 00212 E | A33: C ²⁺ + He A37: C ²⁺ + He | 2-5 MeV | Bruch, H.; Kochbach, L.; Frubert, E.; Hecksmann, P. H.; Raith, B.; Will, U. He ⁺ (sup q) cross sections for 2, 3, 4, and 5 MeV C ²⁺ ions colliding with He atoms. Nucl. Instrum. Methods Phys. Res. B 9, 838 (1985) United States |
| 00213 E | A33: C ²⁺ + Li; C ²⁺ + He; C ³⁺ + Li; C ³⁺ + Li; C ³⁺ + He; C ⁴⁺ + Li; C ⁴⁺ + Li; C ⁴⁺ + He A36: C ²⁺ + Li; C ²⁺ + He | 20-120 keV | Braxuk, A.; Winter, H.; Dijkamp, D.; de Heer, F. J.; Drentje, A. G. Subshell-selective electron capture from lithium by slow multiply charged ions. Nucl. Instrum. Methods Phys. Res. B 9, 842 (1985) Austria |
| 00214 F | A36: Undef | Undef | Heil, T. G.; Bottrell, G. J.; Bottcher, C. Molecular theory of atomic collisions: a generalized perturbed stationary states approach. Nucl. Instrum. Methods Phys. Res. B 9, 848 (1985) United States |
| 00215 F | A07: Ne ¹⁰⁺ + He; Ne ¹²⁺ + He; Ar ¹⁰⁺ + He; Ar ¹²⁺ + He | 5.5 MeV/amu | Kadar, I.; Rics, S.; Shchegolev, V. A.; Gulik, B.; Varga, D.; Vagh, J.; Borenyik, D.; Koch, G. Auger electron spectra in 5.5 MeV/amu Ne (sup 10) ⁺ and Ar (sup 12) ⁺ ion impact on He. Nucl. Instrum. Methods Phys. Res. B 9, 851 (1985) Soviet Union |
| 00216 F | A33: He ²⁺ + Li A36: He ²⁺ + Li A37: He ²⁺ + Li | 0.2-1000 keV | Krasov, I. N.; Hewitt, R. N. An L ² representation of the continuum in collisions between alpha particles and lithium atoms. Nucl. Instrum. Methods Phys. Res. B 9, 887 (1985) United Kingdom |
| 00217 F | A36: He ²⁺ + Li A37: He ²⁺ + He | 0-12 Ry | Fairley, B.; Laughlin, C. Calculations on quartet levels of 3-electron atoms. Nucl. Instrum. Methods Phys. Res. B 9, 509 (1985) United Kingdom |
| 00218 E | A33: D ²⁺ + He; D ²⁺ + He; C ²⁺ + He A36: D ²⁺ + He; D ²⁺ + He; C ²⁺ + He | 5.6-120 keV | Donets, E. D. Electron beam ion sources and associated physics at JINR. Nucl. Instrum. Methods Phys. Res. B 9, 522 (1985) Soviet Union |
| 00219 E | A36: C ²⁺ + He; C ²⁺ + He | 0.22-8 MeV/amu | Meyer, F. H. The OMBL ECB multicharged ion source. Nucl. Instrum. Methods Phys. Res. B 9, 532 (1985) United States |
| 00220 E | D68: Li + Ca; Li + C; Pb ²⁺ + Ni; Pb ²⁺ + Ni | 50-350 keV | Andre, H. J.; Zissay, B.; Winter, H.; Hagedorn, H. Electronic interaction of fast ions with surfacex. Nucl. Instrum. Methods Phys. Res. B 9, 572 (1985) West Germany |
| 00221 E | D38: He ²⁺ + C; D ₂ ⁺ + C; D ₂ ⁺ + C | 20-500 keV/amu | Baudinet-Robinet, Y.; Desaut, P. D. Populations of sp terms in deuterium atoms emergent from carbon foils bombarded with D ²⁺ , D ₂ ⁺ , and D ⁺ ions. Nucl. Instrum. Methods Phys. Res. B 9, 578 (1985) Belgium |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|--------------------|---|
| 00222 E | D30: Ar ⁺ + S | 60 keV | Lee, C. S.; Lenoir, J.; Pedrazzini, G. J.; Church, D. A. Measurements of the polarization of radiation emitted by fast argon ions scattered by adsorbates on surfaces. <i>Nucl. Instrum. Methods Phys. Res. B</i> 9, 630 (1985) United States |
| 00223 E | D00: Fe ⁺ + B | 20 keV | de Kort, S. T.; Pruntje, A. G.; Boers, A. L. Surface physics with multiply charged ions. <i>Nucl. Instrum. Methods Phys. Res. B</i> 9, 638 (1985) The Netherlands |
| 00224 E | D00: Cl ¹⁶⁺ + C | 150 MeV | Okawa, K.; Yamaguchi, H.; Kawamura, K.; Satake, H.; Kitahara, T.; Kibuchi, A.; Kanaki, K.; Ootaka, A.; Fujimoto, F. Near-foils interaction of highly ionized chlorine ions in the high energy region. <i>Nucl. Instrum. Methods Phys. Res. B</i> 9, 621 (1985) Japan |
| 00225 F | A06: Ca ⁺ + H; H ⁺ + He; H ⁺ + Fe ⁺ H ⁺ + Si ⁺ ; He ⁺ + Si ⁺ | Widef | Belgarno, A. Charge transfer processes in astrophysical plasmas. <i>Nucl. Instrum. Methods Phys. Res. B</i> 9, 655 (1985) United States |
| 00226 E | A33: Fe ⁺ + Fe A36: Fe ⁺ + He | 0.7-3.6 keV/amu | Cotte, P. H.; Broette, H.; Martin, S.; Denis, A.; Desrequeux, J.; Hitz, B.; Rousson, S. UV spectroscopy of charge exchange collisions between Fe ⁺ ions and K _α , M _α . <i>Nucl. Instrum. Methods Phys. Res. B</i> 9, 703 (1985) France |
| 00227 | F31: Ion-ion recombination | | Bates, D. B. Ion-ion recombination in an ambient gas. p. 1 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 20, Academic Press, Inc., New York, (1985) United Kingdom |
| 00228 | F06: Molecules | | Hall, G. G. Atomic charges within molecules. p. 91 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 20, Academic Press, Inc., New York (1985) United Kingdom |
| 00229 | F01: Clusters | | Hark, T. D.; Castleman, A. W., Jr. Experimental studies on cluster ions. p. 45 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 20, Academic Press, Inc., New York (1985) United States |
| 00230 | F01: Ionization | | Heyerhof, W. E.; Chems, J. P. Nuclear reaction effects on atomic inner-shell ionization. p. 173 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 20, Academic Press, Inc., New York (1985) United States |
| 00231 | F02: Ionization | | Bottcher, C. Historical calculations on electron-impact ionization. p. 201 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 20, Academic Press, Inc., New York (1985) United States |
| 00232 | F35: Mobilities | | Freeman, G. H.; Armstrong, D. A. Electron and ion mobilities. p. 267 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 20, Academic Press, Inc., New York (1985) Canada |
| 00233 | F04: X-ray lasers | | Sobel'man, I. I.; Vinogradov, A. V. On the problem of extreme UV and X-ray lasers. p. 327 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 20, Academic Press, Inc., New York (1985) Soviet Union |
| 00234 | F02: Dissociative recombination F 3: Photoionization; Absorption | | Grenne, C. H.; Jaeger, C. Molecular applications of quantum defect theory. p. 51 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 21, Academic Press, Inc., New York (1985) United States |
| 00235 | F02: Dielectronic recombination | | Hahn, Y. Theory of dielectronic recombination. p. 111 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 21, Academic Press, Inc., New York (1985) United States |
| 00236 | F03: Multiphoton processes | | Chu, S. Recent development in semiclassical Floquet theories for intense-field multiphoton processes. p. 197 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and B. Bederson, Eds., Vol. 21, Academic Press, New York (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|---|-------------------------|---|
| 30237 | F01: Electron capture F03: Photoionization; Photo-detachment | | McDowell, R.H.C.; Farnone, B. Scattering in strong magnetic fields. p. 255 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and P. Bederson, Eds., Vol. 21, Academic Press, Inc., New York (1985) United Kingdom |
| 00238 | F01: Ionization F06: High density | | Born, F. H. Pressure ionization, resonances, and the continuity of bound and free states. p. 135 in <i>Advances in Atomic and Molecular Physics</i> , Sir D. Bates and P. Bederson, Eds., Vol. 21, Academic Press, Inc., New York (1985) United States |
| 00239 E | A05: O ²⁺ + H; O ³⁺ + H | 0.9-1x10 ⁶ K | Jones, S. P. Some surprises in atom-catalyzed reion. p. 33 in <i>Atomic Physics 9</i> , P. S. Van Dyck, Jr. and E. W. Fortson, Eds. World Scientific Publishing Co., Singapore (1984) United States |
| 30203 | F08: X-ray lasers | | Ragelstein, P. L. Review of short wavelength lasers. p. 332 in <i>Atomic Physics 9</i> , P. S. Van Dyck, Jr. and E. W. Fortson, Eds. World Scientific Publishing Co., Singapore (1984) United States |
| 00201 | F08: XUV lasers | | Harris, S. E.; Caro, P. G.; Farnone, B. W.; Holmgren, J. S.; Rothberg, J. E.; Selzer, D. J.; Wang, J. C.; Willison, J. T.; Young, J. F. Metastability in the XUV: Lasers and spectroscopy. p. 802 in <i>Atomic Physics 9</i> , P. S. Van Dyck, Jr. and E. W. Fortson, Eds. World Scientific Publishing Co., Singapore (1984) United States |
| 30202 | F01: Excitation | | Hsu, A.H.P. High excitation of two electrons. p. 891 in <i>Atomic Physics 9</i> , P. S. Van Dyck, Jr. and E. W. Fortson, Eds. World Scientific Publishing Co., Singapore (1984) United States |
| 30203 | F02: Dielectronic recombination | | Duan, G. H.; Belic, D. S.; Djuric, M.; Iselner, D. W. Dielectronic recombination. p. 535 in <i>Atomic Physics 9</i> , P. S. Van Dyck, Jr. and E. W. Fortson, Eds. World Scientific Publishing Co., Singapore (1984) United States |
| 30200 | F03: Multiphoton processes | | Gerrits, V. Multiphoton processes at high laser intensities. p. 523 in <i>Atomic Physics 9</i> , P. S. Van Dyck, Jr. and E. W. Fortson, Eds. World Scientific Publishing Co., Singapore (1984) The Netherlands |
| 00205 | F08: Plasmas | | Hinno, T. Highly ionized atoms in tokamak discharges. p. 89 in <i>Atomic Physics of Highly Ionized Atoms</i> , E. Hertz, Ed. Vol. 89c, Plenum Press, New York (1983) United States |
| 00206 | F01: Electron capture; Scattering | | Cocks, C. L. Inner shell capture in the intermediate velocity range. p. 323 in <i>Atomic Physics of Highly Ionized Atoms</i> , E. Hertz, Ed. Vol. 89c, Plenum Press, New York (1983) United States |
| 00207 | F01: Electron capture | | Bacat, Y. Charge exchange processes involving multicharged ions: the quasimolecular approach. p. 305 in <i>Atomic Physics of Highly Ionized Atoms</i> , E. Hertz, Ed. Vol. 89c, Plenum Press, New York (1983) France |
| 30200 | F02: Excitation; Ionization | | Crandall, D. H. Electron-ion collisions. p. 333 in <i>Atomic Physics of Highly Ionized Atoms</i> , E. Hertz, Ed. Vol. 89c, Plenum Press, New York (1983) United States |
| 00209 | F04: Channeling; Radiation | | Andersen, J. O. Channeling of ions and electrons in crystals and radiation from channelled electrons. p. 517 in <i>Atomic Physics of Highly Ionized Atoms</i> , E. Hertz, Ed. Vol. 89c, Plenum Press, New York (1983) Denmark |
| 00250 I | A17: H ₂ + H ₂ | Unrel | Bohn, H. J.; Altrich, R. The H ₂ + H ₂ interaction. A theoretical investigation. <i>Zoll. Phys.</i> 55, 1159 (1985) West Germany |
| 30251 E | A17: He + CH ₄ A18: He + CH ₄ | NR,4-10 ⁴ | Bach, U.; Kohlbas, A.; Seeger, D.; Phillips, I.; Schlem, J.; Stein, P. Potentially inelastic scattering and potential calculations for He + CH ₄ . <i>Zoll. Phys.</i> 55, 1211 (1985) West Germany |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|-----------------|--|
| 00252 E | A03: He + CH ₄ A17: He + CH ₄ A18: He + CH ₄ | 31.1-75.5 eV | Buck, E.; Kohl, K. H.; Kollhase, A.; Pabel, R.; Staemler, V. Rotationally inelastic scattering and potential calculations for He + CH ₄ . Mol. Phys. 55, 1255 (1985) West Germany |
| 10253 E | F04: He + F | Undef | Vojnovic, V.; Baskstein, H. L. Absolute scale of transition probabilities in neutral fluorine. Astron. Astrophys. 151, 802 (1985) Soviet Union |
| 10254 E-T | D03: e + Hg* | 15-50 eV | Williams, J. R.; Chetjian, A.; Sorenson, E. L.; Henry, R.J.S. Differential electron scattering cross sections for the 3 ² S - 3 ² P ^o h, h transitions in Hg II: comparison of experiment and theory. Astrophys. J., Part 1 299, 1363 (1985) United States |
| 00255 F | H04: He + Cr | 0-6 eV | Torri, J. P.; Brunner, A. J.; Baber, H.T.F. Transition probabilities in Cr I. Soc. Bot. B. Astron. Soc. 217, 423 (1985) United Kingdom |
| 10256 E | D07: H ₂ * + Ca | 33 eV | Balashova, L. L.; Garin, S. N.; Solchansk, V. A. Orientation dependence of the survival fraction of molecular ions reflected from a single crystal. Appl. Phys. [Glasgow] A 37, 171 (1985) Soviet Union |
| 10257 E | D03: e + C ²⁺ ; e + O ²⁺ ; e + Ne ²⁺ ; e + Si ²⁺ J02: Excitation | 2.6-10.7 Ry | Berrington, K. A.; Burke, P. G.; Dunton, P. L.; Kingston, A. E. Electron-impact-excitation collision strengths for Be-like ions. II. Intermediate-energy region and collision rates. At. Data Nucl. Data Tables 33, 195 (1985) United Kingdom |
| 00258 F | J01: Ionization | 0.1-3.0 keV | Chen, H. H.; Crasemann, B. Relativistic cross sections for atomic K- and L-shell ionization by protons, calculated from a Dirac-Hartree-Slater model. At. Data Nucl. Data Tables 33, 217 (1985) United States |
| 10259 E | J01: Ionization | 0.1-10 keV | Cohen, D. D.; Harrison, R. K. K- and L-shell ionization cross sections for protons and helium ions calculated in the ECPSM theory. At. Data Nucl. Data Tables 33, 255 (1985) Australia |
| 00260 F | D02: H ₂ * + Ar; H ₂ * + Au; H ₂ * + Co; D03: H ₂ * + Cu; H ₂ * + Fe; H ₂ * + Ni; D04: H ₂ * + Pd; H ₂ * + Pt; H ₂ * + Ta; H04: H ₂ * + Ti; H ₂ * + W; H ₂ * + Zn | 0-100 eV | Wilhelm, H. E. Quantum-statistical analysis of low energy scattering. Aust. J. Phys. 30, 125 (1985) United States |
| 10261 E-T | A06: K + O ₂ ; K + NO; Ca + O ₂ A07: K + O ₂ ; V + NO; Ca + O ₂ | 60-180 eV | Spelberg, H. B.; Vervant, H.G.M.; Kleyn, A. B.; Los, J. Partial state-to-state differential cross sections for ion-pair formation in atom-molecule collisions. Chem. Phys. 99, 1 (1985) The Netherlands |
| 00262 E | H04: He + H ₂ O | 11-30 eV | Brion, D. V.; Carnovale, P. The absolute partial photoionization cross section for the production of the X ² Σ ⁺ state of H ₂ O ⁺ . Chem. Phys. 133, 291 (1985) Canada |
| 00263 F | A14: H + D ₂ ; O + H ₂ | 300 K | Schechter, I.; Kohnoff, B.; Levine, P. D. Vibrational enhancement of the reaction rate and steric requirements in the H + D ₂ (v) and O + H ₂ (v) reactions. Chem. Phys. Lett. 121, 297 (1985) Israel |
| 10264 E | A11: H ₂ * + O ₂ | 43-563 K | De Souza, A. B.; Touzeau, M.; Pratsidier, M. Quenching reactions of metastable H ₂ (A ² Σ ⁺ , v = 2,1,0) molecules by O ₂ . Chem. Phys. Lett. 121, 623 (1985) France |
| 10265 E | A14: Ar ₂ * + H ₂ | 330 K | Bakht, A. S. Reactions of Ar ₂ * ions with neutral molecules. Int. J. Mass Spectrom. Ion Processes 66, 109 (1985) United States |
| 00266 F | A14: F + H ₂ A17: F + H ₂ | 0-1 kcal/mol | Steckler, P.; Truhler, D. G.; Garrett, B. C. A high-barrier potential energy surface for F + H ₂ → HF + H. J. Chem. Phys. 83, 2873 (1985) United States |
| 10267 F | A14: He* + He + He | 43-123 K | Russell, J. E. Analysis of the reaction He* + He + He → He ₂ * + He. J. Chem. Phys. 83, 1363 (1985) United States |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|---|--------------|--|
| 30268 E | 306: Ar + H ₂ | 264 nm | Meier, B.; Rottke, H.; Zacharias, H.; Selje, K. E. Rotational state selective photoionization of the H ₂ molecule from B ¹ (π g) states ($v' = 0, 1$). <i>J. Chem. Phys.</i> 81, 4362 (1985) West Germany |
| 30269 F | A11: CO ⁺ + He | 5-323 meV | Schinke, S.; Diercksen, G.H.F. Vibrational relaxation of CO($v = 1$) in collisions with He. <i>J. Chem. Phys.</i> 83, 4516 (1985) West Germany |
| 30270 E | D38: NO + Ge | 102-923 E | Hödl, A.; Rebots, M.; Segner, J.; Vielhaber, W.; Lin, H. C.; Kretz, G. Rotational state distributions of NO molecules after interaction with germanium surfaces. <i>J. Chem. Phys.</i> 83, 4802 (1985) West Germany |
| 30271 E | A32: D + He; D + He; D + Ar; D + Kr; Xe + He; He + Ar; He + Kr A17: He + He; D + He | 13-1033 eV | Ruzic, D. N.; Cohen, S. A. Total scattering cross sections and interatomic potentials for molecular hydrogen and helium on some noble gases. <i>J. Chem. Phys.</i> 83, 5527 (1985) United States |
| 30272 E | E35: hv + NO E36: hv + NO | 616-123 Å | Sanson, J.A.H.; Namoto, S.; Far-ek, P. M. Dissociative and double photoionization cross sections of NO from threshold to 123 Å. <i>J. Chem. Phys.</i> 83, 5531 (1985) United States |
| 00273 F | E14: O + D ₂ ; O + D ₂ ; O + D ₂ | 0.1-0.8 eV | Schatz, G. C. A coupled state distorted wave study of the O(² P, ⁴ S, ² D _{3/2} , ² D _{5/2} , ² D _{3/2}) reaction. <i>J. Chem. Phys.</i> 81, 5677 (1985) United States |
| 30274 E-F | E39: e + H ₂ ; e + D ₂ | 333-2333 E | Christophorou, L. G. Temperature dependence of the isotope effect in dissociative attachment. <i>J. Chem. Phys.</i> 83, 6219 (1985) United States |
| 30275 E | D37: He ⁺ + Hg; He ⁺ + Y; He ⁺ + HgO; Ar ⁺ + Hg; Ar ⁺ + Y; Ar ⁺ + HgO; He ⁺ + Hg(OH) ₂ ; Ar ⁺ + Hg(OH) ₂ ; He ⁺ + Y ₂ O ₃ ; Ar ⁺ + Y ₂ O ₃ ; He ⁺ + Y(OH) ₂ ; Ar ⁺ + Y(OH) ₂ ; D38: He ⁺ + H ₂ ; He ⁺ + Y; He ⁺ + HgO; Ar ⁺ + H ₂ ; Ar ⁺ + Y; Ar ⁺ + HgO; He ⁺ + Hg(OH) ₂ ; Ar ⁺ + Hg(OH) ₂ ; He ⁺ + Y ₂ O ₃ ; Ar ⁺ + Y ₂ O ₃ ; He ⁺ + Y(OH) ₂ ; Ar ⁺ + Y(OH) ₂ ; D12: He ⁺ + H ₂ ; He ⁺ + Y; He ⁺ + HgO; Ar ⁺ + H ₂ ; Ar ⁺ + Y; Ar ⁺ + HgO; He ⁺ + Hg(OH) ₂ ; Ar ⁺ + Hg(OH) ₂ ; He ⁺ + Y ₂ O ₃ ; Ar ⁺ + Y ₂ O ₃ ; He ⁺ + Y(OH) ₂ ; Ar ⁺ + Y(OH) ₂ | 1-13 keV | Babelais, J. P.; Chen, J. H.; Far-ek, P. M.; Karyanas, M. Inelastic processes in ion/surface collisions: Filtered ion functions and UV photo emission for He ⁺ on Au. Collisions with H ₂ and 1 surfaces. <i>J. Chem. Phys.</i> 83, 5533 (1985) United States |
| 30276 E | E36: hv + He | 670-550 nm | Dexter, J. L.; Jaffe, S. H.; Callagher, T. F. Double ionization of He from 550 to 670 nm. <i>J. Phys. B</i> 18, L735 (1985) United States |
| 30277 E | A33: He ⁺ + Li | 2-23 keV | Aubry, F.; Winter, H. Excitation by impact of He ⁺ (2-20 keV) on Li (2s). <i>J. Phys. B</i> 18, L761 (1985) Austria |
| 30278 F | E33: e + N | Under | Devarajan, D. P.; Khadikar, S. B. A multiple scattering theory for electron-atom collisions. <i>J. Phys. B</i> 18, L751 (1985) India |
| 00279 E | E33: e + He | 56-66 eV | Van der Burch, P.J.M.; Reidenas, M.S.N. A new type of He ⁺ resonance states in the autoionization region. <i>J. Phys. B</i> 18, L755 (1985) The Netherlands |
| 00280 F | E08: e + H ⁺ | 170 eV | Banon, J. H.; Koenig, H.; Djayou, E. Broadening of dielectronic satellite lines in dense plasmas. <i>J. Phys. B</i> 18, 4195 (1985) France |
| 30281 E | A33: He + H ₂ | 2533-4533 E | Boordaan, J. P.; Scholten, J.; Kuyving, J.; Van Hemert, H. C.; de Groot, J. J.; Van Heij, R.P.M. Analysis of satellite and emission structure in the spectrum of He + H ₂ continuous emission. <i>J. Phys. B</i> 18, 4205 (1985) The Netherlands |

