

業績目録(小林長夫)

著者	東北大学史料館
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小林 長夫 教授 業績目録

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東北大学史料館

(基本情報)

氏名 小林 長夫 (Nagao Kobayashi)

最終所属部局・職名 大学院理学研究科化学専攻・教授

生年月日 1950年1月21日

(学歴・職歴情報)

1973年 3月 信州大学繊維学部繊維工業化学科卒業

1975年 3月 信州大学大学院繊維学研究科繊維工業化学専攻修了

1978年 3月 東北大学大学院理学研究科博士課程修了 (理学博士)

1978年 4月 東北大学 技官 (薬学部)

1983年 3月 東北大学 助手 (非水溶液化学研)

1985年 1月 東北大学 助手 (薬学部)

1986年 3月 薬学博士 (東北大学)

1985年 4月 カナダ国ヨーク大学客員教授

1994年 10月 フランス国パリ理工科大学客員助教授

1995年 3月 東北大学 助教授 (大学院薬学研究科)

1995年 4月～ 東北大学 教授 (大学院理学研究科)

2015年 3月 定年退職

(取得学位)

1978年 3月 理学博士 (東北大学)

1986年 3月 薬学博士 (東北大学)

(専門分野)

有機物理化学、芳香環化合物化学、錯体化学、分光学

(研究課題)

ポルフィリン・フタロシアニン類の合成、分光学、電気化学

(研究キーワード)

フタロシアニン、ポルフィリン、シクロデキストリン、芳香族、機能分子、錯体、円偏光二色性、磁気円偏光二色性、電子吸収、分子軌道計算、電気化学、光学活性

(所属学会)

日本化学会、アメリカ化学会、有機パイ電子系学会、錯体化学会、国際ポルフィリン・フタロシアニン学会

(学会活動)

2000年 5月～ 国際ポルフィリン・フタロシアニン学会幹事、日本代表
2008年～ 有機パイ電子系学会幹事

(会議の主催、運営)

1995年 12月～ 環太平洋諸国化学会議シンポジウム開催 (5年毎開催)
2000年 5月～ 国際ポルフィリン・フタロシアニン学会監事、
日本代表 (隔年開催)
2004年 4月～ ユーラシア科学会議日本代表 (隔年開催)
2007年 5月～ 国際生物無機化学会議組織委員 (隔年開催)
2014年 10月 ポルフィリン・フタロシアニンおよび機能 π 分子のみちのく
国際シンポジウム主催

(学術受賞)

1980年 4月 高分子学会論文賞
2006年 3月 日本化学会学術賞
2010年 4月 文部科学大臣表彰 科学技術賞
2014年 6月 国際ポルフィリン・フタロシアニン学会賞

(社会活動)

2012年 12月 中国江蘇大学客員教授
2013年 3月 中国上海交通大学客員教授 (～2016年3月)
2009年 9月 中国福州大学客員教授 (～2012年9月)

List of Achievements

(業績リスト)

**Professor Nagao Kobayashi
Department of Chemistry
Graduate School of Science
Tohoku University
Sendai 980-8578, Japan**

**(教授 小林長夫)
(東北大学大学院理学研究科化学専攻)**

Submitted on Jan. 21, 2015

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1. Original Papers

List of Publications

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Polym. J. **7**, 538-543 (1975).
- 2) Magnetic Circular Dichroism Studies on Horseradish Peroxidase.
T. Nozawa, N. Kobayashi, and M. Hatano
Biochim. Biophys. Acta **427**, 652-662 (1976).
- 3) Magnetic Circular Dichroism Studies on Acid and Alkaline Forms of Horseradish Peroxidase.
N. Kobayashi, T. Nozawa, and M. Hatano
Biochim. Biophys. Acta **493**, 340-351 (1977).
- 4) Catalytic Electroreduction of Molecular Oxygen Using Water-Soluble Iron Porphyrin in the Presence of Metal Phthalocyanines.
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J. Electroanal. Chem. **101**, 269-273 (1979).
- 5) Catalytic Electroreduction of Molecular Oxygen Using Iron and Cobalt Tetra-*o*-aminophenylporphyrins in Acidic Media,
N. Kobayashi, T. Matsue, M. Fujihira, and T. Osa
J. Electroanal. Chem. **103**, 427-431 (1979).
- 6) Magnetic Circular Dichroism on Oxygen Complexes of Hemoproteins: Correlation between Magnetic Circular Dichroism Magnitude and Electronic Structures of Oxygen Complexes.
T. Nozawa, N. Kobayashi, M. Hatano, M. Ueda, and M. Sogami
Biochim. Biophys. Acta **626**, 282-290 (1980).
- 7) Electrochemical and Spectroscopic Studies of α , β , γ , δ -Tetrakis-[1-(2-hydroxyethyl)pyridinium-4-yl]porphine and Its Metal Complexes.
N. Kobayashi, M. Fujihira, T. Osa, and T. Kuwana
Bull. Chem. Soc. Jpn. **53**, 2195-2200 (1980).
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Bull. Chem. Soc. Jpn. **54**, 919-920 (1981).
- 9) Promotion of Charge-Transfer Complex Formation by γ -Cyclodextrin.
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J. Chem. Soc., Chem. Commun. 340-340 (1981).

- 10) The Effect of Solvents and/or Alkali Cations on Absorption Spectra of Iron(III) Crowned Porphyrin.
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Heterocycles **15**, 675-678 (1981).
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N. Kobayashi, M. Fujihira, T. Osa, and S. Dong
Chem. Lett. 575-578 (1982).
- 13) Chirality of the Two Pyrene Molecules Included in γ -Cyclodextrin.
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- 44) Effect of α -Cyclodextrin on the Electrochemistry of (Ferrocenylmethyl)dodecyldimethylammonium Bromide at a Glassy Carbon Electrode.
M. Opallo, N. Kobayashi, and T. Osa
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Can. J. Chem. **67**, 1109-1119 (1989).
- 48) Optical Absorption and Magnetic Circular Dichroism Studies of Hydrogen, Copper(II), Zinc(II), Nickel(II), and Cobal(II), Crown Ether-substituted Monomeric and Dimeric Phthalocyanines.
Z. Gasyana, N. Kobayashi, and M. J. Stillman
J. Chem. Soc., Dalton Trans. 2397-2405 (1989).

- 49) The Complexation of 2,3-Anthracenedicarboxylate by β - and γ -Cyclodextrin in Mixed Solvent Systems as Studied by Induced Circular Dichroism. The Role of Cosolvent Hydrophobicity. M. Opallo, N. Kobayashi, and T. Osa
J. Incl. Phenom. **6**, 413-422 (1989).
- 50) Lid-Type Supramolecular Complex Formation Realized between 2,6-Dimethyl- β -Cyclodextrin and Sodium Pyrene-1-carboxylate in Water. N. Kobayashi and H. Shirai
Makromol. Chem. Rapid. Commun. **10**, 447-451 (1989).
- 51) Two Types of Inclusion Realized in the Complexation between *p*-Dimethylaminobenzoic Acid and 2,6-Dimethyl- β -Cyclodextrin. N. Kobayashi
J. Chem. Soc., Chem. Commun., 1126-1128 (1989).
- 52) Virtues of a Poly-Cyclodextrin for the De-aggregation of Organic Molecules in Water. N. Kobayashi, H. Shirai, and N. Hojo
J. Polym. Sci., Polym. Lett. **27**, 191-195 (1989).
- 53) Complexation of Aromatic Carboxylic Acids with Heptakis(2,6-Di-*O*-Methyl)Cyclomaltoheptaose in Chloroform and Water. N. Kobayashi and T. Osa
Carbohydr. Res. **192**, 147-157 (1989).
- 54) Preparation of Iron and Cobalt Phthalocyanine-1,2:3,4:8,9:10,11:15,16:17,18:22,23:24,25-octakis(*N*-decyl-dicarboximide) and Their Catalytic Behavior for Electroreduction of Oxygen. N. Kobayashi, K. Sudo, and T. Osa
Bull. Chem. Soc. Jpn. **63**, 571-575 (1990).
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Bull. Chem. Soc. Jpn. **63**, 1374-1380 (1990).
- 56) (18-Crown-6)-Linked Binuclear Phthalocyanines. N. Kobayashi, M. Opallo, and T. Osa
Heterocycles **30**, 389-392 (1990).
- 57) Membrane Potential Across Poly(vinyl chloride) Membranes Doped with Phthalocyanine-Bridged Tetrakis (crown ether). J. Anzai, C. C. Liu, and N. Kobayashi
Polymer Commun. **31**, 223-225 (1990).
- 58) Redox Potentials of A Series of Lantanide-Bisphthalocyanine Sandwich Complexes.