| Ref. No. | Substance | Energy Range | Reference |
|----------|--|--------------------------------|--|
| 04222 E | A06: He ⁺ + Li; He ²⁺ + Li A37: He ⁺ + Li; He ²⁺ + Li | 22-2100 keV/amu | Shah, R. S.; Elliott, D. S.; Gilbody, H. B. Ionisation and charge transfer in collisions of He ⁺ and He ²⁺ with lithium. <i>J. Phys. B</i> 10, 4205 (1985) United Kingdom |
| 04223 E | A76: He ²⁺ + I | 2-25 keV/amu | Wada, K.; Sakai, T. Charge transfer in He ²⁺ + I(10g) collisions: convergence and oscillatory structure of the total cross sections. <i>J. Phys. B</i> 10, 4259 (1985) Japan |
| 04224 E | A06: He ⁺ + H A37: He ²⁺ + H | 0.003-0.12 keV/amu | Erreo, L. F.; Mendez, L.; Sierra, A. G. Laser-induced charge transfer in the OH ⁺ quasimolecule. <i>J. Phys. B</i> 10, 4271 (1985) Spain |
| 04225 E | A06: He ⁺ + He; He ²⁺ + Li; He ²⁺ + He He ²⁺ + Kr | 10-1000 keV | Chatterjee, S. B.; Roy, A. B. Modified MCA calculations of He ²⁺ impact double electron capture cross sections of atoms. <i>J. Phys. B</i> 10, 4283 (1985) India |
| 04226 E | A37: He ⁺ + H A38: He ²⁺ + H | 1.5-5.0 eV | Bestmann, B. H.; Peyerimhoff, S. D. CI method for determining the location and width of resonances in electron-molecule collision processes. <i>J. Phys. B</i> 10, 4329 (1985) West Germany |
| 04227 E | A37: He ⁺ + Al | 0.5-0.3010 ² keV | Tayal, S. S.; Burke, P. G.; Kingston, A. L. Electron impact excitation of forbidden and allowed transitions in Al II. <i>J. Phys. B</i> 10, 4321 (1985) United Kingdom |
| 04228 E | A37: He ⁺ + I | 1 keV | McLaughlin, R. E.; Bell, E. L. H(1s) formation in non-adiabatic ground-state hydrogen atom collisions. <i>J. Phys. B</i> 10, 4771 (1985) United Kingdom |
| 04229 E | A06: He ⁺ + He; He ²⁺ + He; He ²⁺ + He He ²⁺ + Ar | 1.5-5 keV | Jellen-Watte, W.; Schweitzer, J.; Vasek, M.; Winter, H. Scattering-angle-dependent translational energy spectroscopy for electron capture by doubly charged ions. <i>J. Phys. B</i> 10, 4779 (1985) Austria |
| 04230 E | A06: He ⁺ + Ar | 1-1000 keV | Chakrabarty, S. On the K-shell ionisation of atoms by electrons. <i>J. Phys. B</i> 10, 4787 (1985) India |
| 04231 E | A37: He ⁺ + He; He ²⁺ + He | 1-100 eV | Anasia, A. T.; Ardonna, S. B.; Chernysheva, L. V.; Eschiev, M. V. "Stripping" of the atom in bremsstrahlung. <i>J. Phys. B</i> 10, 4791 (1985) Soviet Union |
| 04232 E | B07: Xe ⁺ | | Piccolino, E.; Littleman, R. H. Kinetics of multiphoton ionisation in a laser pulse. <i>J. Phys. B</i> 10, 4825 (1985) United States |
| 04233 E | A01: He ⁺ + He; He ²⁺ + He; He ²⁺ + He He ²⁺ + Cs | 0.01-10 keV | Swanson, B. B.; Tapp, D.; Anderson, L. W. Spin exchange collision cross sections for fast hydrogen atoms incident on hydrogen or alkali atoms. <i>J. Phys. B</i> 10, 4833 (1985) United States |
| 04234 E | A36: Ar ²⁺ + Ar | 433-637 eV | Puerta, J.; Huber, R. A. Single electron capture by state-prepared Ar ²⁺ projectiles in Ar. <i>J. Phys. B</i> 10, 4865 (1985) West Germany |
| 04235 E | A37: He ⁺ + CO ₂ A38: He ²⁺ + CO ₂ | 3.15-1.35 eV | Kochen, W. N.; Sohn, H.; Nebel, H.; Junj, H.; Ehrhardt, H. Elastic electron scattering and vibrational excitation of CO ₂ in the threshold energy region. <i>J. Phys. B</i> 10, 4855 (1985) West Germany |
| 04236 E | A37: He ⁺ + CO ₂ | 3.1-3.9 eV | Estroff, H.; Doncho, H. On the virtual-state effect in low-energy electron-CO ₂ scattering. <i>J. Phys. B</i> 10, 4869 (1985) West Germany |
| 04237 E | A37: He ⁺ + H ₂ O | Water | Matsson, G. A. Selection rules for rotational excitation of polyatomic molecules by slow electron impact. <i>J. Phys. B</i> 10, 4881 (1985) United States |
| 04238 E | A01: He ⁺ + H ₂ | 0.3-0.4 eV | Allan, H. Excitation of vibrational levels up to v = 17 in H ₂ by electron impact in the 3-5 eV region. <i>J. Phys. B</i> 10, 4911 (1985) Switzerland |

| Ref. No. | Reactants | Energy Range | Reference |
|----------|--|-------------------|---|
| 00299 E | E05: e + Ar | 4 keV | Graf, H.; Bink, R. Measurements on PCI and threshold law in K-shell ionization of Ar by electron impact. <i>J. Phys. B</i> 18, 1803 (1985) West Germany |
| 00300 E | H02: hv + H ₂ | 1001-1005 Å | Baig, L. A.; Combarro, J. P. New high-resolution photoabsorption study of the Lyman bands of H ₂ . <i>J. Phys. B</i> 18, 1879 (1985) West Germany |
| 30301 E | A37: rb ⁺ + K | Thermal | Bjerad, M. T.; Marins, R.; Cherst, N. Associative ionization in Rb(m)-K(nS) collisions. <i>J. Phys. B</i> 18, L815 (1985) France |
| 30302 E | C33: e + Ag F05: e + Hg | 23-523 eV | Forrest, L. F.; Sobhi, R.; Pejcev, V.; Hess, K. J.; Wilson, S. The autoionising spectrum of atomic mercury excited by electron impact. <i>J. Phys. B</i> 18, 4519 (1985) United Kingdom |
| 30303 E | H20: hv + Ta; hv + W; hv + Au; hv + Ti; hv + Bi | 15-63 keV | Gary, A. L.; Koser, S.; Hehta, P.; Fernan, M. B.; Sangal, P. C.; Trehan, P. K. Measurement of photon-induced L X-ray fluorescence cross sections for Ta, W, Au, Ti, and Bi in the 15-60 keV energy range. <i>J. Phys. B</i> 18, 4529 (1985) India |
| 30304 F | A30: Water | Water | Cowsey, P. V.; Child, M. S.; Marzay, A. The two-state S matrix for the Landau-Zener potential curve crossing model: predissociation and resonant scattering. <i>J. Phys. B</i> 18, 4557 (1985) United Kingdom |
| 30305 E | A31: He ⁺ + He A00: He ⁺ + He A37: He ⁺ + He | 43-533 keV | Yok, A.; Tomoz, T.-J.-S.; Schneider, D.; Stettner, D.; Reitz, H.; Stolterfoht, H. Transfer excitation in He ⁺ + He collisions studied by O ⁺ electron spectroscopy. <i>J. Phys. B</i> 18, 4561 (1985) West Germany |
| 30306 F | A37: He ¹⁰⁺ + Cd; He ¹⁰⁺ + Ta; He ¹⁰⁺ + Pt; He ¹⁰⁺ + Au; He ¹⁰⁺ + Pb; He ⁺ + Cd; He ⁺ + Ta; He ⁺ + Pt; He ⁺ + Au; He ⁺ + Pb; He ⁺ + U | 0.67-8.88 GeV/amu | Becher, U.; Graw, H.; Scheif, H. Cross sections for K-shell ionization in relativistic heavy-ion collisions. <i>J. Phys. B</i> 18, 4589 (1985) West Germany |
| 30307 F | E33: e + He ⁺ E37: e + He ⁺ | 7-12 eV | Dubruil, B.; Prigent, P. Collisional processes induced in the n = 3 helium sublevels by electrons in a low-pressure plasma. Application to the electron density measurement. <i>J. Phys. B</i> 18, 4597 (1985) France |
| 30308 E | H36: 2hv + He ⁺ | Water | Harth, K.; Cark, J.; Raab, H.; Lu, K. T.; Geiger, J.; Hoptop, R. On the x-rd interaction in neon. <i>J. Phys. B</i> 18, L825 (1985) East Germany |
| 30309 F | E32: e + H ₂ E31: e + H ₂ | 3.78-2.3 Ry | Baluja, K. L.; Noble, C. J.; Tennyson, J. Electronic excitation of the b ³ P(sub u) state of H ₂ using the h-matrix method. <i>J. Phys. B</i> 17, L851 (1985) United Kingdom |
| 30310 F | E33: e + H ₂ | 12-33 eV | Schneider, B. L.; Collins, L. A. Electronic excitation of the b ³ P(sub u) state of H ₂ by electron impact in the linear algebraic approach. <i>J. Phys. B</i> 18, L857 (1985) United States |
| 30311 F | F33: e + H ₂ E17: e + H ₂ | 13-33 eV | Liou, H.-A.-P.; Gibson, T. L.; Hsu, H. H.; McRoy, V. Cross sections for electron impact excitation of the b ³ P(sub u) state of H ₂ ; an application of the Schwinger multichannel variational method. <i>J. Phys. B</i> 18, L865 (1985) United States |
| 30312 E | F33: e + H ₂ F17: e + H ₂ | 11.0-43 eV | Panquevick, D.; DeFrance, A.; Hagena, H. Differential (3,103°) excitation function of the C ³ P(sub u) state of H ₂ by electron impact. <i>J. Phys. B</i> 18, L871 (1985) France |
| 30313 F | F11: e + H F17: e + H | 50.0-133 eV | Chivros, S.; Slevin, J. Angular correlation measurements for the 1D(sub u) states of atomic hydrogen. <i>J. Phys. B</i> 18, L881 (1985) United Kingdom |
| 30314 E | A33: He + He | 3.5-3.5 keV | Moorens, L.; Van Eck, J.; Meidema, H.G.H.; Fiehbels, G. Energy dependence of atomic substrate correlation in simultaneous double-atom excitations in He + He collisions. <i>J. Phys. B</i> 18, 4727 (1985) The Netherlands |

| Ref. No. | Reactants | Energy Range | Reference |
|-----------|--|-------------------|--|
| 00315 E | A93: He ²⁺ + H; He ²⁺ + H ₂ A96: He ²⁺ + H; He ²⁺ + H ₂ | 1.25-19 keV/nm | Ciric, B.; Dijkkamp, B.; Vlieg, E.; de Haer, F. J. Selective electron capture into He II (n, l) subshells in collision of He ²⁺ with atomic and molecular hydrogen. <i>J. Phys. B</i> 18, 4745 (1985) The Netherlands |
| 00316 E | A93: C ³⁺ + H; C ³⁺ + H ₂ ; N ³⁺ + H; N ³⁺ + H ₂ O ⁴⁺ + H; O ⁴⁺ + H ₂ A96: C ³⁺ + H; C ³⁺ + H ₂ ; N ³⁺ + H; N ³⁺ + H ₂ O ⁴⁺ + H; O ⁴⁺ + H ₂ | 2-26 keV | Dijkkamp, B.; Ciric, B.; Vlieg, E.; de Haer, A.; de Haer, F. J. Subshell selective electron capture in collisions of C ³⁺ , N ³⁺ , O ⁴⁺ with H, H ₂ and He. <i>J. Phys. B</i> 18, 4763 (1985) The Netherlands |
| 00317 E | A96: Kr ²⁺ + H ₂ | 1-6 keV | Bathar, B.; Madrinathan, C.; Bajjani, F. A.; Pakeja, S. T. Electron capture collisions of Kr ²⁺ (2P) in H ₂ . <i>J. Phys. B</i> 18, 4795 (1985) India |
| 00318 E-Y | E92: e + He; e + Ne; e + Ar | 35 keV | Coffman, J. B.; Pink, R.; Wollenstein, B. Elastic small-angle electron scattering by He, Ne, and Ar at 35 keV. <i>Phys. Rev. Lett.</i> 55, 1392 (1985) United States |
| 00319 E-Y | E92: e + He | 25 keV | Kotlar, S. H.; Benhan, R. A. Small-angle elastic differential scattering cross section for 25-keV electrons scattering from helium. <i>Phys. Rev. Lett.</i> 55, 1395 (1985) United States |
| 00320 E | D00: H ₂ + Ag | 9-102 kJ/mol | Bettner, C. T.; Fabre, F.; Kisman, J.; Auerbach, D. J. Observation of direct vibrational excitation in gas-surface collisions: H ₂ on Ag (111). <i>Phys. Rev. Lett.</i> 55, 1924 (1985) United States |
| 00321 E | D11: H ₂ + Cu; D ₂ + Cu | 20-75 meV | Andersson, S.; Silvea, L.; Harris, J. Sticking of molecular hydrogen on a cold Cu(100) surface. <i>Phys. Rev. Lett.</i> 55, 2591 (1985) Sweden |

CATEGORIZATION INDEX

A01

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

General

H * H
04293 T

H * H
04293 T
H * K
04293 T
H * Li
04293 T

H * Hn
04293 T
H * Hb
04293 T
GdAc
03776 T 03931 T

A02

HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Elastic Scattering Collisions

H* * He
03796 T
H * Ar
04271 E
H * He
04271 E
H * Kr
04271 E
H * Ne
04271 E
H * C
04092 T
H * H
04092 T

H* * Al
03502 T
H* * H
04951 T
H* * He
03501 T
H₂* * H₂
03310 D-T
He * Ar
04271 E
He * He
03376 D-T
He * He
03376 D-T
He * He
03501 T 04271 E
He * Kr
04271 E
He * H₂
03301 D-T 03642 E-T

He * He
03642 E-T
He* * He
03329 E-T
He* * He
03329 E-T
He* * He
03195 T
He* * He
03610 T
He* * He
03283 E
Th* * He
03709 E-T
Th* * He
03709 E-T
Th* * He
03709 E-T
GdAc
03726 T

403
**HEAVY PARTICLE - HEAVY PARTICLE
 INTERACTIONS**

Excitation

Al³⁺ + He
 03653 E-T

Al³⁺ + He
 04195 E

Ar + H
 03264 E

Ar + Li
 03175 T

Ar + LiH
 03175 T

Ar + He
 03175 T

Ar + H
 03258 E

Ar + He
 03128 E

Ar²⁺ + He
 04104 E

Ar²⁺ + Ar
 03624 E

Ar²⁺ + Ar
 04236 E

Ar²⁺ + He
 04236 E

Ar²⁺ + Kr
 04236 E

Ar²⁺ + He
 04236 E

Ar²⁺ + Ar
 04231 E 04236 E

Ar²⁺ + He
 04236 E

Ar²⁺ + Ar
 04201 E

Ar²⁺ + Ar
 03562 E 04201 E 04207 E

Ar²⁺ + He
 03110 E 03562 E 04207 E

Ar²⁺ + He
 03562 E 04207 E

Ar²⁺ + Ar
 03562 E 04201 E 04207 E

Ar²⁺ + He
 03562 E 04207 E

Ar²⁺ + He
 03562 E 04201 E 04207 E

Ar²⁺ + He
 03213 T

Ar²⁺ + He
 03562 E 04207 E

Ar²⁺ + He
 03562 E 04207 E

Ar²⁺ + Ar
 03561 E 04207 E

Ar²⁺ + He
 03562 E 04207 E

Ar²⁺ + He
 03562 E 04207 E

Ar²⁺ + Ar
 03562 E 04207 E

Ar²⁺ + He
 03562 E 04207 E

Ar²⁺ + He
 03562 E 04207 E

Ar²⁺ + He
 03487 T

Ar²⁺ + He
 03110 E

Ar²⁺ + Ar²⁺
 04115 T

He²⁺ + H
 03628 T

Ca²⁺ + H
 03680 E

Ca²⁺ + He
 03680 E

Ca²⁺ + Li
 04213 E

Ca²⁺ + Ar
 03915 E

Ca²⁺ + H
 03112 E 03130 T 03690 E-T
 04203 E 04205 T 04213 E
 04316 E

Ca²⁺ + He
 03130 T 04204 E-T 04316 E

Ca²⁺ + He
 03915 E 04068 T 04204 E-T
 04212 E

Ca²⁺ + Li
 04213 E

Ca²⁺ + He
 03915 E

Ca²⁺ + He
 03915 E

Ca²⁺ + Li
 04213 E

Ca²⁺ + Ar
 03103 E

Ca²⁺ + H
 03619 E 03628 T 03725 T
 04069 T 04230 T 04210 E

Ca²⁺ + He
 03103 E

Ca²⁺ + He
 03103 E

Ca²⁺ + Li
 04213 E

Ca²⁺ + He
 03192 E

Ca²⁺ + He
 03192 E

Ca²⁺ + He
 03192 E

Ca²⁺ + He
 03010 E

Ca²⁺ + He
 04050 E

Ca²⁺ + He
 03010 E

Ca²⁺ + He
 03010 E

Ca²⁺ + Ar
 03265 E 03517 E

Ca²⁺ + He
 03180 E

Ca + He
 03617 E

Ca²⁺ + He
 03294 E

Ca²⁺ + He
 03120 E 03599 E

Ca²⁺ + He
 03599 E

Ca²⁺ + He
 03120 E

Ca²⁺ + Ar
 03450 E

Ca²⁺ + He
 03450 E

Ca²⁺ + He
 03450 E

Ca²⁺ + He
 04068 E

Ca²⁺ + Ar
 03228 E

Ca²⁺ + He
 03228 E

Ca²⁺ + He
 03228 E

Ca²⁺ + He
 04190 T

Ca²⁺ + He
 03570 T

Ca²⁺ + He
 03570 T

Ca²⁺ + Ar
 03013 T

Ca²⁺ + He
 03423 T 04068 T

Pu⁰⁰ • E
 03420 T
 U • Cu
 03306 T
 U • Cu
 03370 T
 U • Bz
 03052 T
 U • B
 04200 T
 U • Bu
 04045 T 04066 E
 U • E
 03370 T
 U • Li
 03370 T
 U • Ba
 03370 T
 U • Be
 03401 E
 U • Bb
 03370 T
 U • Ar
 03359 E 04010 E 04100 E-T
 U • Ar⁰⁷
 04115 T
 U • As
 03762 E
 U • Au
 03599 E
 U • Co
 03663 T
 U • Cd
 03792 E
 U • Ca
 03762 E
 U • D
 03102 E
 U • Gd
 03299 E
 U • Ge
 03762 E
 U • H
 03222 T 03620 T 03520 T
 03620 T 03735 T 03031 T
 04066 T
 U • Ho⁰
 03210 T 03663 T
 U • H₂
 03102 E
 U • He
 03377 T 03737 E-T 03027 T
 03020 E 04045 T 04066 E
 U • Hg
 03792 E
 U • Li
 03602 E 04060 E
 U • Hg⁰¹
 03663 T

U • Ba
 04040 T 04049 E 04065 E
 U • Bi
 03762 E
 U • Pb
 03599 E 04170 E
 U • Pd
 03762 E
 U • PENT
 03670 T
 U • Rb
 03762 E
 U • Sc
 03762 E
 U • W
 03599 E
 U • Y
 03762 E
 U • Zn
 03792 E
 U • Zr
 03762 E
 U • Ar
 03053 T
 U • Ba
 03053 T
 U • Kr
 03053 T
 U • Ne
 03053 T
 U • Xe
 03053 T
 U • Ar
 03050 E
 U • CO₂
 03261 E
 U • E
 03050 E
 U • H₂
 03261 E 03050 E
 U • H₂
 03261 E
 U • He
 04049 E
 U • O₂
 03261 E
 U • CO
 03070 T
 U • Na
 04049 E
 U • He
 03717 E
 U • Na
 04049 E
 U • Hg
 03230 T

U • He
 03230 T
 U • CH₂
 04252 E
 U • CO
 03070 T
 U • He
 04310 E
 U • E₂
 03312 T
 U • Ar
 03771 T 04010 E
 U • Au
 03299 E
 U • Cd
 03679 E
 U • CO
 03540 E
 U • Cu
 03342 E-T
 U • Ho
 04325 E
 U • Hg
 03421 E
 U • Kr
 03193 E
 U • Li
 04277 E
 U • H₂
 03540 E
 U • Pb
 03193 E
 U • PENT
 03670 T 03771 T
 U • Pt
 03193 E
 U • Rb
 03342 E-T
 U • E
 03299 E
 U • Cd
 03679 E
 U • Ar⁰⁷
 04115 T
 U • Au
 03120 E 03599 E
 U • H
 03112 E 03303 T 03520 T
 03561 T 03769 T 04077 T
 04315 E
 U • H₂
 04315 E
 U • Li
 03091 T 04196 E 04216 T
 U • Pb
 03599 E
 U • E
 03599 E

A09

HEAVY PARTICLE - HEAVY PARTICLE
INTERACTIONS

Dissociation

$H_2^+ \cdot Cu$
03060 E

$H_2^+ \cdot Hg$
03011 T

$H_2^+ \cdot Cs$
03060 E

$H_2^+ \cdot Rn$
04100 E

$H_2^+ \cdot Ar$
04107 E

$H_2^+ \cdot Ca$
03060 E

$H_2^+ \cdot B_2$
03011 T

$H_2^+ \cdot Hg$
04107 E

$H_2^+ \cdot Cs$
03060 E

$H_2^+ \cdot Rn$
03717 E 04100 E

$H_2^+ \cdot Rn$
04100 E

$H_2^+ \cdot H_2$
03060 E

$H_2^+ \cdot Ar$
03533 E 04109 E

Under
04000 T

A05

HEAVY PARTICLE - HEAVY PARTICLE
INTERACTIONS

Fluorescence

$Ar \cdot H$
03260 E

$Ar \cdot Hg$
03257 E

$Ar^{++} \cdot Hg$
03257 E

$Cl^{++} \cdot Ar$
03265 E

$D^+ \cdot Au$
03599 E

$D^+ \cdot Pb$
03599 E

$D^+ \cdot U$
03599 E

$H^+ \cdot Ar$
03250 E

$H^+ \cdot Au$
03762 E

$H^+ \cdot Au$
03599 E 03626 E

$H^+ \cdot Bi$
03626 E

$H^+ \cdot C^{++}$
03663 T

$H^+ \cdot Cd$
03623 E 03792 E

$H^+ \cdot Ca$
03623 E 03762 E

$H^+ \cdot Dy$
03626 E

$H^+ \cdot Ge$
03762 E

$H^+ \cdot He^+$
03663 T

$H^+ \cdot H_2$
03250 E

$H^+ \cdot Hg$
03792 E

$H^+ \cdot Hg^{++}$
03663 T

$H^+ \cdot He$
03623 E

$H^+ \cdot Bi$
03762 E

$H^+ \cdot Pb$
03599 E 03626 E

$H^+ \cdot Pd$
03762 E

$H^+ \cdot PHBT$
03670 T

$H^+ \cdot Sb$
03762 E

$H^+ \cdot Sc$
03762 E

$H^+ \cdot Th$
03626 E

$H^+ \cdot U$
03599 E 03626 E

$H^+ \cdot V$
03626 E

$H^+ \cdot Y$
03762 E

$H^+ \cdot Yb$
03626 E

$H^+ \cdot Zn$
03762 E

$H^+ \cdot Ar$
03250 E

$H^+ \cdot PHBT$
03670 T

$H^+ \cdot Au$
03599 E

$H^+ \cdot Pb$
03599 E

$H^+ \cdot U$
03599 E

Under
03655 T

205

HEAVY PARTICLES - HEAVY PARTICLES
IDENTIFICATION

Electron Capture

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T 03653 D-T

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T 04195 E

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T

Al²⁷ + H
03307 D-T 03309 D-T

Al²⁷ + H₂
03309 D-T

Al²⁷ + H
03307 D-T

Al²⁷ + H
03307 D-T

Al²⁷ + H
03307 D-T

Al²⁷ + H
03307 D-T

Ar³⁶ + Ar
03094 E 03505 T

Ar³⁶ + H₂
04111 T

Ar³⁶ + Ar
03094 E 03713 E

Ar³⁶ + H₂
04110 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03100 E

Ar³⁶ + H₂
04209 E

Ar³⁶ + H₂
04209 E

Ar³⁶ + Ar
04294 E

Ar³⁶ + Ar
03094 E 03107 E 04206 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03132 E 03100 E

Ar³⁶ + H₂
03107 E 04206 E

Ar³⁶ + H₂
03107 E 04206 E

Ar³⁶ + H₂
03107 E 04206 E

Ar³⁶ + Ar
03094 E 04201 E 04206 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03100 E

Ar³⁶ + H₂
04206 E

Ar³⁶ + Ar
03094 E 04201 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03100 E

Ar³⁶ + Ar
03094 E 03562 E 04201 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03100 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + Ar
03094 E 03562 E 04201 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03100 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + Ar
03094 E 03562 E 04206 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03100 E

Ar³⁶ + H₂
03213 T

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + Ar
03094 E 03562 E 04207 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03100 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + Ar
03094 E 04207 E

Ar³⁶ + H
03100 E

Ar³⁶ + H₂
03100 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + H₂
03562 E 04207 E

Ar³⁶ + H₂
04095 E

Ar³⁶ + H₂
03407 T

Ar³⁶ + Ar
03509 T

Ar³⁶ + H₂
03455 E 03509 T

Ar³⁶ + H₂
03455 E

Ar³⁶ + Cu
03455 E 03509 T

Ar³⁶ + H
03350 E

Ar³⁶ + H₂
03350 E

Ar³⁶ + H₂
03350 E

Ar³⁶ + H₂
03350 E

Ar³⁶ + H₂
03413 T

Fe⁺⁺ • H
 04163 E
 Fe⁺⁺ • H₂
 04163 E
 Fe⁺⁺ • H₂
 03226 E
 Fe⁺⁺ • H₂
 03226 E
 Fe⁺⁺ • H
 03690 E-T 03063 E 04083 E
 04163 E 04194 E
 Fe⁺⁺ • H₂
 03060 E 04083 E 04163 E
 Fe⁺⁺ • H
 03307 E-T
 Fe⁺⁺ • H
 03307 E-T
 Fe⁺⁺ • H
 03307 E-T
 Fe⁺⁺ • H
 03307 E-T
 Fe⁺⁺ • H
 03307 E-T
 Fe⁺⁺ • H
 03307 E-T
 Fe⁺⁺ • H
 03307 E-T
 Fe⁺⁺ • H
 03307 E-T
 Fe⁺⁺ • H
 03307 E-T 03570 E
 Fe⁺⁺ • H
 03307 E-T 03570 E
 Fe⁺⁺ • H
 03307 E-T 03570 E
 Fe⁺⁺ • H
 03570 E
 Fe⁺⁺ • H
 04091 E
 H • He
 04066 E
 H • Hg
 03707 E
 H • He
 03942 E
 H • Al⁺
 04116 E
 H • Ar
 03275 E 03350 E 03461 E
 03716 E 03825 E
 H • B⁺⁺
 03666 E
 H • C
 03275 E 03461 E 03716 E

H • CH₂
 03126 E 03301 E
 H • CO
 03301 E
 H • CO₂
 03301 E
 H • Ca
 03460 E
 H • D₂
 03182 E
 H • Fe⁺
 04225 E
 H • Ga⁺
 04116 E
 H • H
 03129 E 03222 E 03285 E
 03546 E 03550 E 03580 E
 03628 E 03629 E 03656 E
 03714 E 03735 E 03793 E
 03831 E 03936 E 04131 E
 04182 E 04123 E
 H • He⁺
 03210 E 03890 E
 H • H₂ S₂
 03714 E
 H • H₂
 03182 E 03712 E 04112 E
 H • He
 03272 E 03377 E 03380 E
 03523 E 03524 E 03714 E
 03736 E 03914 E 03929 E
 04066 E 04085 E 04087 E
 04089 E 04099 E 04100 E
 H • Hg
 03768 E
 H • In⁺
 04116 E
 H • Kr
 03689 E-T
 H • Li⁺
 04117 E
 H • Li
 03187 E 03457 E 03482 E
 03436 E 04086 E 04164 E
 04282 E
 H • Hg
 03457 E 04082 E
 H • H
 03275 E 03461 E 04098 E
 H • H₂
 03126 E
 H • He
 03457 E 03817 E 01937 E
 03882 E 04086 E
 H • He
 03180 E 03275 E 03381 E
 03461 E 03714 E 04082 E
 H • H₂
 03180 E
 H • O
 03275 E 03461 E 04098 E