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- 60) Electrochemistry and Spectroelectrochemistry of 1,8-Naphthalene- and 1,8-Anthracene-Linked Cofacial Binuclear Metallophthalocyanines. New Mixed-Valence Metallophthalocyanines.
N. Kobayashi, H. Lam, W. A. Nevin, P. Janda, C. C. Leznoff, and A. B. P. Lever
Inorg. Chem. **29**, 3415-3425 (1990).
- 61) Bonding Character in Tetracoordinate (Phthalocyaninato)iron(II) Complexes with Electron-Releasing Substituents As Studied by Mossbauer Spectroscopy.
T. Ohya, J. Tanaka, N. Kobayashi, and M. Sato
Inorg. Chem. **29**, 3734-3737 (1990).
- 62) Some Spectroscopic, Electrochemical and Spectroelectrochemical Properties of Tetrapyrizinoporphyrazine and Its Iron and Cobalt Complexes
N. Kobayashi, K. Adachi, and T. Osa
Anal. Sci. **6**, 449-453 (1990).
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- 65) Disposition of Ferrocenes in β - or γ -Cyclodextrin.
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T. Fukuda and N. Kobayashi
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- 20) Electrochemistry and Electron Transfer of Phthalocyanines.
N. Kobayashi and S. Yoshimoto
In “機能性色素としてのフタロシアニン (*Phthalocyanines as Functional Dyes*)”, Ed by R. Hirohashi, K. Sakamoto, and E. Okumura, Chapter 7 (pp. 279-293), IPC, Tokyo, 2004.
- 21) Phthalocyanine as Pigments.
N. Kobayashi and T. Fukuda
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- 22) Recent Progress in Phthalocyanine Chemistry: Synthesis and Characterization.
N. Kobayashi and T. Fukuda
In “*Functional Dyes*”, Ed by S. -H. Kim, Chapter 1 (pp. 1-47), Elsevier, Holland, 2005.
- 23) Progress in Phthalocyanine Synthesis.
N. Kobayashi
In “カラーフィルターにおける新しい材料開発と製造プロセス全集”, Section 1.1 (pp. 3-23), Technical Information Institute, Tokyo, 2006.
- 24) Oxygen Electrocatalysis.
N. Kobayashi
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- 25) Electrochromism.
N. Kobayashi
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- 26) Metallophthalocyanines.
N. Kobayashi

- In “機能性色素の合成と応用 (*Synthesis and Applied Technology of Functional Dyes*)”, Ed. by M. Matsui, Chapter 4 (pp. 61-75), CMC, Tokyo, 2007.
- 27) Optically Active Porphyrin Systems Analyzed by Circular Dichroism.
N. Kobayashi
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- 28) Electronic Absorption Spectra – Phthalocyanines.
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- 29) Recent Applications of MCD Spectroscopy to Porphyrinoids.
J. Mack and N. Kobayashi,
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- 30) The Effect of Structural Modifications on the Properties of Porphyrinoids.
J. Mack, N. Kobayashi, and Z. Shen
In “*Handbook of Porphyrin Science*”, Ed. by K. M. Kadish, K. M. Smith, and R. Guilard. Vol. 23, Chapter 109 (pp. 281-371), World Scientific, Singapore, 2012.
- 31) Synthesis and Characterization of Chiral Phthalocyanines.
N. Kobayashi
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- 32) Circular Dichroism and Magnetic Circular Dichroism for Organic Chemists (textbook).
N. Kobayashi, A. Muranaka, and J. Mack
Royal Society of Chemistry, London, 2012 (comments in *Angew. Chem. Int. Ed.* **51**, 10446 (2012)).
- 33) ポルフィリンおよびフタロシアニン系色素(Porphyrinoid and Phthalocyaninoid Dyes).
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- 34) フタロシアニンを用いた新規 π 電子分子の創製
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- 35) Recent Advances in the Chemistry of Phthalocyanine as Functional Chromophores.
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4. Miscellaneous Publications

- 1) Electrocatalytic Reduction of Oxygen Using Water-Soluble Iron Porphyrin-No.2.
N. Kobayashi, K. Sunakawa, M. Fujihira, T. Osa, and T. Kuwana
Review of Polarography, **24**, 113 (1978) (Abstract presented at the 24th Annual Meeting on Polarography and Electroanal. Chem., Sendai, Sept. 29-30, 1978).
- 2) ^{57}Fe NMR of Iron(II) Low Spin Hemes.
M. Hatano, T. Nozawa, M. Sato, N. Kobayashi, and T. Osa
Inorg. Chim. Acta-Bioinorg. Chem. **79**, 179-180 (1983) (Abstract presented at the 1st Int. Conf. on Bioinorg. Chem., Florence, Italy, June, 1983).
- 3) Functional Molecular Chemistry; Porphyrins, Phthalocyanines, Cyclodextrins, Fullerenes, Crowns, Supramolecules, Calixarenes, New Structural Polymers.
N. Kobayashi
Prism (河北新報, Kahoku Shinpou), March 4, 11, 18, 25; April 1, 8, 15, 22, 29; May 6, 13 (1996).
- 4) Synthesis, Structure and Properties of New Phthalocyanines.
N. Kobayashi and C. C. Leznoff
J. Porphyrins and Phthalocyanines **8**, 1015-1016 (2004).
- 5) Dedication to Professors Clifford C. Leznoff and Hirofusa Shirai on the Occasion of Their Retirement.
N. Kobayashi
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- 6) Preface: The 2nd Georgian Bay International Conference on Bioinorganic Chemistry.
M. J. Stillman, N. Kobayashi, and C. F. Shaw
J. Inorg. Biochem. **102**, 377-379 (2008).
- 7) Preface: The 3rd Georgian Bay International Conference on Bioinorganic Chemistry.
M. J. Stillman, N. Kobayashi, and C. F. Shaw
J. Inorg. Biochem. **108**, 69-71 (2012).
- 8) The Tale of Faculty of Science, Tohoku University.
N. Kobayashi
Faculty of Science, Tohoku University, Sendai, June (2012).
- 9) Preface: The 4th Georgian Bay International Conference on Bioinorganic Chemistry.
M. J. Stillman, N. Kobayashi, and C. F. Shaw
J. Inorg. Biochem. **136**, 93-98 (2014).

5. Presentations at International Conferences and Invited Seminars and Teaching in Foreign Countries (presenter underlined).

- 1) Magnetic Circular Dichroism of Hemoproteins—Near-IR region.
T. Nozawa, N. Kobayashi, and M. Hatano
The 6th International Biophysics Congress, Kyoto, Sept. 3-9, 1978.
- 2) Catalytic Electroreduction of Molecular Oxygen Using Porphyrin in the Presence of Phthalocyanines.
N. Kobayashi, M. Fujihira, K. Sunakawa, and T. Osa
The 1979 Japan-USA Chemical Society Meeting at Hawaii, Hawaii, USA, 1979.
- 3) Catalytic Electroreduction of Molecular Oxygen Using Porphyrin Modified Electrodes.
N. Kobayashi, M. Fujihira, and T. Osa
International Symposium on Electrochemistry, St. Luis, Missouri, May 11-16, 1980 (oral presentation).
- 4) Catalytic Electroreduction of Molecular Oxygen Using Water-Soluble Porphyrins.
O. Y. Su, N. Kobayashi, and T. Kuwana
The Five Large-Lake Regional Meeting of American Chemical Society, Purdue, USA, Oct. 11-14, 1986.
- 5) The Electrochemistry and Spectroelectrochemistry of Naphthalene- and Anthracene-Linked Cofacial Phthalocyanines.
N. Kobayashi, T. Osa, H. Lam, C. C. Leznoff, and A. B. P. Lever
The International Seminar on Electrochemistry Pre-symposium, Sendai, Japan, Sept. 1989 (selected oral presentation).
- 6) Symmetrically Tetra-substituted Phthalocyanines with Four Alkyl, or Aryl Chains, Porphyrins, Quinones, or Crowns Attached.
N. Kobayashi, T. Osa, Y. Nishiyama, T. Ohya, and M. Sato
The 1989 International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, USA, Dec. 1989.
- 7) Induced Circular Dichroism on Aromatic Compounds in Cyclodextrins.
N. Kobayashi
University Department Seminar, Warsaw University (ワルシャワ大学), Warsaw, Poland, March 18, 1990 (**Invited Lecture**).
- 8) Electrochemistry of Phthalocyanines and Their Analogues.
N. Kobayashi
University Department Seminar, Warsaw University (ワルシャワ大学), Warsaw, Poland, March 18, 1990 (**Invited Lecture**).
- 9) Electrocatalytic Reduction of Dioxygen at Porphyrin-adsorbed Electrodes.
N. Kobayashi
University Department Seminar, The Silesian Technical University (シレジア工科大学), Glywiza, Poland, March 21, 1990 (**Invited Lecture**).