H • O₂
 03381 E
 H • Si⁺
 04225 E
 H • Si
 03144 E
 H • Si⁺
 04116 E
 H • He
 03714 E
 H • H
 03548 E
 H • He
 03720 E
 H • He⁺
 03842 E
 H₂⁺ • Ar
 04137 E
 H₂⁺ • Ca
 03460 E
 H₂⁺ • H₂
 03228 E
 H₂⁺ • Li
 03187 E
 H₂⁺ • Hg
 04187 E
 H₂⁺ • He₂
 04140 E
 H₂⁺ • Cu
 03460 E
 H₂⁺ • Hg₂
 04140 E
 H₂⁺ • He₂
 04140 E
 H₂⁺ • Ar
 03716 E
 H₂⁺ • Ca
 03679 E
 H₂⁺ • CH₂
 03381 E 03716 E
 H₂⁺ • CO
 03381 E 03716 E
 H₂⁺ • CO₂
 03381 E 03716 E
 H₂⁺ • Ca
 03342 E-T
 H₂⁺ • H
 03914 E
 H₂⁺ • He⁺
 03914 E
 H₂⁺ • H₂⁺
 03777 E
 H₂⁺ • H₂
 03716 E
 H₂⁺ • He
 03281 E 03716 E 04086 E

$I^{200} \cdot He$
33122 E 34210 E

$I^{200} \cdot He$
33122 E 34210 E

$I^{200} \cdot He$
33122 E 34210 E

$I^{200} \cdot He$
33122 E 34210 E

$I^{200} \cdot He$
33122 E

$I^{200} \cdot He$
33122 E 04210 E

$I^{200} \cdot He$
33122 E 34210 E

$I \cdot He$
04261 E-T

$I \cdot He$
34261 E-T

$I \cdot He$
33216 T

$I^{200} \cdot He$
34317 E

$I^{200} \cdot He$
04209 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
04210 E

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04210 E

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04210 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
34213 T

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
04210 E

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04210 E

$I^{200} \cdot He$
04210 E

$I^{200} \cdot He$
34213 T

$I^{200} \cdot He$
34213 T

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34213 T

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34213 T

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34213 T

$I^{200} \cdot He$
34213 T

$I^{200} \cdot He$
33799 E

$I^{200} \cdot He$
33799 E

$I^{200} \cdot He$
03547 E

$I^{200} \cdot He$
33575 T

$I^{200} \cdot He$
33799 E

$I^{200} \cdot He$
03575 T

$I^{200} \cdot He$
33799 E

$I^{200} \cdot He$
03692 E-T

$I^{200} \cdot He$
33477 T

$I^{200} \cdot He$
33303 T 33520 T 34306 T
04009 T

$I^{200} \cdot He$
04301 E

$I^{200} \cdot He$
33460 E

$I^{200} \cdot He$
34379 E

$I^{200} \cdot He$
33491 T

$I^{200} \cdot He$
33131 E

$I^{200} \cdot He$
33460 E

$I^{200} \cdot He$
33131 E

$I^{200} \cdot He$
33131 E 33131 E

$I^{200} \cdot He$
33131 E 34225 T

$I^{200} \cdot He$
03131 E

$I^{200} \cdot He$
33131 E

$I^{200} \cdot He$
33131 E

$I^{200} \cdot He$
33131 E

$I^{200} \cdot He$
03130 T 34211 T

$I^{200} \cdot He$
03130 T

$I^{200} \cdot He$
33130 T 33690 E-T 34220 E
04205 T 04316 E

$I^{200} \cdot He$
33130 T 34379 E 34316 E

$I^{200} \cdot He$
34220 E

$I^{200} \cdot He$
33532 E

$I^{200} \cdot He$
33532 E

$I^{200} \cdot He$
33143 E

$I^{200} \cdot He$
33690 E-T 34163 E

$I^{200} \cdot He$
03143 E 04143 E 04199 E

$I^{200} \cdot He$
03143 E 03305 E 04071 E
04199 E

$I^{200} \cdot He$
33419 E 33690 E-T 33860 E
04003 E 04163 E 04210 E

$I^{200} \cdot He$
33860 E 34303 E 34163 E
34199 E

$I^{200} \cdot He$
34371 E 04199 E

$I^{200} \cdot He$
33904 T

$I^{200} \cdot He$
33641 E

$I^{200} \cdot He$
33575 T

$I^{200} \cdot He$
33575 T

$I^{200} \cdot He$
33095 E

$I^{200} \cdot He$
33107 E

$I^{200} \cdot He$
33100 E

$I^{200} \cdot He$
33100 E

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33100 E

$I^{200} \cdot He$
33100 E

$I^{200} \cdot He$
33100 E

$I^{200} \cdot He$
33100 E 33690 E-T

$I^{200} \cdot He$
33100 E 33100 E

| | | |
|--|---|--|
| He ⁺ + He 33183 E | He ⁺ + He 33153 E | Si ⁺⁺ + Ar 33236 E |
| He ⁺ + H 33188 E 33690 E-T | He ⁺ + He ₂ 34187 T | Si ⁺⁺ + He 33236 E |
| He ⁺ + He 33188 E | He ⁺ + H 34225 T 34239 E | Si ⁺⁺ + Ar 33236 E |
| He ⁺ + H 33690 E-T | He ⁺ + H 33690 E-T | Si ⁺⁺ + He 33236 E |
| He ⁺ + He 33113 E 34195 E | He ⁺ + Ar 33143 E 34272 E | Si ⁺⁺ + Ar 33236 E 34395 E |
| He ⁺ + He 33113 E 34195 E | He ⁺ + H 33690 E-T 34203 E 34295 T 34316 E | Si ⁺⁺ + He 33236 E 34373 E 34453 E |
| He ⁺ + H 33690 E-T 34163 E | He ⁺ + He 33143 E 34316 E | Si ⁺⁺ + Ar 33236 E |
| He ⁺ + He 33728 E 34163 E 34198 T | He ⁺ + He 33143 E 33337 E-T 34390 T | Si ⁺⁺ + C 33858 E |
| He ⁺⁺ + Ar 33509 T | He ⁺⁺ + H 33690 E-T 34163 E | Si ⁺⁺ + He 33236 E |
| He ⁺⁺ + Si 33455 E 33509 T | He ⁺⁺ + He 34163 E | Si ⁺⁺ + Ar 33236 E |
| He ⁺⁺ + He 33455 E | He ⁺⁺ + H 33358 E 33419 E 33690 E-T 33868 E 34083 E 34163 E 34218 E 34284 T | Si ⁺⁺ + He 33236 E |
| He ⁺⁺ + Cu 33455 E 33509 T | He ⁺⁺ + He 33358 E 33863 E 34083 E 34163 E | Si ⁺⁺ + Ar 33236 E |
| He ⁺⁺ + H 33358 E 33690 E-T 33868 E 34083 E | He ⁺⁺ + He 33358 E 33984 T 34083 E | Si ⁺⁺ + He 33236 E |
| He ⁺⁺ + He 33563 T | Fe ⁺⁺ + H 33587 T | Si ⁺⁺ + He 33498 T |
| He ⁺⁺ + H 5σg 33476 T | S + He 33773 T | Si ⁺⁺ + He 33417 E |
| He ⁺⁺ + He 33358 E 33868 E 34083 E | Si ⁺⁺ + Ar 33236 E | Si ⁺⁺ + H 34391 T |
| He ⁺⁺ + He 33358 E 33887 T | Si ⁺⁺ + He 33236 E | Si ⁺⁺ + Fe 33806 E |
| He ⁺⁺ + He 33887 T | Si ⁺⁺ + Ar 33236 E | Si ⁺⁺ + Fe 33806 E |
| He ⁺⁺ + Fe ⁺⁺ 33413 T | Si ⁺⁺ + He 33236 E | Si ⁺⁺ + Fe 33806 E |
| He ⁺⁺ + Fe 33455 E | Si ⁺⁺ + Ar 33236 E | Si ⁺⁺ + Fe 33806 E |
| He ⁺⁺ + Fe 34208 E | Si ⁺⁺ + He 33236 E | Si ⁺⁺ + Fe 33806 E |
| He ₂ ⁺ + He ₂ 34187 T | Si ⁺⁺ + Ar 33236 E | Si ⁺⁺ + Fe 33806 E |
| He ⁺⁺ + Si 33353 T | Si ⁺⁺ + He 33236 E | Si ⁺⁺ + Fe 33806 E |
| O + C 33773 T | Si ⁺⁺ + Ar 33236 E | Si ⁺⁺ + Fe 33806 E |
| O ⁺ + Si 34379 E | Si ⁺⁺ + He 33236 E | Si ⁺⁺ + Fe 33806 E |
| O ⁺ + H 34239 E | Si ⁺⁺ + Ar 33236 E | Si ⁺⁺ + Fe 33806 E |
| O ⁺ + He 33153 E | Si ⁺⁺ + He 33236 E | Si ⁺⁺ + Fe 33806 E |
| | | Si ⁺⁺ + Ar 33121 E |
| | | Si ⁺⁺ + He 33121 E |

C⁰⁰ • Mo 04209 E
 C⁰⁰ • Ar 04209 E
 C⁰⁰ • Mo 04209 E
 C⁰⁰ • Mo 04209 E
 C⁰⁰ • Ar 04261 E 04209 E
 C⁰⁰ • Mo 04261 E 04209 E
 C⁰⁰ • Mo 04061 E 04209 E
 Cl⁰⁰ • K 03229 E
 Cl⁰⁰ • Mo 03229 E
 Cl⁰⁰ • Ti 03229 E
 Cl⁰⁰ • K 03229 E
 Cl⁰⁰ • Mo 03229 E
 Cl⁰⁰ • Ti 03229 E
 Cl⁰⁰ • Ar 03229 E
 Cl⁰⁰ • K 03229 E
 Cl⁰⁰ • Mo 03229 E
 Cl⁰⁰ • Ti 03229 E
 Cl⁰⁰ • Ar 03229 E
 Cl⁰⁰ • K 03229 E
 Cl⁰⁰ • Mo 03229 E
 Cl⁰⁰ • Ti 03229 E
 Cl⁰⁰ • Ar 03229 E
 Cl⁰⁰ • K 03229 E
 Ca • O₂ 04261 E-T
 D⁰⁰ • Au 03120 E
 D⁰⁰ • H₂ 03191 E 03753 E-T
 D⁰⁰ • Mo 03563 E 03753 E-T
 D⁰⁰ • H 03123 E
 D⁰⁰ • Mo 03563 E

D⁰⁰ • Mo 03553 E
 Fe⁰⁰ • Mo 03239 E
 Fe⁰⁰ • H 03579 E
 Fe⁰⁰ • H 03579 E
 Fe⁰⁰ • H 03579 E
 Fe⁰⁰ • H 03579 E
 H • C 04092 E
 H • H 04092 E
 H • Al⁰ 04116 E
 H • Ar 04010 E
 H • Au 03762 E
 H • Au 03626 E 03795 E 04306 E
 H • Mo 03761 E
 H • Ni 03626 E
 H • C 04092 E
 H • Cd 03141 E
 H • Co 03762 E
 H • Dy 03626 E
 H • Ga⁰ 04116 E
 H • Gd 03299 E 04106 E
 H • Ge 03762 E
 H • H 03559 E 03770 E 04092 E
 H • H₂O 03211 E
 H • H₂ 03191 E 03753 E-T
 H • Mo 03150 E 03300 E 03000 E
 03523 E 03560 E 03753 E-T
 03770 E 03010 E 04062 E
 H • In⁰ 04116 E
 H • Li⁰ 04117 E
 H • Li 04359 E 04164 E 04282 E

H⁰⁰ • H₂ 04502 E
 H⁰⁰ • Mo 04502 E
 H⁰⁰ • Mo 03000 E 04082 E 04085 E
 H⁰⁰ • Ni 03762 E
 H⁰⁰ • Pb 03136 E 03626 E 04170 E
 04306 E
 H⁰⁰ • Pd 03762 E
 H⁰⁰ • PMBT 03670 E
 H⁰⁰ • Pt 04136 E
 H⁰⁰ • Sb 03762 E
 H⁰⁰ • Sb 03141 E
 H⁰⁰ • Sc 03762 E
 H⁰⁰ • Tl⁰ 04116 E
 H⁰⁰ • Tm 04136 E
 H⁰⁰ • Tm 03141 E
 H⁰⁰ • Th 03626 E
 H⁰⁰ • U 03626 E 04136 E
 H⁰⁰ • U 03626 E
 H⁰⁰ • Mo 03790 E
 H⁰⁰ • T 03762 E
 H⁰⁰ • Th 03626 E
 H⁰⁰ • U 03762 E
 H⁰⁰ • Mo 03563 E
 H⁰⁰ • Mo 03563 E
 H⁰⁰ • Ar 03799 E
 H⁰⁰ • Kr 03799 E
 H⁰⁰ • Xe 03799 E
 H⁰⁰ • Rf 03716 E 04310 E
 H⁰⁰ • Au 03299 E

Ho^o + CH₂
 33716 E
 Ho^o + CH
 33716 E
 Ho^o + CH₂
 33716 E
 Ho^o + H
 33916 T
 Ho^o + Ho^o
 33916 T
 Ho^o + Ho^o
 33777 E
 Ho^o + H₂
 33688 E 33716 E
 Ho^o + He
 33716 E 33732 E 34325 E
 Ho^o + Hg
 33421 E
 Ho^o + Ir
 33193 E
 Ho^o + Kr
 33716 E
 Ho^o + Li
 34168 E
 Ho^o + N₂
 33716 E
 Ho^o + Ne
 33293 E 33716 E
 Ho^o + O₂
 33716 E
 Ho^o + Pb
 33193 E
 Ho^o + PEST
 33678 T
 Ho^o + Pt
 33193 E
 Ho^o + R
 33299 E
 Ho^o + Cd
 33679 E
 Ho^o + H₂
 33679 E
 Ho^o + Ar
 33558 E 34044 E
 Ho^o + CH₂
 33558 E
 Ho^o + CO
 33558 E
 Ho^o + Cu
 33733 E
 Ho^o + H₂
 33329 E-T 33558 E
 Ho^o + H₂
 33117 E
 Ho^o + H₂
 33329 E-T 33558 E
 Ho^o + He
 33788 E

Ho^o + Ho^o
 33918 T
 Ho^o + Hg
 33449 E
 Ho^o + K
 33733 E
 Ho^o + Kr
 33558 E
 Ho^o + H₂
 33688 E
 Ho^o + Na
 33195 T
 Ho^o + Ne
 33288 T
 Ho^o + O₂
 33558 E 33733 E
 Ho^o + Pb
 33733 E
 Ho^o + Ar
 33765 E 34363 E 34361 E
 Ho^o + Au
 33123 E
 Ho^o + CH₂
 33765 E
 Ho^o + CO
 33765 E
 Ho^o + CO₂
 33765 E
 Ho^o + H₂
 33765 E 34363 E
 Ho^o + H₂
 33765 E
 Ho^o + He
 33152 E 33383 T 33765 E
 33918 T 34363 E 34361 E
 34085 T
 Ho^o + Kr
 33765 E
 Ho^o + Li
 34359 E 34168 E 34216 T
 34282 E
 Ho^o + H₂
 33765 E
 Ho^o + He
 33765 E 34363 E 34361 E
 Ho^o + O₂
 33765 E
 Ho^o + Pb
 33126 T 33912 E
 Ho^o + H
 33123 E 33912 E
 Ho^o + Yb
 33912 E
 Ho^o + Au
 33912 E
 Ho^o + Hg^o
 33171 F

I + Pb
 33268 T
 I + H
 33268 T
 K + He
 34261 E-T
 K + O₂
 34261 E-T
 K + He
 33119 E
 Li + Bi
 33433 T
 Li^o + He
 34258 E
 Li^o + He
 34363 E
 Li^o + Li
 34189 E
 Li^o + He
 33383 T
 Li^o + He
 33152 E
 Ho^o + He
 33546 E
 Ho^o + Ho^o
 33231 T 33329 E 33358 E
 33492 E
 Ho^o + Ar
 33116 T 33262 E 33321 E
 Ho^o + He
 33110 T 34215 T
 Ho^o + Ar
 34361 E
 Ho^o + Au
 34326 T
 Ho^o + Cd
 34326 T
 Ho^o + He
 34361 E
 Ho^o + He
 33118 E 34361 E 34215 T
 Ho^o + Pb
 34326 T
 Ho^o + Pt
 34326 T
 Ho^o + Ta
 34326 T
 Ho^o + Xe
 34228 E
 Hl + Pb
 34197 E
 O + Bi
 33433 T
 O^o + Ag
 33767 E
 O^o + Au
 33767 E

A08

HEAVY PARTICLE - HEAVY PARTICLE
INTERACTIONS

Stripping

Ar⁰⁺ + Ar
03798 EAr⁰⁺ + Ar
03798 EAr⁰⁺ + Ar
03798 EAr⁰⁺ + Ar
03798 EAr⁰⁺ + Ar
03798 EAr⁰⁺ + Ar
03798 EAr⁰⁺ + Ar
03798 EAr⁰⁺ + Ar
03798 EAr⁰⁺ + Ar
03798 EC⁰⁺ + H
08267 TC⁰⁺ + H
08267 TC⁰⁺ + H
08267 TC⁰⁺ + H
08267 TC⁰⁺ + H
08267 TC⁰⁺ + H
08267 TCa¹⁷⁺ + H₂
08256 EFe⁰⁺ + H
03570 TFe⁰⁺ + H
03570 TFe⁰⁺ + H
03570 TFe⁰⁺ + H
03570 THe⁰⁺ + Ar
03716 E 03771 THe⁰⁺ + CH₄
03716 EHe⁰⁺ + CO
03716 EHe⁰⁺ + CO₂
03716 EHe⁰⁺ + H₂O
03777 EHe⁰⁺ + H₂
03716 EHe⁰⁺ + He
03716 E 03771 THe⁰⁺ + Kr
03716 E 03771 THe⁰⁺ + N₂
03716 E 03771 THe⁰⁺ + He
03716 EHe⁰⁺ + O₂
03716 EHe⁰⁺ + PBDT
03771 THe⁰⁺ + Ar
03533 ELi⁰⁺ + H
03139 TLi⁰⁺ + H
03139 THe⁰⁺ + Ar
03226 EHe⁰⁺ + CH₄
03226 EHe⁰⁺ + He
03226 EHe⁰⁺ + Ar
03226 EHe⁰⁺ + CH₄
03226 EHe⁰⁺ + He
03226 EHe⁰⁺ + Ar
03226 EHe⁰⁺ + CH₄
03226 EHe⁰⁺ + He
03226 ES⁰⁺ + Ar
03236 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + C
03640 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + C
03640 ES⁰⁺ + He
03236 ES⁰⁺ + C
03640 ES⁰⁺ + Ar
03236 ES⁰⁺ + C
03640 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + C
03640 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + C
03640 ES⁰⁺ + He
03236 ES⁰⁺ + Ar
03236 ES⁰⁺ + C
03640 ES⁰⁺ + He
03236 ES⁰⁺ + He
08256 EV⁰⁺ + He
03600 EV⁰⁺ + He
03600 EV⁰⁺ + He
03600 EV⁰⁺ + He
03600 EV⁰⁺ + He
03600 EV⁰⁺ + He
03600 EV⁰⁺ + He
03600 E

$\text{K}^{\text{III}} + \text{Ag}$
 30162 E
 $\text{K}^{\text{III}} + \text{Al}$
 30162 E
 $\text{K}^{\text{III}} + \text{Au}$
 30162 E
 $\text{K}^{\text{III}} + \text{Ba}$
 30162 E
 $\text{K}^{\text{III}} + \text{Ca}$
 30162 E

$\text{K}^{\text{III}} + \text{B}$
 30162 E
 $\text{K}^{\text{III}} + \text{By}$
 30162 E
 $\text{K}^{\text{III}} + \text{Al}$
 30162 E
 $\text{K}^{\text{III}} + \text{Au}$
 30162 E

$\text{K}^{\text{III}} + \text{Ba}$
 30162 E
 $\text{K}^{\text{III}} + \text{Ca}$
 30162 E
 $\text{K}^{\text{III}} + \text{B}$
 30162 E
 Under
 33775 E

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**HEAVY PARTICLE - HEAVY PARTICLE
 INTERACTIONS**
 Recombination or Mutual Neutralization
 Leading to Neutral Products (ion-ion)

30110 T
 $\text{H}^+ + \text{H}^+$
 32581 E
 $\text{H}^+ + \text{H}_2^+$
 33313 E-T
 $\text{H}^+ + \text{He}^+$
 33942 T

$\text{He}^+ + \text{H}^+$
 33611 E
 Under
 33643 T

$\text{H}^+ + \text{H}^-$
 33491 T 33611 E 33832 T

A19
 HEAVY PARTICLE - HEAVY PARTICLE
 INTERACTIONS

Collisional De-Excitation

Ar + H₂
 03301 E-T 02517 T

Ar⁺ + H₂
 03128 E

Ar⁺ + H₂
 04104 E

C₂H₂⁺ + Ar
 07078 E

C₂H₂⁺ + CO
 03878 E

C₂H₂⁺ + O₂
 03878 E

C₂H₂⁺ + He
 03878 E

C₂H₂⁺ + H₂
 03878 E

C₂H₂⁺ + Kr
 03878 E

C₂H₂⁺ + Ne
 03878 E

C₂H₂⁺ + B₂
 03878 E

C₂H₂⁺ + Zn
 03878 E

Ca⁺ + CO
 03877 E

Ca⁺ + B₂
 03877 E 03878 E

Ca⁺ + H₂
 03877 E 03878 E

Ca⁺ + H₂
 03877 E

Ca⁺ + Kr
 03877 E

Ca⁺ + Ar
 03795 E

Ca⁺ + He
 03795 E

Ca⁺ + H₂
 03085 T 03316 T 03319 T

Ca⁺ + He
 04269 T

Ca⁺ + H₂
 03498 E

Ca⁺ + O₂
 03098 E

Ca + OH + Mo
 03001 E

Ca⁺ + Ca
 03567 E

O₂⁺ + B₂
 03292 E

Z + Ca
 03370 T

H + E
 03370 T

N + Li
 03170 T

H + Na
 03370 T

X + Rb
 03370 T

H⁺ + Ar
 03453 E

H⁺ + He
 03453 E 03711 T

H⁺ + Kr
 03453 E

H⁺ + Ne
 03453 E

H⁺ + Zn
 03453 E

H₂⁺ + Fe + He
 03902 T

H₂⁺ + H₂O
 03850 E

He + H₂⁺
 03504 E

He + He⁺
 03904 E

He + H₂
 03301 E-T

He⁺ + B₂
 03329 E-T

He⁺ + H₂
 03117 T

He⁺ + H₂
 03329 E-T

He⁺ + He
 03174 E

He⁺ + Ag
 03449 E

He⁺ + H₂
 03688 E

He⁺ + He
 03088 T

Kr⁺ + Xe
 03193 E

Li⁺ + Ar
 03356 E

Li⁺ + He
 03356 E

Li⁺ + Li
 03356 E

Li⁺ + He
 03356 E

Hg⁺ + He
 03573 E

H₂⁺ + H₂
 03336 E

H₂⁺ + O₂
 03336 E

H₂⁺ + O⁺
 03083 E

H₂⁺ + O₂
 03498 E 04264 E

He⁺ + Na
 03266 E

He⁺ + Ar
 03355 E 04120 T

He⁺ + He
 03355 E 03518 T

He⁺ + Kr
 03355 E

He⁺ + Hg⁺
 03760 E

He⁺ + He
 03355 E 03711 T 04120 T

He⁺ + Fe
 03355 E 04120 T

He⁺ + Ar
 03116 E

He⁺ + He
 03620 E

He⁺ + CO₂
 03843 E

He⁺ + B₂
 03843 E

He⁺ + CO
 03843 E

He⁺ + CO₂
 03843 E

He⁺ + H₂O
 03843 E

He⁺ + H₂
 03843 E

He⁺ + H₂
 03843 E

He⁺ + H₂
 03843 E

He⁺ + H₂
 03843 E

He⁺ + O₂
 03843 E

H₂⁺ + Ar
 03355 T 03309 E

H₂⁺ + B₂
 04125 E

H₂⁺ + H₂
 04125 E

H₂⁺ + He
 03355 T 03300 E 03518 T
 04125 E

He⁺ + He
 03650 E
 He⁺ + Kr
 03355 T 03300 E
 He⁺ + Rn
 03300 E
 He⁺ + He
 03355 T 03300 E 03711 T
 04120 T
 He⁺ + He
 03300 E 03756 E
 He⁺ + He
 03355 T 03300 E 03510 T
 Ar⁺ + He
 03002 E

Ar⁺ + He
 03002 E
 Ar⁺ + He
 03077 E
 Xe⁺ + Ar
 03355 T
 Xe⁺ + He
 03355 T
 Xe⁺ + Kr
 03355 T
 Xe⁺ + He
 03355 T

Xe⁺ + He
 03355 T
 Yb⁺ + Ar
 03713 E
 Yb⁺ + He
 03710 E 03709 E-T
 Yb⁺ + He
 03709 E-T
 Yb⁺ + He
 03709 E-T

A12
 HEAVY PARTICLE - HEAVY PARTICLE
 INTERACTIONS
 Collisional Line Broadening

He + Ar
 03400 E
 Ca + He
 C-475 T
 He + He
 03504 T
 He + He
 03504 T

He + He
 03500 T
 He + He
 03500 T
 He + He
 03500 T
 He + He
 03672 T
 He + He
 03535 T
 He + He
 03776 T

He + He
 03376 T
 He + Ar
 03125 E
 He + S
 03105 E
 He + He
 03105 E
 He + He
 03907 E-T
 He + He
 03172 E
 He + He
 03702 T

A10

**GRAVY PARTICLE - GRAVY PARTICLE
INTERACTIONS**

*Heavy Particle Interactions (most
involve some form of hydrogen or
helium)*

Ar⁺ + D₂ E
03009 E

Ar⁺ + He
03009 E

Ar⁺ + HD
03009 E

Ar₂⁺ + H₂ E
04265 E

Cl⁺ + O₂ E
04753 E

Cl⁺ + D₂ E
03004 E

Cl⁺ + H₂ E
03004 E

Cl⁺ + HD
03004 E

Cl⁺ + T₂ E
03004 E

D⁺ + H₂ E
03305 E 03330 E 03443 E
03605 E 04263 E

D₂⁺ + H₂ E
03011 E

F⁺ + D₂ E
03330 E 03010 E 03007 E

F⁺ + H₂ E
03315 E 03333 E 03010 E
03007 E 00266 E

F⁺ + HD
03330 E 03007 E

H⁺ + C₂H₄ E
03000 E

H⁺ + D₂ E
03327 E 03603 E 03052 E
04263 E

H⁺ + H₂O
03000 E

H⁺ + H₂ E
03331 E 03605 E 03000 E

H⁺ + O₂ E
03000 E 04106 E

H⁺ + D₂ E
03000 E

H₂⁺ + OH
03000 E

H₂⁺ + D₂ E
03011 E

H₂⁺ + H₂ E
03616 E

HD + D
03327 E

He⁺ + He + He
04267 E

HO₂ + HO₂ E
03073 E

K + OH + He
03000 E

K⁺ + H₂ E
03000 E

H⁺ + OH
03300 E

Na + OH + He
03000 E

O⁺ + D₂ E
03323 E 04273 E

O⁺ + H₂ E
03323 E 04273 E

O⁺ + HD
03323 E 04273 E

O⁺ + OH
04153 E

O⁻ + D₂ E
03335 E

O⁻ + H₂ E
03335 E

OH + H₂O
03073 E

OH + H₂ E
03320 E 03445 E 03073 E
04106 E

Rb + OH + He
03000 E

S⁻ + D₂ E
03335 E

S⁻ + H₂ E
03335 E

Review
04102 E

Unlabeled
03202 E-T

A16

HEAVY PARTICLE - HEAVY PARTICLE
INTERACTIONS

Electron Detachment from Negative Ions
into Continuum

He⁻ + Ar 03469 E
 He⁻ + Ne 03469 E
 He⁻ + Kr 03469 E
 He⁻ + Xe 03469 E
 He⁻ + Zn 03469 E
 C⁻ + He 04058 E
 Cl⁻ + B₂ 04114 E
 Cl⁻ + O₂ 04114 E
 F⁻ + Ar 03458 E 03616 E
 F⁻ + H 03458 E
 F⁻ + H₂ 03458 F
 F⁻ + He 03616 E

F⁻ + Kr 03616 E
 F⁻ + Br 03616 E
 F⁻ + He 03616 E
 He⁻ + Ar 03373 T 03458 E 03616 E
 He⁻ + CO 03142 E
 He⁻ + CO₂ 03142 E
 He⁻ + D₂ 03142 E
 He⁻ + H 03458 E 03725 T
 He⁻ + H₂ 03458 E 03725 T
 He⁻ + He 03351 T 03616 E
 He⁻ + H₂ 03768 E
 He⁻ + Kr 03616 E
 He⁻ + H₂ 03142 E
 He⁻ + He 03725 E
 He⁻ + He 03616 E 03725 T
 He⁻ + O₂ 03142 E

He⁻ + He 03616 E
 He⁻ + Ar 03478 E 04064 E
 He⁻ + Ne 03478 E
 He⁻ + Kr 03478 E
 He⁻ + He 03478 E 04064 E
 He⁻ + He 03478 E
 He⁻ + Ar 03478 E
 He⁻ + He 03478 E
 He⁻ + Kr 03478 E
 He⁻ + He 03478 E
 He⁻ + Xe 03478 E
 O⁻ + B₂ 03335 E
 O⁻ + H₂ 03335 E
 S⁻ + B₂ 03335 E
 S⁻ + H₂ 03335 E

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HEAVY PARTICLE - HEAVY PARTICLE INTERACTIONS

Interaction Potentials

Al⁺ • H 33789 E-T
 Al⁺ • H 31999 E-T
 Ar • Ar 03307 E-T
 Ar • H₂ 03739 T
 Ar • H₂ 33321 E-T
 Ar⁺ • He 33217 T
 B⁺ • He 32796 T
 Ba • Ba 03012 T
 C⁻ • He 04050 E
 Cd⁺ • H₂ 33310 T
 Ca • Ca 33030 T
 Ca • H₂ 33932 T
 Ca • He 03625 T
 D • He 04271 E
 F • H₂ 04266 T
 H • Cu 03370 T
 H • H₂ 03327 T
 H • H 33752 T 33030 T
 H • H₂ 03331 T
 H • He 04005 T
 H • K 33370 T
 H • Li 03370 T 03030 T
 H • Na 03370 T
 H • Pb 03370 T
 H • Te 03609 T

H⁺ • H₂ 33712 T
 H⁺ • He 30305 T
 H⁻ • He 33723 E
 H₂⁺ 33504 T 33636 E
 H₂⁺ • H 33712 T
 H₂ 03337 T 03506 T 03606 E
 H₂ • D 03327 T
 He • CH₄ 04274 E
 He • F 03376 E-T
 He • H₂ 33376 E-T 33600 T 33799 T 33932 T
 He • He 33030 T 30155 T 30271 E
 He • Li 33030 T
 He • H₂ 33357 T
 He • H₂ 03301 E-T
 He⁺ • H₂ 33357 T
 He⁺ • H₂ 33329 E-T
 He⁺ • He 33329 E-T 33703 E
 He⁺ • H₂ 33680 E
 He⁺ • He 33195 T
 He⁺ • He 33179 T 33050 T
 He⁺ • H 33303 T
 He⁺ • H₂ 33357 T
 HHe⁺ 33506 T
 H • H₂ 03030 T
 H • H 33470 T
 H • Pb 33030 T
 HHe 33057 T
 HHe 33057 T

KHe 33057 T
 Kr⁺ • Ar 33537 E
 KHe 33057 T
 Li • H 33030 T
 Li • H₂ 33932 T
 Li • Li 03000 T 03030 T
 Li⁺ • H₂ 03930 T
 Li⁺ • He 04155 T
 Li⁺ • H 03691 T
 Li⁺ • H 33077 T
 Mg • H₂ 03607 T
 Na • H₂ 04250 T
 Na⁻ 34206 T
 Na 04206 T
 Na • H₂ 03930 T 04104 T
 Na • K 03592 T
 Na • K⁺ 33592 T
 Na • Na 03404 T
 Na⁺ • H 33937 T
 Na⁺ • H₂ 33576 T
 Na⁺ • He 33350 E
 NaHe 03057 T
 NaHe 03057 T
 NaHe 03057 T
 Ne • CH₄ 04251 E
 Ne • H₂ 03730 T
 Ne⁺ • He 33612 T
 Ne⁺ • H₂ 33099 T

He⁺ • He₂
03530 T

He⁺ • He
03604 T

He⁺ • He
03537 E

He⁺ • He
03537 E

A10

HEAVY PARTICLE - HEAVY PARTICLE
INTERACTIONS

Angular Scattering

Ar⁺ • Ar
03713 E

Ar⁺ • D₂
04170 E

Ar • H
03268 T

Cl⁺ • Ar
03265 E

D • H₂
03330 T

D⁺ • D
01307 E-T

D⁺ • H
01307 E-T

D₂⁺ • He
04138 E

F • D₂
03330 E

F • H₂
03333 E

F • He
03330 E

F⁺ • He
03239 T

H • He
03768 E

H • He
03767 E

He⁺ • Al
03502 T

He⁺ • Ar
03359 E

He⁺ • He
03761 E

He⁺ • CH₄
03174 E

He⁺ • D
03307 E-T

He⁺ • D₂
03182 E

He⁺ • H
03222 T 03307 E-T 03020 T
03506 T 03629 T 03936 T
04131 T

He⁺ • H₂
03182 E 03712 T

He⁺ • He
03272 T 03307 E-T 03501 T
03523 E 03736 T 03737 E-T
03827 T 03929 E 04087 T
04099 T 04180 T

He⁺ • He
03768 E

He⁺ • H₂
03126 E

He⁺ • CO₂
03261 E

He⁺ • H
03725 T

He⁺ • H₂
03201 E 03725 T

He⁺ • He
03351 T

He⁺ • He
03768 E

He⁺ • H₂
03261 E

He⁺ • He
03725 T

He⁺ • O₂
03261 E

He⁺ • Ar
04127 E

He⁺ • He
04127 E

He⁺ • He
04128 E

He⁺ • He
04128 E

He⁺ • He
04128 E

He⁺ • CH₄
04252 E

He⁺ • He
03501 T

He⁺ • H₂
03301 E-T 03312 T 03602 E-T

He⁺ • O₂
03642 E-T

He⁺ • D₂
03329 E-T

He⁺ • H₂O
03117 T

He⁺ • H₂
03329 E-T

He⁺ • He
03195 T

I • Pb
03268 T

I • S
03268 T

Li • H
03433 T

Li⁺ • H
04047 E

Li⁺ • He
03259 E

Ne⁺ • He
04350 E 04381 E

Ne⁺ • He
04071 E

Ne⁺ • He
04071 E

Ne⁺ • CO
03009 E

Ne⁺ • H₂
03009 E

Ne⁺ • He
03306 T

Ne⁺ • He
03395 E

Ne⁺ • He
03456 T

Ne⁺ • He
03255 E

Ne • C₂
04251 E

Ne⁺ • He
04076 E

O • Al
03433 T

OH • H₂
03313 T

Si⁺ • Ar
03239 T

A20

HEAVY PARTICLE - HEAVY PARTICLE
INTERACTIONS

Attenuation (unspecified process)