- 10) Orientation of Ferrocenes in Cyclodextrins.
N. Kobayashi and T. Osa
 The 5th International Symposium on Cyclodextrins, Paris, France, March 24-28, 1990, pp. 196-199
(Invited Lecture).

- 11) Catalytic Epoxidation of Cyclooctene with Oxygen Using Electrochemically Reduced Metalloporphyrins.
T. Osa, N. Kobayashi, and F. Ojima
 International Symposium on Electrochemistry, California, USA, May, 1990.

- 12) Porphyrins and Phthalocyanines and Introduction of Some Electrochemical Works in Our Laboratory.
N. Kobayashi and T. Osa
 The 3rd International Seminar on Electroanalytical Chemistry, Changchun Institute of Applied Chemistry
 (長春応用化学研究所), Changchun (長春), China, Oct.14-17, 1991, pp. 92-97 **(Invited Lecture).**

- 13) Electrochemistry and Spectroelectrochemistry of Ring-Expanded Azaporphyrins.
N. Kobayashi and T. Osa
 The 4th International Conference and Exhibition on Instrumental Analysis, Beijing (北京), China, October, 1991 **(Invited Lecture).**

- 14) Reinvestigation of the Structure of a Pyrene-1-Carboxylic Acid-Heptakis(2,6-di-*o*-methyl)cyclomaltoheptaose Complex in Water.
H. Sugiyama, A. Tajiri, N. Kobayashi, T. Yokoyama, K. Sasaki, and N. Fujii
 The 7th International Symposium on Molecular Recognition and Inclusion Complexes, Kyoto, July 26-31, 1992.

- 15) Synthesis and Spectroscopic Properties of Phthalocyanine Analogues with Lower Symmetry.
N. Kobayashi, R. Kondo, T. Ashida, S. Nakajima, and T. Osa
 The 2nd International Symposium on Chemistry of Functional Dyes, Kobe, Aug. 23-28, 1992 (oral presentation).

- 16) Cation-Induced Cofacial and Eclipsed Supermolecular Tri-Benzo-Mono-Naphtho-Tetraazaporphyrin Formation.
N. Kobayashi, T. Ashida, M. Togashi, and T. Osa
 The 2nd International Symposium on Bioorganic Chemistry, Fukuoka, June 6-10, 1993.

- 17) Determination of the Asymmetric Field Surrounding Heme.
N. Kobayashi, M. Kitashima, T. Osa, A. Matsuoka, and K. Shikama
 The 5th International Conference on Circular Dichroism, Pingree Park, Colorado State University, Colorado, USA, Aug. 18-22, 1993.

- 18) Electrochemical and Spectroscopic Properties of Phthalocyanine Dimers.
N. Kobayashi

The 48th Okazaki Conference-Design and Applications for Molecular Devices, Jan. 26-28, 1994 (oral presentation).

- 19) Optically Active Phthalocyanines and Their Circular Dichroism.
N. Kobayashi
The 48th Okazaki Conference-Design and Applications for Molecular Devices, Jan. 26-28, 1994.
- 20) The Soret Absorption and MCD of Ferric High-Spin Myoglobins.
K. Shikama, N. Kobayashi, and A. Matsuoka
Gordon Redsearch Conferences, Plymouth State College, Plymouth, NH, USA, July 24-29, 1994.
- 21) Phthalocyanines of a Novel Structure: Dinaphthotetraazaporphyrins with D_{2h} Symmetry.
N. Kobayashi, T. Ashida, and T. Osa
The 30th International Conference on Coordination Compounds, Kyoto, July 24-29, 1994.
- 22) Spectroscopic and Electrochemical Properties of Phthalocyanine Dimers.
N. Kobayashi
School Seminar, Ecole Superieure de Physique et Chimie Industrielles de la Ville de Paris (パリ理工科大学), Paris, France, Oct. 3, 1994 (**Invited Lecture**).
- 23) Synthesis and Spectroscopic Properties of Phthalocyanines with Lower Symmetry.
N. Kobayashi
Department Seminar, Universitat Tubingen (チュウビンゲン大学), Tubingen, Germany, Oct. 4, 1994 (**Invited Lecture**).
- 24) Metallophthalocyanines with C_{2v} and D_{2h} Symmetry.
N. Kobayashi
Conference sur la Chimie des Metaux de Transition, Universite Louis Pasteur (レイパスツール大学), Strasbourg, France, Oct. 6, 1994 (**Invited Lecture**).
- 25) Spectroscopic and Electrochemical Properties of Phthalocyanines.
N. Kobayashi
Seminar, met Aansluitend Discussie voor Doctorandi, Katholieke Universiteit Leuven (ルーヴァン・カトリック大学), Leuven, Belgium, Oct. 7, 1994 (**Invited Lecture**).
- 26) Synthesis, Electrochemistry, and Spectroscopy of Low Symmetrical Phthalocyanines.
N. Kobayashi
School Seminar, Ecole Superieure de Physique et Chimie Industrielles de la Ville de Paris (パリ理工科大学), Paris, France, Oct. 13, 1994 (**Invited Lecture**).
- 27) Electrocatalytic Reduction of Oxygen Using Porphyrins and Phthalocyanines.
N. Kobayashi
School Seminar, Ecole Superieure de Physique et Chimie Industrielles de la Ville de Paris (パリ理工科大学), Paris, France, Oct. 20, 1994 (**Invited Lecture**).

- 28) Circular Dichroism of Porphyrins, Phthalocyanines, and Cyclodextrin-Chromophore Supramolecules.
N. Kobayashi
School Seminar, Ecole Superieure de Physique et Chimie Industrielles de la Ville de Paris (パリ理工科大学), Paris, France, Oct. 27, 1994 (**Invited Lecture**).
- 29) Chemistry of Phthalocyanine Analogues with C_{2v} and D_{2h} Symmetry.
N. Kobayashi
Department Seminar, Department of Chemistry, York University (ヨーク大学), Toronto, Canada, Nov. 3, 1994 (**Invited Lecture**).
- 30) Magnetic Circular Dichroism of Various Phthalocyanine Analogues.
N. Kobayashi
Department Seminar, Department of Chemistry, The University of Western Ontario (西オンタリオ大学), London, Ontario, Canada, Nov. 11, 1994 (**Invited Lecture**).
- 31) Regiospecific and Non-linear Substituent Effects on the Electronic and Fluorescence Spectra and Ring-Current of Phthalocyanines.
N. Kobayashi
Pacifichem.'96, Honolulu, USA, Dec. 18, 1995 (**Invited Lecture**).
- 32) Molecular Orbitals and Electronic Spectra of Phthalocyanine Analogues Studied by Semiempirical SCF-CI Calculations.
H. Konami and N. Kobayashi
Pacifichem.'96, Honolulu, USA, Dec. 18, 1995.
- 33) Discotic Columnar Liquid Crystals of Octaphenyltetrapyrazinoporphyrazinato Metal(II) and Triphenylene-Based Porphyrazinato Metal(II) Complexes.
K. Ohta and N. Kobayashi
Pacifichem.'96, Honolulu, USA, Dec. 18, 1995.
- 34) Optically Active Tetrapyrazinoporphyrazines and Optically Active Non-Centrosymmetrically Substituted Phthalocyanines.
N. Kobayashi
The 42nd International Conference on Analytical Sciences and Spectroscopy, The University of Western Ontario (西オンタリオ大学), London, Canada, Aug. 11-13, 1996 (**Invited Lecture**).
- 35) Studies on Low Symmetrical Zinc phthalocyanine Analogues Substituted with Three Crown Ether Voids and Their Cation-Induced Supermolecules by Time-Resolved EPR.
N. Kobayashi, K. Ishii, and S. Yamauchi
The 42nd International Conference on Analytical Sciences and Spectroscopy, The University of Western Ontario (西オンタリオ大学), London, Canada, Aug. 11-13, 1996.
- 36) Synthesis and Optical Properties of Planar Heterodinuclear Phthalocyanine Derivatives.

N. Kobayashi

The 31st International Conference on Coordination Chemistry, The University of British Columbia (ブリティッシュコロンビア大学), Vancouver, Canada, Aug. 18-23, 1996 (oral presentaion).

- 37) Synthesis, Spectroscopy, and Electrochemistry of Ring-Expanded and Low-symmetry Phthalocyanines.

N. Kobayashi

Brookhaven National Laboratory (ブルックヘブン国立研究所), Upton, New York, USA, June 26, 1997 (**Invited Lecture**).

- 38) Electronic Absorption, Magnetic Circular dichroism, and Fluorescence Spectra of Tetrabenzotriazaporphyrins and Tetranaphthotriazaporphyrins.

N. Kobayashi

Department of Chemistry, York University (ヨーク大学), Toronto, Canada, June 27, 1997.

- 39) Corelationship between Size and Symmetry of Phthalocyanines and Their Electronic Spectra.

N. Kobayashi

Department Seminar, Department of Chemistry, The University of Arizona (アリゾナ大学), Tuscon, Arizona, USA, June 30, 1997 (**Invited Lecture**).

- 40) Chemistry of Subazaporphyrin, Subphthalocyanine, and Subnaphthalocyanine.

N. Kobayashi and T. Ishizaki

The 22nd International Symposium on Macrocyclic Chemistry, Seoul, Korea, Aug. 3-8, 1997 (oral presentaion).

- 41) Chemistry of Planar Homo- and Heterodinuclear Phthalocyanines.

N. Kobayashi

International Symposium on Organometallics and Inorganic Compounds, Sendai, Aug. 20-21, 1997 (oral presentaion).

- 42) Electronic Spectra of Ring-Expanded and/or Symmetry Lowered Phthalocyanine Analogues.

N. Kobayashi

The 32nd International Conference on Coordination Chemistry, The Univ. of Santiago de Composteira (サンチアゴ・デ・コンポステーラ大学), Santiago, Chile, Aug. 30-Sept. 4, 1997 (oral presentaion).

- 43) Electronic Spectra of C_{2v} and D_{2h} Phthalocyanine Analogues.

N. Kobayashi

Department Seminar, Department of Chemistry, Northwestern University (ノースウェスタン大学), Evanston, Illinois, USA, Sept. 5, 1997.

- 44) Synthesis and Characterization of Low Symmetrical Phthalocyanines (**Invited Lecture**).

N. Kobayashi

Institute of Organic Intermediate & Dyes (有機中間体および色素研究所), Moscow, Russia, Sept. 12, 1997 (**Invited Lecture**).

- 45) Recent Progress on Subphthalocyanine Chemistry.
N. Kobayashi
National Academy of Sciences of Ukraine (ウクライナ国立学士院), Kiev, Ukraine, Sept. 15, 1997 (**Invited Lecture**).
- 46) Induced Circular Dichroism of Cyclodextrin-Chromophore Inclusion Complexes.
N. Kobayashi
Ecole Superieure de Physique et de Chimie Industrielles (パリ理工科大学), Paris, Sept. 19, 1997 (**Invited Lecture**).
- 47) Optically Active Oxo(phthalocyaninato)vanadium(IV) with Plane Asymmetry.
N. Kobayashi, F. Narita, and K. Ishii
The 6th International Conference on Circular Dichroism, Pisa, Italy, Sept. 21-24, 1997(oral presentation).
- 48) *In vivo* Monitoring of Intrahippocampal Nitric Oxide (NO) by an NO Sensor in Freely Moving Rat after N-Methyl-D-Aspartic Acid Injection and during Pentylentetrazole-Induced Seisures.
N. Kobayashi, M. Matsue, N. Kasai, O. Uchida, H. Yokoyama, M. Hiramatsu, T. Yoshimura, N. Mori, K. Osone, N. Tsuchihashi, and S. Niwa
The 6th International Seminar on Electroanalytical Chemistry, Changchun (長春), China, Oct. 10-12, 1997 (**Invited Lecture**).
- 49) Electrochemistry and Spectroelectrochemistry of Octanitrophthalocyanines.
N. Kobayashi
The 7th Beijing Conference and Exhibition on Instrumental Analysis, Shanghai (上海), China, Oct. 14-17, 1997 (oral presentaion).
- 50) Synthesis and Characterization of Low Symmetrical Phthalocyanines.
N. Kobayashi
Technical University of Istanbul (イスタンブール工科大学), Istanbul, Turkey, Aug. 28, 1998 (**Invited Lecture**).
- 51) Synthesis and Columnar Mesomorphism of the Diarylporphyrin Triple-Decker Cerium Complexes.
N. Kobayashi, H. Miwa, K. Ban, N. Yamaguchi, and K. Ohta
The 33rd International Conference on Coordination Chemistry, Florence, Italy, Aug. 30-Sept. 4, 1998 (oral presentaion).
- 52) Synthesis, Optical Properties, and Molecular Orbital Calculations of Subazaporphyrins, Subphthalocyanines, Subnaphthalocyanines, and Related Compounds.
N. Kobayashi
The 2nd International Symposium on Phthalocyanines, Edinburgh, England, Sept. 21-23, 1998 (**Plenary Lecture**).

- 53) Aggregation, Complexation, with Guest Molecules, and Mesomorphism of Amphiphilic Phthalocyanines Having Four- and Eight Tri(ethylene oxide) Chains.
H. Higashi, N. Kobayashi, K. Ishii, K. Hatsuzaka, and K. Ohta
 The 2nd International Symposium on Phthalocyanines, Edinburgh, England, Sept. 21-23, 1998.
- 54) Magnetic Properties of Phthalocyaninatosilicon(IV) Covalently Linked to Two TEMPO Radicals after Photoexcitation.
Y. Hirose, K. Ishii, and N. Kobayashi
 The 2nd International Symposium on Phthalocyanines, Edinburgh, England, Sept. 21-23, 1998.
- 55) An Adjacent Dibenzo-tetraazaporphyrin: A Structural Intermediate between Tetraazaporphyrin and Phthalocyanine.
H. Miwa, N. Kobayashi, H. Isago, and T. Tomura
 The 2nd International Symposium on Phthalocyanines, Edinburgh, England, Sept. 21-23, 1998.
- 56) Synthesis and Spectroscopic Properties of a Si-Si Directly Linked Phthalocyanine Dimer.
F. Furuya, N. Kobayashi, and G-Chang Yug
 The 2nd International Symposium on Phthalocyanines, Edinburgh, England, Sept. 21-23, 1998.
- 57) Synthesis, Optical Properties, and Molecular Orbital Calculations of Subphthalocyanines and Related Low Symmetrical Phthalocyanine Compounds.
N. Kobayashi
 Department Seminar, Department of Chemistry, Katholieke Universiteit Leuven (ルーヴァン・カトリック大学), Leuven, Belgium, Sept. 25, 1998 (**Invited Lecture**).
- 58) Synthesis and Interpretation of Circular Dichroism of Optically Active Phthalocyanines.
N. Kobayashi
 The 24th International Symposium on Macrocyclic Chemistry, Barcelona, Spain, July 18-23, 1999 (oral presentation).
- 59) Synthesis, Optical Properties, and Molecular Orbital Calculations of Subphthalocyanines, Subnaphthalocyanines, and Related Low Symmetrical Phthalocyanine Compounds Derived Therefrom.
N. Kobayashi
 Department Seminar, Department of Chemistry, Universitat de Autònoma de Madrid (マドリッド自治大学), Spain, July 26, 1999 (**Invited Lecture**).
- 60) Circular Dichroism of Cyclodextrin Host-Guest Complexes and Chiral Phthalocyanines.
N. Kobayashi
 Department Seminar, The Skaggs Institute for Chemical Biology and The Department of Chemistry, The Scripps Research Institute (スクリプス研究所), La Jolla, California, USA, Aug. 5, 1999 (**Invited Lecture**).
- 61) Synthesis, Electronic Spectra, Electrochemistry and Molecular Orbital Calculations of Ring-Expanded and Low Symmetrical Phthalocyanines.
N. Kobayashi and H. Miwa

The 8th Asian Chemical Congress, Taipei (台北), Taiwan, Nov. 21-24, 1999 (oral presentation).