 $D_2^+ \cdot Cu$
04111 F $D_2^+ \cdot Cu$
34113 E $H^+ \cdot Ag$
34124 E $H_2^+ \cdot Cu$
34113 E $H_2^+ \cdot Cu$
34113 E $He^+ \cdot He$
33619 E

B01

INTERACTIONS OF ATOMIC PARTICLES WITH
FIELDSInteraction of Individual Atoms or
Molecules with External fields• $04172 T$ H $03269 T$ H^+
33124 E $H^+ \cdot 2hv$
33815 E H^-
33248 T He^+
33258 T $hv \cdot He^+$
33852 E $2hv \cdot K$
34179 E $2hv \cdot Na$
34179 E He^+
33745 EUnidif
33225 T 33746 T 33747 T
04176 T

B07

INTERACTIONS OF ATOMIC PARTICLES WITH
FIELDSCollisions in Presence of Static or
Time Varying Fields• $H \cdot hv$
33645 T• $hv \cdot Ag$
33647 TF $H_2 \cdot hv$
33845 TF H_2
33932 T $H^+ \cdot He$
33937 T $H^+ \cdot H$
33376 T $H^+ \cdot H^+$
33376 T $He^+ \cdot He$
33241 T $He^{++} \cdot H$
33152 T $hv \cdot O$
33667 T $hv \cdot H$
33425 T 33568 T $hv \cdot H^+$
33214 E 33464 E 33804 E
33885 T $2v \cdot He$
33646 T $hv \cdot O^+ \cdot H$
34284 T $hv \cdot H^+$
33382 E-T $hv \cdot He$
33545 E $hv \cdot Th$
33594 E $K^+ \cdot He$
33216 T $Li^+ \cdot H$
34477 T $nhv \cdot Cu$
33213 E $nhv \cdot He$
33572 T $Sz \cdot Cu$
33933 TUnidif
33609 T 33750 T 33772 T
04165 T 04292 T

C01

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

General

• • Ag
03090 Z

C02

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

Energy Loss and Stopping Power

Ag⁺ • Ag
03700 T

Al⁺ • Ag
03700 T

Ar • Cu
03177 T

Be⁺ • Ag
03700 T

C⁺ • Ag
03700 T

Cu • Cu
03177 T

• • Al
03001 T 03159 B⁻ 03702 T

• • Au
03159 Z-T

• • Be
03001 T

• • C
03512 Z

• • H₂O
03495 T

• • Si
03160 T 03495 T

H⁺ • Ag
03700 T

H⁺ • Al
03700 T

H⁺ • Au
03000 T

H⁺ • Be
03700 T

H⁺ • Cu
03946 T

H⁺ • Fe
03700 T

H⁺ • H₂O
03409 T

H⁺ • U
03700 T

He⁺ • C
03950 Z

He⁺ • Cu
03177 T

Li⁺ • Ag
03166 Z

Li⁺ • Al
03166 Z

Li⁺ • Au
03166 Z

Li⁺ • C
03166 Z

Li⁺ • Si
03166 Z

Li⁺ • Si
03166 Z

Ne • Cu
03177 T

Pb • Si
03100 Z-T

Pi⁺ • Ag
03700 T

S⁺ • Ag
03700 T

Te • Cu
03177 T

Unid⁺
03300 T 03701 T

C00

PARTICLE PENETRATION IN MICROSCOPIC
MATTER (IONS, NEUTRONS, AND ELECTRONS)

Particle Range

As* • Cu
03602 T

As* • Ni
03602 T 33092 T 30140 T

As* • NiS
03602 T

As* • Ni
03696 E 30140 T

B* • Si
03696 E 33092 T

Bi* • Cu
03602 T

Bi* • Pb
03700 T

Bi* • Ni
03602 T 30140 T

Bi* • NiS
03602 T

Co* • Ni
00140 T

• Ag
00151 T

• C
33512 T

• Cd
30151 T

• Co
30151 T

• Li
30151 T

• Pb
00151 T

• Pt
00151 T

• Si
33163 T 30151 T

• Sn
30151 T

• Ti
30151 T

• S
30151 T

Ge* • Ni
03200 E

H* • PMMT
33797 T

H* • Ni
03050 E

He* • SiC
33163 T

Is* • Si
30140 T

P* • Cu
33602 T

P* • Ni
33602 T

P* • NiS
33602 T

Pb* • Ni
30140 T

PMT* • Si
33203 T

Pt* • Si
30140 T

Sh • Ni
33103 E-T

Sb* • Cu
33602 T

Sb* • Ni
33602 T 30140 T

Tb* • NiS
03602 T

Ti* • Ni
30140 T

U* • Ni
30140 T

Uc* • Ni
30140 T

Uc* • CuS
33092 T

C05

PARTICLE PENETRATION IN MICROSCOPIC
MATTER (IONS, NEUTRONS, AND ELECTRONS)

Multiple Scattering

As* • Ni
33092 T

B* • Ni
33092 T

• H₂O
03695 T

• Si
33163 T 33695 T

He* • CuS
33092 T

Under
03167 T

C06
PARTICLE PENETRATION IN MICROSCOPIC
MATTER (IONS, NEUTRALS, AND ELECTRONS)

Charge State Population

Ar⁺ • PNET
 33455 E

Ar²⁺ • Ar
 34133 E

Ar³⁺ • Ar
 34133 E

C⁺ • PNET
 33455 E

C²⁺ • C
 33521 E

H⁺ • C
 33729 E

He⁺ • C
 33729 E

He₂⁺ • Ar
 04139 E

Li • Cu
 03396 E

Li • Hg
 33396 E

Li • Sr
 33396 E

Li⁺ • Ca
 33396 E

Li⁺ • Hg
 33396 E

Li⁺ • Sr
 33396 E

Li⁻ • Cu
 33396 E

Li⁻ • Hg
 33396 E

Li⁻ • Sr
 33396 E

H₂⁺ • C
 03475 E

He⁺ • PNET
 33455 E

He²⁺ • C
 33443 E

C07
PARTICLE PENETRATION IN MICROSCOPIC
MATTER (IONS, NEUTRALS, AND ELECTRONS)

Excited State Population

Ar⁺ • PNET
 33455 E

C⁺ • PNET
 33455 E

C²⁺ • C
 33921 E

H • C
 33189 E

H⁺ • C
 33189 E 33729 E

H₂⁺ • C
 33189 E

He⁺ • C
 33729 E

Li⁺ • C
 33196 E

Hg²⁺ • C
 33219 E

He⁺ • PNET
 33455 E

He²⁺ • C
 33932 E

D01
PARTICLE INTERACTIONS WITH SOLID
SURFACES

General

Ar⁺ • Cu
 33352 E

Unfold
 33704 T 33944 T

842

PARTICLE INTERACTIONS WITH SOLID SURFACES

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

| | | |
|---|---|---|
| Ar ⁺ + [Pa + Cr + Ne] 03429 E | Ca ⁺ + Au 03897 T | Hg ⁺ + W 04260 T |
| Ar ⁺ + Au 03425 E 03699 E-Y | Ca ⁺ + Si 03897 T | Hg ⁺ + Zr 04260 T |
| Ar ⁺ + Cr + Ne 03975 E | Ca ₂ ⁺ + Au 03897 T | Hg ⁺ + Ag 03251 E |
| Ar ⁺ + Cu 03697 E | Ca ₂ ⁺ + Si 03897 T | Hg ⁺ + Au 03251 E |
| Ar ⁺ + Ge 03697 E 03698 T | H ⁺ + W + Cu 03898 T | Hg ⁺ + [Bi + Cu] 03432 E |
| Ar ⁺ + Hl 03425 E | H ₂ ⁺ + W + Cu 03898 T | Hg ⁺ + Si 03277 E |
| Ar ⁺ + PRT 03865 T | H ₂ ⁺ + W + Cu 03898 T | Hg ⁺ + SiO ₂ 03898 E |
| Ar ⁺ + Pt 03697 E | Hg ⁺ + SiO ₂ 03898 E | O ⁺ + Au 03897 T |
| Ar ⁺ + SiO ₂ 03898 E | Hg ⁺ + Ag 04260 T | O ⁺ + Si 03897 T |
| Cl ⁺ + Au 03897 T | Hg ⁺ + Au 04260 T | O ₂ ⁺ + Au 03897 T |
| Cl ⁺ + Si 03897 T | Hg ⁺ + Co 04260 T | O ₂ ⁺ + Si 03897 T |
| Cl ₂ ⁺ + Au 03897 T | Hg ⁺ + Cu 04260 T | S ⁺ + Au 03897 T |
| Cl ₂ ⁺ + Si 03897 T | Hg ⁺ + Fe 04260 T | S ⁺ + Si 03897 T |
| Cs ⁺ + W + Cu 03898 T | Hg ⁺ + Mo 04260 T | Te ⁺ + Au 03897 T |
| e ⁻ + Ar 03427 T | Hg ⁺ + Nb 04260 T | Te ⁺ + Si 03897 T |
| | Hg ⁺ + Pt 04260 T | Te ⁺ + SiO ₂ 03898 E |
| | Hg ⁺ + Ta 04260 T | Review 03250 E |
| | Hg ⁺ + Ti 04260 T | Index 03161 T |

D03

PARTICLE INTERACTIONS WITH SOLID
SURFACESSputtered Particle Charge and Quantum
(Excited) State DistributionAr⁺ + Cu
03162 ZAr⁺ + CO
03160 Z 03169 ZAr⁺ + CO₂O
03162 ZAr⁺ + Cr
03162 ZAr⁺ + Cr₂O₃
03162 ZAr⁺ + Cu
03162 ZAr⁺ + CuO
03162 ZAr⁺ + Ga
03969 ZAr⁺ + H₂O
03160 Z 03169 ZAr⁺ + NH₃
03160 Z 03169 ZAr⁺ + Si
03162 Z 03969 ZAr⁺ + TiO
03162 ZAr⁺ + Pt₂Pb
03370 ZAr⁺ + Si
03899 Z 03969 ZAr⁺ + TiO₂
03899 ZAr⁺ + Ti
03162 ZAr⁺ + TiO₂
03162 ZAr⁺ + Zn
03162 ZAr⁺ + ZnO
03162 ZH⁺ + CO
03169 ZH⁺ + H₂O
03169 ZH⁺ + NH₃
03169 ZH₂⁺ + CO
03160 Z 03169 ZH₂⁺ + H₂O
03160 Z 03169 ZH₂⁺ + NH₃
03160 Z 03169 ZHe⁺ + CO
03160 Z 03169 ZHe⁺ + H₂O
03160 Z 03169 ZHe⁺ + NH₃
03160 Z 03169 ZO₂⁺ + Si
03164 ZReview
03253 ZIndex
03954 Z 03973 Z

DOA

PARTICLE INTERACTIONS WITH SOLID
SURFACESSecondary Electron Ejection by Heavy
Particles and ElectronsAr⁺ + Al
03960 B-TAr⁺ + Cu
03971 EAr⁺ + Zn
03971 EAr⁺ + W
04076 EAr²⁺ + C
04076 EAr²⁺ + W
04076 EAr²⁺ + W
04076 EAr²⁺ + W
04076 EAr²⁺ + W
04076 EAr²⁺ + W
04076 EAr²⁺ + W
04076 EAr²⁺ + W
04076 Ee⁻ + W
03289 EH⁺ + Cu
03971 EH⁺ + Zn
03971 EHe⁺ + Cu
03971 EHe⁺ + Zn
03971 EHe⁺ + Cu
03971 EHe⁺ + Zn
03971 EKr⁺ + Cu
03971 EKr⁺ + Zn
03971 EKr²⁺ + W
04076 EKr²⁺ + W
04076 EKr²⁺ + W
04076 EKr²⁺ + W
04076 EKr²⁺ + W
04076 EKr²⁺ + W
04076 EH²⁺ + W
04076 EH²⁺ + W
04076 EH²⁺ + W
04076 EHe²⁺ + W
04076 EHe²⁺ + Cu
03971 EHe²⁺ + Zn
03971 EHe²⁺ + W
04076 EHe²⁺ + W
04076 EHe²⁺ + W
04076 EHe²⁺ + W
04076 EHe²⁺ + W
04076 EHe²⁺ + W
04076 EHe²⁺ + W
04076 EXe⁺ + Cu
03971 EXe⁺ + Zn
03971 EReview
03253 EUpdate
03274 E-T

905

PARTICLE INTERACTIONS WITH SOLID SURFACES

Photoelectric Ejection of Electrons (coefficients)

hv • Al
04187 T

hv • Cu
03648 E

hv • Cu
03185 E-T 04187 T

hv • Dy
03648 E

hv • Si
03781 E

hv • Th
04187 T

hv • Y
03648 E

hv • Yb
03648 E

Under
03367 T

906

PARTICLE INTERACTIONS WITH SOLID SURFACES

Reflection of Electrons from Surfaces (coefficients)

• • Ag
03082 E 03961 T

• • Al
03082 E 03159 E-T 03704 T
03961 T

• • Au
03082 E 03159 E-T 03704 T

• • C
03961 T

• • Cu
03082 E 03961 T

• • Fe
03961 T

• • Ge
03961 T

• • Ho
03961 T

• • Si
03961 T

• • V
03961 T

907

PARTICLE INTERACTIONS WITH SOLID SURFACES

Reflection of Heavy Particles from Surfaces (total reflection coefficients)

Ar • Cu
03949 E

Ar • Be
03700 T

Ar • Hg
04275 E

Ar • Hg(OH)₂
04275 E

Ar • HgO
04275 E

Ar • Y
04275 E

Ar • Y₂O₃
04275 E

Ar • Y(OH)₃
04275 E

H₂ • Cu
03949 E

He • Cd
03423 T

He • Cu
03949 E

He • Pt
03422 T

He • Zn
03423 T

He • Zn • Ar
03424 T

H₂ • Cu
03949 E

H₂ • Cu
03431 T 04256 E

He • Pt
03965 T

He • Cu
03949 E

He • Hg
04275 E

He • Hg(OH)₂
04275 E

He • HgO
04275 E

He • TI
03976 T

He • Y
04275 E

He • Y₂O₃
04275 E

He • Y(OH)₃
04275 E

He • C
03371 E

He • NaCl
03838 E

Under
03426 T 03783 T 03961 T
03964 T 03976 T 03978 T
03979 T

DOO

PARTICLE INTERACTIONS WITH SOLID SURFACES

Charge and Quantum State Distributions of Reflected Heavy Particles

Ar⁺ + Hg
04275 EAr⁺ + Hg(000)₂
04275 EAr⁺ + HgO
04275 EAr⁺ + Si
04222 EAr⁺ + H
03669 EAr⁺ + I
04275 EAr⁺ + I₂O₂
04275 EAr⁺ + I(00)₂
04275 EAr⁺ + H
03669 EAr⁺ + H
03669 EAr⁺ + H
03669 EAr⁺ + H
03669 EAr⁺ + H
03669 EAr⁺ + H
03669 EAr⁺ + H
03669 EAr⁺ + H
03669 EAr⁺ + H
03669 EAr⁺ + H
03669 ECl⁺ + C
04226 ECa⁺ + Cu + H
03839 ED⁺ + C
04221 ED₂⁺ + C
04221 ED₃⁺ + C
04221 EH₂⁺ + Au
04283 EHe⁺ + He
03981 EHe⁺ + H
03980 E-TKr⁺ + H
03669 EKr⁺ + H
03669 EKr⁺ + H
03669 EKr⁺ + H
03669 EKr⁺ + H
03669 EKr⁺ + H
03669 ELi + C
04220 ELi + Cu
04220 EN⁺ + H
04220 EN₂⁺ + Cu
03801 EN⁺ + H
04221 ENe⁺ + Cu
03308 ENe⁺ + Cu
03308 E 03967 ENe⁺ + Hg
04275 ENe⁺ + Hg(00)₂
04275 ENe⁺ + HgO
04275 ENe⁺ + H
03669 ENe⁺ + I
04275 ENe⁺ + I₂O₂
04275 ENe⁺ + I(00)₂
04275 ENe⁺ + H
03669 ENe⁺ + H
03669 ENe⁺ + H
03669 ENe⁺ + H
03669 ENe⁺ + H
03669 ENe⁺ + H
03669 ENe⁺ + H
03669 ENe⁺ + H
03669 ENO + Ag
03966 E-T 04320 ENO + C
03371 ENO + Cu
04270 ENO + H
04220 EUndes
03976 E