- 62) Synthesis, Spectroscopy, and Molecular Orbital Calculations of Homo- and Hetero-Dinuclear Phthalocyanines.
N. Kobayashi
The 6th Eurasia Conference on Chemical Sciences, Brunei Darussalam, Brunei, Feb. 27-March 2, 2000 (**Invited Lecture**).
- 63) Band Deconvolution Analysis of the Electronic Absorption and Magnetic Circular Dichroism Spectral Data of A Planar Phthalocyanine Dimer.
N. Kobayashi, T. Fukuda, and D. Lelievre
Post Eurasia Symposium, Chulalongkorn University (チュラロンコン大学), Bangkok, Thailand, March 4, 2000 (**Invited Lecture**).
- 64) The Excited Multiplet States of Porphyrins and Phthalocyanines Coordinated or Linked to Nitroxide Radicals.
K. Ishii and N. Kobayashi
The 1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000 (oral presentation).
- 65) Cooperative Effect of Electron-donating and -withdrawing Substituents on the Red-shift of the Q band of Tetraazaporphyrins.
T. Nonomura, M. Yamazaki, K. Ishii, and N. Kobayashi
1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000.
- 66) Correlations to Density Functional Theory: The Theoretical Interpretation and Prediction of Mossbauer Spectral Parameters in Iron Phthalocyanine and Tetraazaporphyrin Complexes.
V. N. Nemykin, E. V. Polshin, and N. Kobayashi
The 1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000 (oral presentation).
- 67) Time-Resolved electron Spin Resonance of Gallium and Germanium Porphyrins in the Excited Triplet States.
S. Abiko, K. Ishii, and N. Kobayashi
The 1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000.
- 68) Synthesis and Spectroscopic Properties of Tetraazaporphyrin Analogues with C_{2v} Symmetry.
T. Fukuda and N. Kobayashi
The 1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000.
- 69) Silicon Phthalocyanines Containing an Alkyl Chain and Dendrimers of Varying Size as Axial Ligands.
T. Uchiyama, T. Nonomura, K. Ishii, and N. Kobayashi

- The 1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000.
- 70) The Excited Multiplet States of Phthalocyaninosilicon Covalently Linked to a Nitroxide Radical.
S. Takeuchi, Y. Hirose, K. Ishii, and N. Kobayashi
The 1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000.
- 71) Synthesis and Characterization of a Novel Tetraazaporphyrin Containing Four Fused Cycloheptatrienes.
K. Nakai, T. Nonomura, and N. Kobayashi
The 1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000.
- 72) Synthesis and Properties of Low Symmetrical Phthalocyanine Analogues.
N. Kobayashi
The 1st International Conference on Porphyrins and Phthalocyanines, Dijon, France, June 25-30, 2000
(Invited Lecture).
- 73) Comparative Spectroscopic and Electrochemical Properties of Bis(octakis(dodecylthio)naphthalocyaninato)-europium(III) and Bis(tetra-*tert*-butyl-naphthalocyaninato) Europium(III) Complexes.
N. Kobayashi, F. Furuya, and T. Nyokong
International Symposium on Coordination Chemistry in Japan, Kusatsu, Sept. 16-18, 2000.
- 74) Time-resolved ESR, Fluorescence, and Transient Absorption Studies on Phthalocyaninosilicon Covalently Linked to One or Two TEMPO Radicals.
K. Ishii, Y. Hirose, N. Kobayashi
International Symposium on Coordination Chemistry in Japan, Kusatsu, Sept. 16-18, 2000.
- 75) Synthesis, Spectroscopy, Electrochemistry, and Molecular Orbital Calculations of Phthalocyanine Monomers, Dimers, and Oligomers.
N. Kobayashi
Symposium on the Applications of Electroanalytical Chemistry on Biological, Food and Material Sciences, National Chi Nan University (国立暨南国际大学), Puli(埔里), Taiwan, Oct. 7-8, 2000
(Plenary Lecture).
- 76) The Relationship between Size and/or Symmetry and Spectroscopic and Electrochemical Properties of Phthalocyanines.
N. Kobayashi
Department of Chemistry, National Taiwan University (国立台湾大学), Taipei (台北), Taiwan, Oct. 9, 2000 **(Invited Lecture)**.
- 77) Substituent Effect of Phthalocyanines on the Absorption Wavelength and Fluorescence Quantum Yield.

- N. Kobayashi
Department of Chemistry, Shandong University (山東大学), Jinan (濟南), China, Oct. 15, 2000
(Invited Lecture).
- 78) Synthesis of Ring-Expanded and Low-Symmetrical Phthalocyanines.
N. Kobayashi
Department of Chemistry, Shandong University (山東大学), Jinan (濟南), China, Oct. 16, 2000
(Invited Lecture).
- 79) Application of Phthalocyanines in Society.
N. Kobayashi
Chemistry Division, Qufu Normal University (曲阜師範大学), Qufu (曲阜), China, Oct. 17, 2000
(Invited Lecture).
- 80) Phthalocyanines - The Compounds of the 21st Century.
N. Kobayashi
Guangxi Normal University (廣西師範大学), Guilin (桂林), China, Oct. 19, 2000 **(Invited Lecture).**
- 81) Low-Symmetrical and Optically Active Phthalocyanines.
N. Kobayashi
Department of Chemistry, Shandong University (山東大学), Jinan (濟南), China, Oct. 21, 2000
(Invited Lecture).
- 82) Chemistry of Cyclodextrins.
N. Kobayashi
Department of Chemistry, Shandong University (山東大学), Jinan (濟南), China, Oct. 21, 2000
(Invited Lecture).
- 83) Molecular Orbital Calculations of Ring-Expanded and Low Symmetrical Porphyrins and Phthalocyanines.
N. Kobayashi
Department of Chemistry, Shandong University (山東大学), Jinan (濟南), China, Oct. 23, 2000
(Invited Lecture).
- 84) Dimers and Oligomers of Phthalocyanines.
N. Kobayashi
Department of Chemistry, Shandong University (山東大学), Jinan (濟南), China, Oct. 23, 2000
(Invited Lecture).
- 85) Synthesis and Properties of Low-Symmetrical Tetraazaporphyrins.
N. Kobayashi
Bangladesh Chemical Society 23rd Conference, Dhaka, Bangladesh, Jan. 26-28, 2001 **(Plenary Lecture).**
- 86) Synthesis, Spectroscopy, Electrochemistry, and Molecular Orbital Calculations of Phthalocyanine

Monomers, Dimers and Oligomers.

N. Kobayashi

Institute of Atomic and Molecular Science Academia Sinica (興原子分子研究所), Taipei (台北), April 6, 2001 (**Invited Lecture**).

- 87) Synthesis and Properties of Low Symmetrical Tetraazaporphyrins.
N. Kobayashi, H. Miwa, and T. Fukuda
World Chemistry Congress, Brisbane, Australia, July 1-6, 2001 (**Invited lecture**).
- 88) Synthesis of Pyrazine or Pyridine-Ring-fused Phthalocyanine Analogues.
N. Kobayashi
Department Seminar, University of Trondheim (トロンドハイム大学), Trondheim, Norway, Sept. 17, 2001 (**Invited Lecture**).
- 89) The PPP Calculations of Low-Symmetrical Phthalocyanine Analogues.
N. Kobayashi
Department Seminar, University of Trondheim (トロンドハイム大学), Trondheim, Norway, Sept. 21, 2001 (**Invited Lecture**).
- 90) Synthesis and Spectroscopic Properties of A Phthalocyanine with Axial Symmetry.
A. Muranaka and N. Kobayashi
The 18th International Conference on Circular Dichroism, Sendai, Sept. 23-28, 2001.
- 91) Novel Hemiporphyrazines Comprising Three Isoindole and Three Thiadiazole Units.
N. Kobayashi
The 8th International Conference on Pure and Applied Heterocyclic Chemistry, Luxor, Egypt, Feb. 16-19, 2002 (**Invited Lecture**).
- 92) Synthesis and Characterization of Phthalocyanines with Direct Si-Si Linkages.
N. Kobayashi, F. Furuya, H. Wakita, M. Yokomizo, and N. Ishikawa
2nd International Conference on Porphyrins and Phthalocyanines, Kyoto, June 30-July 5, 2002 (**Invited Lecture**).
- 93) New Representatives of Superphthalocyanine Complexes.
V. M. Derkacheva, N. Kobayashi, and E. A. Luk'yanets.
The 2nd International Conference on Porphyrins and Phthalocyanines, Kyoto, June 30-July 5, 2002.
- 94) Synthesis of Novel Fused Tetraazachlorines and Tetraazabacteriochlorines.
E. A. Makarova, N. Kobayashi, and E. A. Luk'yanets.
The 2nd International Conference on Porphyrins and Phthalocyanines, Kyoto, June 30-July 5, 2002.
- 95) Electrochemical and Photochemical Properties of Phthalocyaninatosilicone Linked to Axial Ligands Containing Donor and Acceptor.
S. Hoshino, K. Ishii, and N. Kobayashi
The 2nd International Conference on Porphyrins and Phthalocyanines, Kyoto, June 30-July 5, 2002.

- 96) Magnetic Circular Dichroism Spectra of Fused Oligoporphyrins.
A. Muranaka, M. Yokoyama, N. Kobayashi, A. Tsuda, and A. Osuka
 The 2nd International Conference on Porphyrins and Phthalocyanines, Kyoto, June 30-July 5, 2002.
- 97) Synthesis, Structure, and Properties of Benzene- or Naphthalene-Fused Tetraazachlorines,
 -Bacteriochlorins, and Isobacteriochlorins.
T. Fukuda, E. A. Makarova, E. A. Luk'yanets, and N. Kobayashi
 The 2nd International Conference on Porphyrins and Phthalocyanines, Kyoto, June 30-July 5, 2002.
- 98) *cis* and *trans* Forms of a Binuclear Subphthalocyanine.
W. S. Durfee, N. Kobayashi, T. Fukuda, M. M. Olmstead, J. R. Stork, R. J. Potucek, and B. C. Noll
 The 2nd International Conference on Porphyrins and Phthalocyanines, Kyoto, June 30-July 5, 2002
 (Oral presentation).
- 99) Subphthalocyanine Dimers.
 T. Fukuda, W. S. Durfee, N. Kobayashi, R. D. Sommer, L. W. Perkins, L. A. Saluzzo, R. J. Potucek, J.
 R. Stork, S. C. Mule, and B. C. Noll
 The 2nd International Conference on Porphyrins and Phthalocyanines, Kyoto, June 30-July 5, 2002.
- 100) Electronic Structure of Reduced Symmetry Peripheral Fused-Ring-Substituted Phthalocyanines.
N. Kobayashi, J. Mack, K. Ishii, and M. J. Stillman
 The 35th International Conference on Coordination Chemistry, Heidelberg, Germany, July 21-26,
 2002 (**Invited Lecture**).
- 101) Synthesis and Structural Elucidation of Extremely Non-Planar Phthalocyanines with Saddle or Helical
 Conformation.
T. Fukuda and N. Kobayashi
 The 35th International Conference on Coordination Chemistry, Heidelberg, Germany, July 21-26,
 2002.
- 102) Synthesis and Properties of Dimers and Oligomers of Phthalocyanines.
N. Kobayashi
 Seminar, Cambridge University (ケンブリッジ大学), Cambridge, England, July 29, 2002 (**Invited
 Lecture**).
- 103) Synthesis and Properties of Rare-Earth Sandwich Compounds with Mixed 2,3-Naphthalocyaninato
 and Octaethylporphyrinato Ligands.
N. Kobayashi and J. Jiang
 The 12th International Symposium on Supramolecular Chemistry, Eilat, Israel, Oct. 6-11, 2002
 (**Invited Lecture**).
- 104) Synthesis and Characterization of Non-Planar Phthalocyanines.
N. Kobayashi
 Department Seminar, Shandong University (山東大学), Jinan (済南), China, Nov. 7, 2002 (**Invited
 Lecture**).

- 105) Phthalocyanines in Life.
N. Kobayashi
Department Seminar, Northwestern University (西北大学), Xi'an (西安), China, Nov. 11, 2002
(Invited Lecture).
- 106) Functional Phthalocyanines.
N. Kobayashi
Department Seminar, Zhengzhou University (郑州大学), Zhengzhou (郑州), China, Nov. 13, 2002
(Invited Lecture).
- 107) Recent Applications of Phthalocyanines.
N. Kobayashi
Department Seminar, Department of Chemistry, Henan University (河南大学), Kaifeng (开封), China, Nov. 15, 2002 **(Invited Lecture)**.
- 108) The First Phthalocyanine-Based Chiral Dimer Which Mimics Optical Properties of Antenna Chlorophyll Subunit Structure.
N. Kobayashi and A. Muranaka
International Symposium of Nano-Science of Advanced Metal Complexes, Okazaki Conference Center, Inst. for Molecular Science, Okazaki, March 22-24, 2003 **(Invited Lecture)**.
- 109) Approach to Nano-Porous Materials Based on Phthalocyanine Derivatives.
T. Fukuda and N. Kobayashi
International Symposium of Nano-Science of Advanced Metal Complexes, Okazaki Conference Center, Inst. for Molecular Science, Okazaki, March 22-24, 2003.
- 110) Theoretical Calculations of Electronic Absorption Spectra of Oxotitanium (IV) Phthalocyanine in the Solid-State.
K. Ishii, K. Nakai, H. Yonehara, C. Pac, and N. Kobayashi
International Symposium of Nano-Science of Advanced Metal Complexes, Okazaki Conference Center, Inst. for Molecular Science, Okazaki, March 22-24, 2003.
- 111) Time-Resolved EPR and Transient Absorption Studies on Phthalocyaninosilicon Covalently Linked to One or Two Nitroxide Radicals.
K. Ishii, S. Takeuchi, Y. Hirose, and N. Kobayashi
The 21st International Conference on Photochemistry, Nara, July 26-31, 2003.
- 112) Synthesis and Circular Dichroism of the First Phthalocyanine-Based Chiral Dimer.
N. Kobayashi and A. Muranaka
The 9th International Conference on Circular Dichroism in Chemistry and Life Sciences. Budapest, Hungary, Aug. 31-Sept. 4, 2003 **(Invited Lecture)**.
- 113) Recognition of Chiral Catechols Using Oxo Titanium Phthalocyanine.
The 9th International Conference on Circular Dichroism in Chemistry and Life Sciences.
A. Muranaka, M. Okuda, N. Kobayashi, K. Somers, and A. Ceulemans

Budapest, Hungary, Aug. 31-Sept. 4, 2003.

- 114) Synthesis of Condensed Analogs of Tetraazachlorins, Tetraazabacteriochlorins and Tetraazaisobacterio-chlorins.
E. A. Makarova, T. Fukuda, N. Kobayashi and E. A. Lukyanets
The 9th International Conference on Porphyrin Chemistry and Their Analogs, Suzdal, Russia, Sept. 8-12, 2003.
- 115) New Phthalocyanine-like Structures.
V. M. Derkasheva, N. Kobayashi, A. Muranaka, and E. A. Luk'yanets
The 9th International Conference on Chemistry of Porphyrins and Their Analogs, Suzdal, Russia, Sept. 8-12, 2003 (abstracts pp. 29-31).
- 116) Synthesis of Optically Active Tetraazaporphyrins and Interpretation of Their CD Spectra.
N. Kobayashi and A. Muranaka
The 8th Eurasia Conference on Chemical Sciences, Hanoi, Vietnam, Oct. 20-24, 2003 (**Keynote Lecture**).
- 117) Optical Spectroscopy of Silicon Tetrabenzotriazacorroles and Silicon-Silicon Linked Cofacial Phthalocyanine Dimers.
J. Mack, N. Kobayashi, and M. J. Stillman
Inorganic Discussion Weekend, McMaster University (マックマスター大学), Oct 31-Nov 2, 2003.
- 118) Electrochemical Properties of Cationic Porphyrazines Bound to a Graphite Surface; Cobalt, Nickel, and Metal-Free Species.
J. S. Chen, A. B. P. Lever, M. A. David, Y. Ma, and N. Kobayashi
Canadian Chemical Society, National Meeting, London, Ont. Canada, May 04-05, 2004.
- 119) Excited State Properties of Low-Symmetrical Tetraazaporphyrin Systems.
K. Ishii, H. Miwa, H. Itoya, and N. Kobayashi
The 6th International Symposium on Functional π Electron Systems, Ithaca, USA, June 14-18, 2004.
- 120) Phthalocyanines in Society.
N. Kobayashi
Department of Chemistry, The Chinese University of Hong Kong (香港中文大学), Hong Kong (香港), China, June 21, 2004 (**Invited Lecture**).
- 121) Optically Active Phthalocyanine Systems.
N. Kobayashi
Department of Chemistry, The Hong Kong University of Science and Technology (香港科技大学), Hong Kong (香港), China, June 23, 2004 (**Invited Lecture**).
- 122) Synthesis and Characterization of Highly Deformed Phthalocyanines Obtained by α -Phenyl Substitutions.
S. Homma, T. Fukuda, and N. Kobayashi

The 3rd International Conference on Porphyrins and Phthalocyanines, New Orleans, July 11-16, 2004.