D09

PARTICLE INTERACTIONS WITH SOLID SURFACES

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

CO⁺ • Ag
33325 ZCO₂⁺ • Ag
33325 ZH⁺ • CuO
33842 TH₂ • Ti • Cu
33782 TH₂⁺ • Bi
33837 THe⁺ • He
33981 THe⁺ • F
33151 T 33983 Z-THe⁺ • Cu • Cu
33863 TKCl • He
33316 TNe⁺ • S
33322 ZNe⁺ • Au
33842 TNe⁺ • Cu
33967 LSO₂ • Pd
33925 ZVadoc
33956 T

D11

PARTICLE INTERACTIONS WITH SOLID SURFACES

Sticking Coefficients, Thermal Energies and Absorption

CO • C
33901 VCO • Bi
33874 VCO • Pt
33972 VD₂ • Cu
34321 VH₂ • Cu
33818 T 34321 VH₂ • CuBr
33871 TH₂ • Bi
33977 TH₂ • Pt
33972 VHD • Cu
33814 THe • Cu
33824 THe • S
33828 THO • Ag
33851 THO • Pt
33833 T 33851 TO₂ • Pt
33332 LSO₂ • Pd
33925 Z

D12

PARTICLE INTERACTIONS WITH SOLID SURFACES

Electromagnetic Radiation Induced by Electron or Heavy Particle Impact on Surfaces

| | | |
|--|---|--|
| Ag ⁺ + Pb 03594 F | e + C 73723 F | H ₂ ⁺ + Si 33267 E |
| Ag ⁺ + Pt 33593 F | e + Cd 30149 E 30150 E | He ⁺ + Au 33267 E 33299 E |
| Ag ⁺ + Ta 33598 F | e + Cu 30149 E 30150 E | He ⁺ + Cu 33267 E |
| Ag ⁺ + Th 33598 F | e + I 00150 E | He ⁺ + Ir 33193 E |
| Ag ⁺ + W 33598 F | e + Li 33793 E-T | He ⁺ + Pb 33193 E |
| Ag ⁺ + Yb 33598 F | e + Ne 30150 E | He ⁺ + Pt 33193 E |
| Ar ⁺ + Ag 30275 F | e + Pb 30149 E 30150 E | He ⁺ + Si 33267 E |
| Ar ⁺ + Ag(OH) ₂ 30275 F | e + Ta 30149 E | He ⁺ + U 33299 E |
| Ar ⁺ + H ₂ O 30275 F | e + V 30236 E | He ⁺ + Al 33833 E |
| Ar ⁺ + Y 30275 F | e + W 33787 F | He ⁺ + Au 33833 E |
| Ar ⁺ + Y ₂ O ₃ 30275 F | H ⁺ + Au 33267 E 33626 E | He ⁺ + Ho 33833 E |
| Ar ⁺ + Y(OH) ₃ 30275 F | H ⁺ + Bi 33626 E | He ⁺ + Ho 33833 E |
| Ce ⁺ + Al 33877 F | H ⁺ + Co 33608 E | He ⁺ + Pb 33833 E |
| Ce ⁺ + Au 33877 F | H ⁺ + Cu 33257 E 33608 E | He ⁺ + Re 33833 E |
| Ce ⁺ + Bi 03000 F | H ⁺ + Dy 33626 E | He ⁺ + Tl 33833 E |
| Ce ⁺ + Bi 33833 F | H ⁺ + Gd 33299 E | Kr ⁺ + PERRY 33243 F |
| Ce ⁺ + Pb 33877 F | H ⁺ + Hg 33608 E | He ⁺ + Hg 30275 E |
| Ce ⁺ + Po 03000 F | H ⁺ + Pb 33626 E | He ⁺ + Ag(OH) ₂ 00275 E |
| Ce ⁺ + Th 33877 F | H ⁺ + Si 03267 F | He ⁺ + HgO 00275 E |
| e + Ag 30153 F | H ⁺ + Th 33626 E | He ⁺ + Y 30275 E |
| e + Al 33723 F | H ⁺ + U 33626 E | He ⁺ + Y ₂ O ₃ 00275 E |
| e + Au 30136 F | H ⁺ + W 03626 F | He ⁺ + Y(OH) ₃ 00275 E |
| e + Bi 03723 F | H ⁺ + Yb 33626 E | Ti ⁺ + PERRY 33243 F |
| | H ⁺ + Zn 33608 E | Review 33253 E |
| | H ₂ ⁺ + Au 33267 E | Index 33231 F 33232 F |
| | H ₂ ⁺ + Cu 33267 E | |

D13
PARTICLE INTERACTIONS WITH SOLID SURFACES

Description of Gases from Surfaces

• C + W
03952 T

• Cu
03795 T

• F + W
03952 T

• H + Hb
03952 T

• H + H₂
03952 T

• H + W
03952 T

• O + Ho
03952 T

• O + Hb
03952 T

• O + Pt
03952 T

• O + Ti
03952 T

• O + W
03952 T

H⁺ + Ti
03693 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

H₂⁺ + CuI
03861 P

hv + C + W
03952 T

hv + CO
03949 P

hv + F + W
03952 T

hv + H + Hb
03952 T

hv + H + H₂
03952 T

hv + H + W
03952 T

hv + H₂O
03953 T

hv + H₂O
03948 E

hv + H₂
03949 E

hv + HO
03949 E

hv + HO + LiF
03317 T

hv + O + Ho
03952 T

hv + O + Hb
03952 T

hv + O + Pt
03952 T

hv + O + Ti
03952 T

hv + O + W
03952 T

hv + O₂ + CF
03951 E

hv + O₂
03948 E

hv + OH + CF
03953 T

hv + OH + Ti
03953 T

HO + Pt
03322 E

SO₂ + Pd
03925 E

Review
04143 T

Unad.
03955 T 03971 E

D17
PARTICLE INTERACTIONS WITH SOLID SURFACES

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

Ar⁺ + Cr + Ho
03974 P

Ar⁺ + Cu₂O
03962 E

Ar⁺ + CuO
03962 E

Ar⁺ + SiO₂
03899 E

He⁺ + SiO₂
03899 E

He⁺ + (OH + Cu)
03632 E

He⁺ + SiO₂
03899 E

Ie⁺ + SiO₂
03899 E

D18

PARTICLE INTERACTIONS WITH SOLID SURFACES

Trapping and Desorption of Hydrogen (all forms) and Helium

D₂⁺ • Mo 11724 T

D₂⁺ • Mo 11724 T

H • C 11667 T

E • H • Mo 11894 T

H • Ti 11446 T

He⁺ • U 11721 T

F01

ELECTRON-PARTICLE INTERACTION

General

• • Ar 0110A P

• • He 11110 E

• • He 11110 E

• • Xe 11120 E

Under 11179 T 14159 T 14163 T

F02

ELECTRON-PARTICLE INTERACTION

Plastic Collisions

• • Al 01025 T

• • Ar 01091 T 01156 P 01440 T
01526 T 01647 T 01925 T
04001 P 04166 T 04218 T-T

• • C₂H₂ 11529 P

• • C₂H₄ 11510 P

• • Ca 01564 T

• • CH₄ 01590 P 01617 P 01666 P
01916 T 01915 T 04074 T

• • CO 01579 P

• • CO₂ 04735 P

• • H 01152 T 01195 T-T 01551 T

11624 T 11665 T 11720 T
01779 T 11826 T 01810 T
01917 T 01927 T

• • He⁺ 11204 T 11817 T

• • H₂ 11116 T 11221 T 11611 T
11670 T 01719 T 01718 T
11822 T 11828 T 11933 T
14319 T 14323 T 14339 T

• • He 11191 T 11435 T 11537 T
01542 T 01610 T 01658 T
01817 T 04000 T 04159 T
14314 T-T 14319 T-T

• • He⁺ 14122 T

• • Hg 11925 T

• • K 11670 T 11842 P

• • Kr 11571 T

• • Kc 11576 T

• • Li 11620 T

• • H₂ 01392 T 03402 T 03459 T
01734 T

• • He 11620 T

• • He⁺ 11231 T

• • He⁺ 11237 E

• • He 11101 E-T 11150 E 11925 T
04310 E-T

• • O₂ 04021 E

• • Pb 11625 T

• • PMM 11291 T

• • Xe 11526 T 14332 E

Under 01726 T 04181 T

703

ELECTRON-PARTICLE INTERACTION

Excitation

• • Al
03145 P

• • Al⁺
38797 T

• • Ar
03796 P-T 01941 E 04019 P

• • Ar⁺⁺
38173 P

• • Ar⁺⁺⁺
38173 T

• • Ar⁺⁺⁺
02779 T

• • Ar⁺⁺⁺
02779 T

• • Br⁺
31155 P

• • Br⁺⁺
31155 T

• • Br⁺
02170 P

• • Br⁺
02170 P

• • Br⁺⁺
38193 P

• • C⁺
33207 T

• • C⁺⁺
33129 T 31495 T 38257 T

• • C₂H₂
03579 P

• • C₂H₂
01579 P

• • C⁺
33155 T 31916 T

• • C⁺
33601 T

• • Ca⁺⁺
33155 T 31873 T

• • Ca⁺⁺⁺
33662 P

• • Cd
03851 P

• • Cd₂
01271 P-T 01592 P 01916 P
06023 P

• • Cd
03092 T 01098 P 03579 P

• • Cd⁺
31117 P

• • Cd₂
06795 P 08298 P

• • D₂
03098 P 01882 T 01868 T

• • Fe
33266 P

• • Fe⁺⁺
33878 P

• • Fe⁺⁺⁺
33524 T

• • Fe⁺⁺⁺
33145 T 33461 T 33973 T

• • Fe⁺⁺⁺
33662 T

• • Ge
33173 E

• • Ge
33856 T

• • H
33273 T 33276 T 33352 T
33416 P-T 33897 T 33573 T
03553 T 03608 T 03618 T
33659 T 33758 T 33823 T
03909 T 03522 T 04005 T
04016 T 04279 T 04313 E

• • H₂
33271 P-T 34297 T

• • H₂
33742 T 33798 E 33136 T
33217 T 33436 P-T 33432 T
33517 T 33538 T 33612 E
03476 T 03868 P 04019 T
38228 T 38225 T 38169 T
04309 T 04310 T 04311 T

• • H₂
33742 T

• • H₂
33396 T 33189 P 33150 P
33228 T 33126 T 33862 T
33519 T 03519 P 03501 P
33798 T 33801 P 33869 E
33923 T 33928 T 33982 T
04003 T 04004 E 04279 E

• • He⁺
33643 T

• • He⁺⁺
33923 T 38317 T 38337 P

• • He
33157 E 33555 E 33556 P-T
33546 T 33578 P 38332 P

• • He + H
38121 T

• • He
33736 E

• • H
03375 T 03604 T 04018 T
34126 P

• • He
33479 T 33673 P 33661 P

• • He⁺⁺
38115 T

• • He⁺⁺⁺
33842 T

• • Li
33119 T 33110 T 33134 T
33175 T 33889 T 33634 T
33743 T 33791 P

• • Li⁺
33155 T 33198 T 33389 T
03828 T 04071 T

• • Lu
03511 E

• • Hg⁺
34233 E-T 34183 E 34258 E-T

• • Hg⁺⁺
33441 T 33497 T 38329 T

• • Hg⁺⁺⁺
33155 T 33633 T

• • Hg⁺⁺⁺
33663 T

• • Hn
03854 T

• • H⁺
33155 T 33816 T

• • H₂
03092 T 03799 E 03432 T
03814 E 04286 T 04298 E

• • H₂
33307 T 33123 E 33373 E
33175 T 33638 T 38318 T
04167 E

• • H₂
33237 E 34167 E

• • He
03350 E 03632 T 03681 E
03766 E 03841 E

• • He⁺
33698 T

• • He⁺⁺
33841 T 38329 T

• • He⁺⁺⁺
33751 T 38257 T

• • He⁺⁺⁺
33751 T

• • He⁺⁺⁺
33155 T 33816 T

• • O⁺
33637 T 38329 T

• • O⁺
34257 T

• • O⁺
33715 T

• • O⁺
33155 T 33349 T 33816 T

• • O₂
03328 E 03763 E 04169 T

• • Pb
03605 T

• • S
03695 T

• • Si
03456 T

• • Si⁺
33887 T

• • Si⁺⁺
38329 T

• • Si³⁺
 08257 T
 • • Si²⁺
 73155 T
 • • Si⁺
 73662 T
 • • Sn
 03685 P

• • Ti⁺
 73285 E
 • • Ti²⁺
 73715 T
 • • V
 73858 T

• • Y
 73278 E
 • • Yb
 73618 E
 • • Yb⁺
 73618 E

E08

ELECTRON-PARTICLE INTERACTION

Dissociation

• • CH₂
 74777 P
 • • CO
 03012 T 04077 P
 • • CO⁺
 73117 P

• • CO₂
 74727 E
 • • O₂⁺
 73797 E
 • • O₂
 73882 T 73567 T 73829 T
 • • H₂⁺
 73186 T 74283 T
 • • H₂⁺
 03097 E 03495 E
 • • H₂
 73792 T 73836 P-T 73882 T

73587 T 73636 E 73829 T
 73868 E 74228 T 74168 T

• • HD
 73792 T
 • • HD₂⁺
 73797 E
 • • H₂
 73092 T
 • • D₂
 03763 E 04169 T

905

ELECTRON-PARTICLE INTERACTION

Ionization

• Ag
C1421 T 01821 T 04290 T

• Al
01125 *

• Ar
33121 F 33126 F 33176 T
03600 E 04010 F 04012 E
74722 T 04798 F

• Ar⁺
33114 F 33115 F 34125 T
34144 F

• Ar²⁺
33123 F 33124 F

• Ar³⁺
33115 F

• Ar⁴⁺
33111 F

• Ar⁵⁺
33111 F

• Ar⁶⁺
33111 F

• Ar⁷⁺
33111 F

• Ar⁸⁺
33111 F

• Au
03841 F 74790 *

• Br⁺
33121 T 33125 T 34117 T

• Be Seg
04122 *

• Bi⁺
33114 F 74710 F

• Bi²⁺
33114 F 74710 F

• Bi³⁺
33114 F 74710 F

• Br
04099 F

• C₂H₂
04145 *

• C⁺
33121 T 33125 T 34117 T

• C²⁺
33161 T

• Ca⁺
33172 F

• Ca²⁺
33162 F

• Ca³⁺
33162 F

• Ca⁴⁺
04027 F 04145 F

• Cl
34379 F

• Cl⁺
33194 F

• CO
33542 F 34327 *

• CO₂
33677 E 34327 F

• Cu
33401 T 33821 T

• F⁺
33194 E

• Fe⁺
03194 *

• Fe²⁺
34192 T

• Fe³⁺
33520 T

• Fe⁴⁺
33662 T

• H
33170 T 33273 E-T 33395 E-T
33476 E-T 03651 T 03823 T
33873 T 33903 T 74713 T
74714 T

• H₂
33037 T 33036 E-T 33626 E
04102 T

• He
33133 E 33194 E 33150 E
03170 F 03260 E 03527 T
33501 E 33565 T 33631 E
03669 F 03922 T 03947 T
34377 E 74730 E 74756 T

• He⁺
33661 T

• Hg
34372 F

• I
34379 F

• K
33135 E

• K⁺
34374 F

• Kr
33678 E

• Kr⁺
33103 F

• Kr²⁺
33662 T

• Li
33135 E

• Li⁺
74756 T

• Li²⁺
33035 T

• Mg⁺
33132 T

• Mg²⁺
33661 T

• N⁺
33125 T 34337 T 34232 E

• N²⁺
34232 E

• N₂
33832 F

• Ne
33135 E

• Ne⁺
34236 E

• Ne²⁺
33237 E

• Ne³⁺
03110 E 03101 E 03527 T

• N⁴⁺
33303 E

• Ne⁵⁺
33751 F

• Ne⁶⁺
33751 T 34332 E

• O
33401 T

• O⁺
33502 E

• O²⁺
33715 T

• O³⁺
33825 T 34337 T

• O₂
33121 E

• Sb⁺
33016 E

• Sb²⁺
33016 E

• Si
33110 E

• Si⁺
33662 F

• Sn
33605 E

• Sr⁺
33132 T

• Tl⁺
34233 E

• Tl²⁺
33390 E 34333 E

• Tl³⁺
33715 T

• Te
33630 E 34331 E 34315 E

• Te⁺
33343 E

• Th
33610 E 34125 E

• Th⁺
33610 E

• Under
33619 T

P07

ELECTRON-PARTICLE INTERACTION

Collisional De-Excitation

e • He⁺
 73612 T

e • He⁺⁺
 73751 T

e • He⁺⁺
 73751 T

e • He⁺
 73625 T

e • He⁺
 74117 T

P08

ELECTRON-PARTICLE INTERACTION

Collisional Line Broadening

e • H
 73535 T

e • H⁺
 74247 T

P09

ELECTRON-PARTICLE INTERACTION

Negative Ion Formation

74274 E-T

74328 T 74276 E-T

e • H₂
 01482 T 01567 T 01629 T

e • D₂
 01482 T 01567 T 01629 T

P11

ELECTRON-PARTICLE INTERACTION

Free-Free Transitions (Bremsstrahlung)

e • Hg
 73789 E-T

e • Kr
 73789 E-T

e • La
 74291 T

e • Xe
 73789 E-T 74291 T

Under
 73378 T

e • Ar
 01548 T 01667 T

P16

ELECTRON-PARTICLE INTERACTION

Fluorescence and Luminescence

e • Li
 01791 T

E17

ELECTRON-PARTICLE INTERACTION

Angular Scattering (specified process)