- 123) Synthesis, Spectroscopic, and Electrochemical Studies of Novel Benzene- or 2,3-Naphthalene-Ring-Fused Tetraaza-chlorins, -bacteriochlorins, and -isobacteriochlorins.
N. Kobayashi, T. Fukuda, E. A. Makarova, and E. A. Luk'yanets
The 3rd International Conference on Porphyrins and Phthalocyanines, New Orleans, July 11-16, 2004
(Invited Lecture).
- 124) A Colormap Analysis Method for Visual Presentation of the Skeletal Deformations of Phthalocyanine Derivatives.
N. Kobayashi and T. Fukuda
The 3rd International Conference on Porphyrins and Phthalocyanines, New Orleans, July 11-16, 2004.
- 125) Synthesis of Novel Fused Tetraazachlorines and Tetraazabacteriochlorines.
E. A. Makarova, N. Kobayashi, and E. A. Luk'yanets
The 3rd International Conference on Porphyrins and Phthalocyanines, New Orleans, July 11-16, 2004.
- 126) New Representatives of Superphthalocyanine Complexes.
V. M. Derkasheva, N. Kobayashi, and E. A. Luk'yanets
The 3rd International Conference on Porphyrins and Phthalocyanines, New Orleans, July 11-16, 2004.
- 127) The Application of Magnetic Circular Dichroism Spectroscopy to Sterically Hindered Non-Planar Porphyrin Ring Systems.
J. Mack, N. Kobayashi, and M. J. Stillman
The 3rd International Conference on Porphyrins and Phthalocyanines, New Orleans, July 11-16, 2004
(Invited Lecture).
- 128) Recognition of Chiral Catechols Using Oxo-Titanium Phthalocyanine.
N. Kobayashi, A. Muranaka, M. Okuda, K. Somers, and A. Ceulemans
The 36th International Conference on Coordination Chemistry, Merida, Yucatan, Mexico, July 18-23, 2004 **(Invited Lecture)**.
- 129) Further Aspects of the Solution and Surface Electrochemistry of Metallophthalocyanines.
A. B. P. Lever, J. S. Chen, C. Aharamdat, C. Alexiou, Y. Ma, M. David, N. Kobayashi, S. Morin.
The 36th International Conference on Coordination Chemistry, Merida, Yucatan, Mexico, July 18-23, 2004 **(Invited Lecture)**.
- 130) Ring-Expanded and Low Symmetry Phthalocyanines for Use in Society.
N. Kobayashi
Department Seminar, School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University (上海交通大学), Shanghai (上海), China, Sept. 14, 2004 **(Invited Lecture)**.
- 131) Applications of Phthalocyanines in Society.
N. Kobayashi

Department of Chemistry, Northwest University (西北大学), Xi'an (西安), China, Sept. 15, 2004
(Invited Lecture).

- 132) Recent Development of Dyes and Pigments.
N. Kobayashi
Department of Chemistry and Chemical Engineering, Guangxi Normal University (广西师范大学), Guilin (桂林), China, Sept. 17, 2004 **(Invited Lecture).**
- 133) Spectroscopy and Electrochemistry of Rare-Earth Sandwich Phthalocyanines and Porphyrins.
N. Kobayashi
Department of Chemistry, Shandong University (山东大学), Jinan (济南), China, Sept. 20, 2004 **(Invited Lecture).**
- 134) Applications of Phthalocyanines in Society.
N. Kobayashi
Inst. of Adv. Materials, Fudan University (复旦大学), Shanghai (上海), China, Sept. 21, 2004 **(Invited Lecture).**
- 135) Construction of Optically Active Phthalocyanine Systems and Interpretation of Their Circular Dichroism.
N. Kobayashi
The 21st COE International Symposium in Association with AREC, AREC Plaza and Shinshu TLO (信州大学), Ueda, Oct. 4, 2004 **(Invited Lecture).**
- 136) *In vivo* Photodynamic Effects of Phthalocyaninatosilicone Covalently Linked to TEMPO Radicals on Cancer Cells.
K. Ishii, A. Takayanagi, S. Shimizu, H. Abe, K. Sogawa, and N. Kobayashi
Sendai-Berlin Joint Seminar on Advanced ESR, Sendai, Oct. 7-9, 2004.
- 137) The first Synthesis of a Gable Bis-Phthalocyanine.
Y. Asano and N. Kobayashi
The 2nd International COE Symposium for "Giant Molecules and Complex Systems", Sendai, Nov. 22-23, 2004.
- 138) Photodecarbonylation of Ruthenium Carbonyl Porphyrins via Stepwise Two-Photon Absorption of Visible Light.
S. Hoshino, K. Ishii, and N. Kobayashi
The 2nd International COE Symposium for "Giant Molecules and Complex Systems", Sendai, Nov. 22-23, 2004.
- 139) Excited-State Properties of Low-Symmetry Tetraazaporphyrin Derivatives.
K. Ishii, H. Miwa, H. Itoya, and N. Kobayashi
The 6th international Conference of Functional π Electron Systems, Ithaca, USA, June 14-18, 2005.

- 140) Coupled Oscillator Analysis of Optically Active N-Alkylated Poly(*p*-Benzamide)s.
A. Muranaka, A. Tanatani, A. Yokoyama, I. Azumaya, Y. Takakura, C. Mitsui, M. Uchiyama, N. Kobayashi, and T. Yokozawa
 The 10th International Conference on Circular Dichroism, Destin, Florida, USA, Aug. 21-25, 2005.
- 141) Definitive Assignments of the Visible-Near-IR Bands of Porphyrin-Naphthalocyanine Rare-Earth Sandwich Compounds and Directly-Fused Planar Porphyrins by Magnetic Circular Dichroism Spectroscopy.
N. Kobayashi, A. Muranaka, M. Uchiyama, A. Osuka, and J. Jiang
 The 11th Asian Chemical Sciences, Seoul, Korea, Aug. 24-26, 2005 (**Keynote Lecture**).
- 142) Phthalocyanines as Functional Dyes.
N. Kobayashi
 Department of Dyeing and Finishing, Kyungpook National University(慶北大学校), Deagu, Korea, Aug. 26, 2005 (**Invited Lecture**).
- 143) Use of MCD Spectroscopy in Porphyrinoid Complexes.
N. Kobayashi
 Department of Chemistry, Yonsei University (延世大学校), Seoul, Korea, Aug. 29, 2005 (**Invited Lecture**).
- 144) Synthesis and Properties of Silicon Naphthalocyanines Which Can Produce Organic Radicals by Visible or Near-IR Light.
K. Ishii, K. Yoshida, and N. Kobayashi
 SEST, Sendai, Oct. 24-26, 2005.
- 145) Synthesis, Spectroscopic, and Electrochemical Studies of Novel Benzene- or 1,2-Naphthalene-Ring-Fused Tetraazachlorins, -bacteriochlorins, and -isobacteriochlorins.
N. Kobayashi, T. Fukuda, E. A. Makarova, and E. A. Luk'yanets
 The 4th Singapore International Chemical Conference, Singapore, Dec. 8-10, 2005 (**Invited Lecture**).
- 146) A Novel Concept for Controlling Singlet Oxygen Yields and Photodynamic Effects on Cancer Cells Using Nitroxide Radicals.
K. Ishii, S. Takeuchi, S. Shimizu, A. Takayanagi, H. Abe, K. Sogawa, and N. Kobayashi
 Pacifichem, Hawaii, Dec. 15-20, 2005 (oral presentation).
- 147) Deformed Phthalocyanines: Synthesis and Characterization of Phenyl-Substituted Phthalocyanines at 1,4,8,11,15,18,22, and/or 25 Positions.
N. Kobayashi, T. Fukuda, and S. Homma
 Pacifichem, Hawaii, Dec. 15-20, 2005 (**Invited Lecture**).
- 148) Low Symmetry Azaporphyrin Systems.
N. Kobayashi
 The 7th International Symposium on Functional π Electron Systems, Osaka, May 15-20, 2006 (**Invited Lecture**).