• Ag
03241 T

• Al
03925 T

• Ar
03049 T 03526 T 03577 E
03925 T 04166 T

• Au
03091 T

• C₂H₂
03524 T

• C₂H₄
03540 T

• C₂H₆
03271 T-T 03590 E 03646 F
03916 E 03935 T 04022 F
04025 E

• CO
03579 E

• Cu
03491 T

• H
31178 T 31273 P-T 31273 T
03276 T 03352 T 03080 T
31531 T 31634 T 31651 T
03708 T 03820 T 03823 T
03826 T 03830 T 03833 T
03922 T 03927 T 03936 T
31999 T 32025 T 32036 T
04016 T 04113 E

• He
33593 T

• H₂O
33271 T-T

• H₂
33223 T 31197 F 33427 T
03510 T 03670 T 03719 T
03717 T 03828 T 03930 T
34319 T 34326 T 34311 T
04312 E

• He
33396 T 33131 E 33170 T
03228 T 03260 F 03326 T
33815 T 33532 T 33539 T
03565 T 03631 E 03796 T
03981 T 04003 T 04007 E
34338 E

• Hg
33925 T

• I
33634 T 33862 F 34318 T

• Kr
33479 T 33526 T 33577 E
03608 E

• Li
03109 T 33134 T 03634 T
03780 T

• Li⁺⁺
33035 T

• Hg⁺
34333 E-T

• H₂
03392 T 03739 T

• Na
03123 E 03370 E 03634 T
04030 T 04041 E

• Ne
03110 E 03350 E 03925 T

• Ni
03001 T

• O₂
04042 E

• PHET
03291 T

• Xe
33526 T 33577 E 33638 E
34315 E

E18

ELECTRON-PARTICLE INTERACTION

Attenuation (unspecified process)

• Ar
03041 T

E19

ELECTRON-PARTICLE INTERACTION

Excitation Transfer

• Ar
03909 E 04166 T

• CN₂
33612 E

• CO
33271 P-T

• H
03352 T

• H₂
31719 T 33020 T

• Kr
33479 T

• H₂
33431 T

• He
03109 E-T

R01

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

General

$h\nu + D_2$
08173 T

$h\nu + H_2$
30173 T

$h\nu + He$
30173 T

$h\nu + Na$
33293 E

undef
33235 T

R02

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

Total Absorption

$h\nu + Au$
03093 =

$h\nu + Ba$
03596 T 03750 =

$h\nu + Be$
31024 F

$h\nu + Cd$
33083 E

$h\nu + Ce$
31773 E

$h\nu + Co$
33053 F

$h\nu + Cs$
33599 E 30107 E

$h\nu + Er$
03773 =

$h\nu + H_2$
33170 E-T 30333 E

$h\nu + He$
31773 =

$h\nu + K$
33399 E 30107 E

$h\nu + Kr$
00150 T

$h\nu + Na$
03099 E

$h\nu + Ne$
33597 E-T

$h\nu + O_2$
33333 E

$h\nu + Pb$
33093 E

$h\nu + Pt$
31773 E

$h\nu + Pr$
33361 T 33093 E

$h\nu + Rb$
33399 E

$h\nu + Sb$
33361 E

$h\nu + Sn$
30107 E

$h\nu + Si$
03293 E

$h\nu + Sm$
00107 E

$h\nu + Ta$
03083 E

$h\nu + Tl$
00107 E

$h\nu + Th$
33093 E

$h\nu + Zr$
33083 E

2hv + Ba
33675 T

2hv + Na
33721 E

undef
33700 T

R03

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

Elastic Scattering

$h\nu + Al$
03710 F

$h\nu + Cd$
33713 E

$h\nu + CH_4$
33519 T

$h\nu + CO_2$
33353 E-T

$h\nu + Cu$
33713 E

$h\nu + D_2$
03072 F

$h\nu + He$
33033 T

$h\nu + H_2$
33072 E

$h\nu + HD$
33072 E

$h\nu + Pb$
03710 E

$h\nu + Zn$
03710 E

undef
03720 T

804

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

Excitation

$h\nu + Ba$ 03207 P 03583 E 04185 P
 $h\nu + Be$ 03678 P
 $h\nu + C$ 03775 T
 $h\nu + Ce$ 03838 T
 $h\nu + Ca$ 03466 T
 $h\nu + Ca^{2+}$ 03165 T
 $h\nu + Ca^{2+}$ 03165 T
 $h\nu + Ca^{2+}$ 03165 T
 $h\nu + Co^{2+}$ 03165 T
 $h\nu + Co^{2+}$ 03165 T
 $h\nu + Co^{2+}$ 03165 T
 $h\nu + Ce$ 04255 P
 $h\nu + Ce^{2+}$ 03165 T
 $h\nu + Ce^{2+}$ 03165 T
 $h\nu + Ce^{2+}$ 03165 T
 $h\nu + Ce^{2+}$ 03165 T
 $h\nu + Ce$ 03700 P
 $h\nu + Ce + He$ 03709 T
 $h\nu + Cu^{2+}$ 03165 T
 $h\nu + Cu^{2+}$ 03165 T

$h\nu + Cu^{2+}$ 03165 T
 $h\nu + e + E$ 04121 T
 $h\nu + F$ 04253 E
 $h\nu + Fe^{2+}$ 03165 T
 $h\nu + Fe^{2+}$ 03165 T
 $h\nu + Fe^{2+}$ 03165 T
 $h\nu + Ga$ 03855 P
 $h\nu + Ga$ 03170 P-T
 $h\nu + H$ 03805 T
 $h\nu + H^+$ 03124 P 03893 T 03886 P
 $h\nu + H^+$ 03985 T
 $h\nu + H_2$ 03851 E
 $h\nu + He$ 03515 T 03523 E
 $h\nu + Hg$ 03521 P
 $h\nu + Hg^+$ 03555 P 03556 P-I
 $h\nu + Hg$ 03203 T
 $h\nu + Hm^{2+}$ 03165 T
 $h\nu + Hm^{2+}$ 03165 T
 $h\nu + Hm^{2+}$ 03165 T
 $h\nu + H$ 03077 T 03341 T
 $h\nu + He^+$ 03467 P
 $h\nu + Hf^{2+}$ 03165 T

$h\nu + Hf^{2+}$ 03165 T
 $h\nu + Hf^{2+}$ 03165 T
 $h\nu + Sc^{2+}$ 03165 T
 $h\nu + Sc^{2+}$ 03165 T
 $h\nu + Sc$ 03803 E
 $h\nu + Ti^{2+}$ 03165 T
 $h\nu + Ti^{2+}$ 03165 T
 $h\nu + Ti^{2+}$ 03165 T
 $h\nu + Ti$ 03671 E
 $h\nu + Y^{2+}$ 03165 T
 $h\nu + Y^{2+}$ 03165 T
 $h\nu + Y^{2+}$ 03165 T
 $h\nu + Y^{2+}$ 03165 T
 $h\nu + Y$ 03521 E
 $h\nu + Xe$ 03983 E
 $2h\nu + Ba$ 03636 E
 $2h\nu + Be$ 03675 T
 $2h\nu + Ca$ 03547 E
 $2h\nu + H_2O$ 03664 T
 $2h\nu + K$ 03589 E
 $2h\nu + Xe$ 04171 E
 $9def$ 03213 T 03938 T 04176 T

805

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

Dissociation

$h\nu + CR_2$ 03409 P
 $h\nu + CO_2$ 03815 P

$h\nu + D_2O$ 03876 P
 $h\nu + H_2O$ 03815 P 03853 P 03876 P
 $h\nu + HO$ 04272 P
 $h\nu + O_2^+$ 03707 P
 $h\nu + O_2$ 03187 E 03554 P 03585 E

$h\nu + OH$ 03316 T
 $2h\nu + D_2O$ 03931 E
 $2h\nu + HO^+$ 03304 P 03998 T
 $2h\nu + H_2O$ 03842 P 03903 E
 $9def$ 03369 T 03783 T

806

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

Ionization

| | | | |
|---------------------------|---------|-----------|--|
| h ν • Ag | | | |
| 03919 F | | | |
| h ν • Ag* | | | |
| 33516 T | | | |
| h ν • Al | | | |
| 33888 F-T | | | |
| h ν • Al** | | | |
| 38177 T | | | |
| h ν • Ar | | | |
| 33127 T | 33362 E | 33838 T | |
| 33637 T | 33654 T | 33818 E-T | |
| 33936 T | | | |
| h ν • Ar* | | | |
| 33786 E-T | | | |
| h ν • Au | | | |
| 33787 T | 33833 E | 33883 E | |
| 33622 F | | | |
| h ν • B | | | |
| 03991 T | | | |
| h ν • Ba | | | |
| 03282 E | 03385 E | 03886 E | |
| 03989 E | 08276 F | | |
| h ν • Ba* | | | |
| 33739 F | 33998 E | | |
| h ν • Ba** | | | |
| 33917 T | | | |
| h ν • Be | | | |
| 33876 T | | | |
| h ν • Be* | | | |
| 03674 T | | | |
| h ν • Bi | | | |
| 03387 T | 03800 E | | |
| h ν • Ca | | | |
| 03083 F | 03115 F | 03178 F | |
| 33394 T | 33866 T | | |
| h ν • Ca* | | | |
| 33739 E | | | |
| h ν • Cd | | | |
| 03483 E | | | |
| h ν • Ce | | | |
| 33728 F | | | |
| h ν • Ce* | | | |
| 31879 E | 31519 T | 31553 E | |
| h ν • Cl | | | |
| 03987 F | | | |
| h ν • CO ₂ | | | |
| 33915 F | | | |
| h ν • Cu | | | |
| 33273 F | 31765 T | | |
| h ν • Cu* | | | |
| 03910 T | | | |

| | | | |
|----------------------------|-----------|---------|--|
| h ν • Cu* | | | |
| 33593 T | | | |
| h ν • Cu* | | | |
| 33536 T | | | |
| h ν • Dy | | | |
| 33728 E | | | |
| h ν • Er | | | |
| 33728 E | | | |
| h ν • Fe | | | |
| 33873 F | | | |
| h ν • Ga* | | | |
| 33173 E-T | | | |
| h ν • Ga | | | |
| 33728 E | | | |
| h ν • H | | | |
| 33568 T | | | |
| h ν • He | | | |
| 33218 F | 33868 E | | |
| h ν • He* | | | |
| 33221 T | | | |
| h ν • H ₂ O | | | |
| 33815 E | 38262 E | | |
| h ν • H ₂ | | | |
| 33125 T | 33178 E-T | 33518 T | |
| 33888 T | 33395 T | 38268 E | |
| h ν • He | | | |
| 33515 T | | | |
| h ν • He* | | | |
| 33227 E | | | |
| h ν • HF | | | |
| 33518 T | | | |
| h ν • Hg | | | |
| 33197 T | 33833 E | 33531 T | |
| 33677 T | 33887 T | 33986 E | |
| 33983 E | | | |
| h ν • Hg* | | | |
| 33573 F | | | |
| h ν • Ho | | | |
| 33728 E | | | |
| h ν • Fr | | | |
| 33178 E | | | |
| h ν • La | | | |
| 33728 E | | | |
| h ν • La** | | | |
| 03910 T | | | |
| h ν • Li | | | |
| 38217 T | | | |
| h ν • Li Seg | | | |
| 33295 T | | | |
| h ν • Hg | | | |
| 03203 T | 03220 T | 03806 T | |
| h ν • Hg* | | | |
| 33273 T | | | |
| h ν • He | | | |
| 33557 E | | | |
| h ν • H ₂ | | | |
| 33311 F | 33377 T | 33518 T | |
| 03518 E | 03766 T | 03998 T | |

| | | | |
|--------------------------|---------|-----------|--|
| h ν • He | | | |
| 33212 E | 33233 T | 33387 T | |
| 03686 F | 03676 T | 03788 T | |
| 03886 T | | | |
| h ν • He* | | | |
| 33733 E-T | 33992 T | | |
| h ν • He | | | |
| 03728 E | | | |
| h ν • Hl | | | |
| 33873 E | | | |
| h ν • Hl | | | |
| 38272 E | | | |
| h ν • O | | | |
| 33358 E | 33622 E | | |
| h ν • O ₂ | | | |
| 03167 E | 03558 E | | |
| h ν • Os | | | |
| 33387 T | | | |
| h ν • Os | | | |
| 03387 T | 03800 E | 03883 E | |
| h ν • Os* | | | |
| 03387 T | | | |
| h ν • Os | | | |
| 33387 T | | | |
| h ν • Os | | | |
| 33728 E | | | |
| h ν • Os | | | |
| 33533 T | | | |
| h ν • Os | | | |
| 33823 E | 38186 E | | |
| h ν • Os* | | | |
| 33239 E | | | |
| h ν • Os | | | |
| 33387 T | 33833 E | | |
| h ν • Os | | | |
| 03387 T | 03800 E | | |
| h ν • Os | | | |
| 03870 E | | | |
| h ν • Os | | | |
| 33387 T | 33833 E | | |
| h ν • Os | | | |
| 03881 E | | | |
| h ν • Os | | | |
| 03387 T | 03800 E | | |
| h ν • Os | | | |
| 33387 T | 33833 E | | |
| h ν • Os | | | |
| 03104 E | 03346 E | 03545 E | |
| 33654 T | 33727 E | 33818 E-T | |
| 03910 T | 03945 T | 03985 E | |
| h ν • Os | | | |
| 03387 T | 03883 E | 03598 E | |

hv • Zn
 03256 T 01870 P
 hv • Zr
 11483 P
 2hv • Ba
 03410 P
 2hv • Ca
 11743 P
 2hv • Co
 11747 T
 2hv • H
 03365 T
 2hv • Hg
 07588 T
 2hv • K
 04179 E
 2hv • Na
 04179 P
 2hv • Rb
 04308 P
 3hv • C
 11323 P
 3hv • Ca
 11303 E
 3hv • H₂
 11282 E

3hv • Pa
 11466 E
 4hv • H
 11793 T
 5hv • H₂
 03639 P
 6hv • K
 11452 T
 8hv • K
 11306 E-T 11485 E 11516 T
 8hv • Ca
 03674 T
 8hv • Co
 11213 E
 8hv • Cu
 11485 E
 8hv • H
 11452 T 11943 T
 8hv • He
 11485 E
 8hv • Hg
 11485 E
 8hv • I
 11485 E 11516 T

8hv • K
 11615 E
 8hv • Kc
 03485 E 03516 T
 8hv • Na
 03363 T 03615 E
 8hv • Ne
 11304 E 11485 E
 8hv • NO
 01731 T 04184 E
 8hv • Sc
 11569 E
 8hv • W
 11485 E 11516 T
 8hv • Xe
 03084 E 03485 P 03516 T
 11572 T 14171 E 14183 E
 8hv • Yb
 11485 E
 Under
 03609 T 03722 T 03759 T
 11778 T

RO7

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

Photodetachment

hv • Co
 01206 T
 hv • Cr
 11216 T
 hv • Fe
 11216 T
 hv • H
 11501 T 11671 T 11734 T
 01758 P 04217 P

hv • He
 11664 L 11996 P 11997 E
 hv • I
 11913 T
 hv • Ie
 11216 T
 hv • Li
 01757 P
 hv • Mo
 11216 T
 hv • Nb
 11216 T
 hv • Ni
 11216 T
 hv • Os
 11216 T

hv • S
 11382 P-T
 hv • Ta
 11216 T
 hv • Ti
 03206 T
 hv • V
 03206 T
 hv • W
 01206 T
 hv • Zr
 11216 T
 2hv • H
 11671 T

H00

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

Fluorescence

hv • F
03796 P-Thv • Au
71522 E 74371 Phv • Ba
01103 Phv • Bi
74371 Ehv • Cs
71277 Phv • H₂O
73957 Ehv • Li
01234 Thv • Na
73212 E 74175 E-Thv • Sr
73597 P-Thv • O₂
73554 Ehv • Ta
74371 Ehv • Tl
74303 Ehv • W
04303 ESmlef
03235 T 03369 T 04176 T

H11

PHOTON COLLISIONS WITH HEAVY PARTICLES
AND ELECTRONS ($h\nu < 100$ keV)Free-Free Absorption or Inverse
Bremsstrahlunghv • Rg
01747 Thv • Sn
71293 P-T

J01

DATA COMPILATION

Heavy Particle

Charge exchange
71114 TChemical reactions
71114 PDiatomic potentials
71475 EElectron capture
71277 EIonization
74250 T 74259 TRate coefficients
04139 E-T

J02

DATA COMPILATION

Electrons

Dielectronic recombination
74114 P-TElectron impact
71413 TExcitation
71113 T 74257 THydrogen rate coefficients
71414 P-TIonization
71410 E-T 73513 E 74137 P-TRate coefficients
04136 E-TRecombination
71412 E-T

J03
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 Photoons

Photoionization
 33296 T

H Stark broadening
 33269 T

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$\mu \cdot \nu_2$
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