- 149) Synthesis, Spectroscopy, and Electronic Structures of the Novel C₆₀-Tetraazachlorin Conjugates.
T. Fukuda, S. Masuda, and N. Kobayashi
 The 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006
(Invited Lecture).
- 150) Novel Phthalocyanine-C₆₀ Conjugates Obtained by the Cycloaddition Reaction of C₆₀ and Pyridazine Moieties.
H. Hashimoto, T. Fukuda, and N. Kobayashi
 The 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006
- 151) Synthesis and Characterization of *meso*-Aryl Subporphyrins.
Y. Takeuchi and N. Kobayashi
 The 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006.
- 152) Theoretical Aspects of Porphyrin and Phthalocyanine Spectroscopy.
M. J. Stillman, J. Mack, and N. Kobayashi
 The 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006
(Invited Lecture).
- 153) MCD Spectroscopy and the Effect of Porphyrinoid Ligand Saddling: Core Modified Tetrabenzoporphyrins.
J. Mack, Y. Shimizu, M. Bunya, M. J. Stillman, N. Ono, and N. Kobayashi
 The 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006
(Invited Lecture).
- 154) Cation Radical Porphyrinoids: Progress Towards the Assignment of the Optical Spectrum.
A. Senior, J. Mack, N. Kobayashi, and M. J. Stillman
 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006.
- 155) Phthalocyanine Synthesis, Optical Spectroscopy and Electrochemistry.
N. Kobayashi
 The 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006
(Plenary Lecture).
- 156) Surface Electrochemistry of Graphite Supported N, N', N'', N'''-Tetramethyltetra-3,4-pyridoporphyrazino-cobalt(II) and Related Cationic Porphyrazines.
 J. Chen, J. Zhang, Y. -H. Tse, P. Janda, M. Qi, D. Christendat, W. J. Pietro, Y. Ma, A. B. P. Lever, B. M. Hoffman, and N. Kobayashi
 The 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006
(Invited Lecture).
- 157) A Fused Planar Tetrameric Porphyrin Sheet.
Y. Nakamura, N. Aratani, H. Shinikubo, A. Muranaka, N. Kobayashi, and A. Osuka
 The 4th International Conference on Porphyrins and Phthalocyanines, Rome, Italy, July 2-7, 2006.

- 158) Helical Structures of N-Alkylated Poly(*p*-benzamide)s.
N. Kobayashi, A. Tanatani, A. Yokoyama, I. Azumaya, M. Uchiyama, A. Muranaka, and T. Yokozawa
 The 16th International Symposium on Fine Chemistry and Functional Polymers, Lanzhou (蘭州), China, July 24-27, 2006 (**Plenary Lecture**).
- 159) Highly Efficient Solid-Phase Synthesis of a Phthalocyanine Triangular Prism.
N. Kobayashi, A. Muranaka, and K. Yoshida
 The 37th International Conference on Coordination Chemistry, Cape Town, South Africa, Aug. 13-18, 2006 (**Invited Lecture**).
- 160) Conformational Analysis of Apple Procyanidins by CD Spectroscopy.
A. Muranaka, K. Yoshida, T. Shoji, N. Moriichi, S. Matsumoto, T. Kanda, Y. Ohtake, and N. Kobayashi
 The 23rd International Conference on Polyphenols, Winnipeg, Manitoba, Canada, Aug. 22-25, 2006.
- 161) Synthesis and Characterization of Phenyl-Substituted Zinc and Iron Phthalocyanines at 1,4,8,11,15,18,22 and/or 25 Positions.
N. Kobayashi, T. Fukuda, and S. Homma
 The 9th International Conference on Chemical Sciences, Antalya, Turkey, Sept. 9-13, 2006 (**Invited Lecture**).
- 162) Chiral Recognition of Apple Procyanidins by Complexation with Oxo-Titanium Phthalocyanine.
N. Kobayashi
 The 8th International Symposium on Biotechnology, Metal Complexes and Catalysis, Haikou (海口), China, Nov. 6-9, 2006 (**Plenary Lecture**).
- 163) Synthesis, Spectroscopy, and Electrochemistry of Phthalocyanine Derivatives.
 N. Kobayashi
 Department of Chemistry, Pierre and Marie Curie University (パリ第6大学), Paris, Dec. 13, 2006, (**Invited Lecture**).
- 164) On-Off Switching of Electronic Communication in Tetraazachlorin-C₆₀ Conjugates.
T. Fukuda, S. Masuda, and N. Kobayashi
 The 211th Electrochemical Society Meeting, Chicago, USA, May 6-11, 2007.
- 165) Novel Phthalocyanine-C₆₀ Conjugates Obtained by the Cycloaddition Reaction of C₆₀ and a Pyridazine Ring-Containing Phthalocyanine.
N. Hashimoto, M. El. Khouly, T. Fukuda, Y. Araki, O. Ito, and N. Kobayashi
 The 211th Electrochemical Society Meeting, Chicago, USA, May 6-11, 2007.
- 166) MCD Spectroscopy and the Effect of Porphyrinoid Ligand Saddling: Core Modified Tetrabenzoporphyrins.

J. Mack, M. J. Stillman, T. Okujima, Z. Shen, Y. Shimizu, H. Uno, N. Ono, M. Bunya and N. Kobayashi

The 1st Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Canada, May 22-25, 2007 (**Invited Lecture**).

- 167) Interpretation and Assignments of the UV-Visible-Near-IR Bands of Sandwich and Coplanar Porphyrinoid Complexes.
N. Kobayashi and A. Muranaka,
The 1st Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Canada, May 22-25, 2007 (**Invited Lecture**).
- 168) Analysis of the Circular Dichroism of Systems Containing Multiple Phthalocyanine or Porphyrin Ligands.
N. Kobayashi and A. Muranaka
The 90th Canadian Chemical Conference and Exhibition, Winnipeg, Canada, May 26-30, 2007 (**Invited Lecture**).
- 169) Relationship between the Molecular Structure and Observed Spectral and Electrochemical Properties of Giant Aromatic Molecules.
N. Kobayashi
The 3rd ECHEMS Meeting, Trest, Czech, June-28-July 1, 2007 (**Keynote Lecture**).
- 170) *anti*-[2,2](1,4)Phthalocyaninophane: Spectroscopic Evidence for Transannular Interaction in the Excited States.
N. Kobayashi, A. Muranaka, Y. Asano, A. Fukasawa, T. Hatano and M. Uchiyama
12th International Symposium on Novel Aromatic Compounds, Awaji Yumebutai International Conference Center, Awaji Island, Japan, July 22-27, 2007.
- 171) Synthesis and Properties of *meso*-Aryl-Subporphyrins and Their β -Oxo Dimers.
A. Matsuda, Y. Takeuchi, S. Shimizu and N. Kobayashi
The 12th International Symposium on Novel Aromatic Compounds, Awaji Yumebutai International Conference Center, Awaji Island, Japan, July 22-27, 2007.
- 172) Synthesis and Properties of *meso*-Aryl-Subporphyrins and Their β -Oxo Dimers.
A. Matsuda, Y. Takeuchi, S. Shimizu, and N. Kobayashi
The 1st Asian Conference on Coordination Chemistry, Okazaki Conf. Center, Okazaki, July 29-Aug. 2, 2007.
- 173) Subporphyrins and Their β -oxo Dimers: Synthesis and Characterization.
N. Kobayashi
Department Seminar, Department of Chemistry, Katholieke Universiteit Leuven
(ルーヴァン・カトリック大学), Leuven, Belgium, Aug. 31, 2007 (**Invited Lecture**).
- 174) Circular Dichroism Spectra of Apple Procyanidines and Procyanidine- Oxotitanium Phthalocyanine Complexes.

- N. Kobayashi, A. Muranaka, K. Yoshida, T. Shoji, N. Moriichi, S. Matsumoto, T. Kanda
The 11th Int. Natl. Conference on Circular Dichroism, Groningen, Holland, Sept. 2-6, 2007(**Invited Lecture**).
- 175) Exciton Coupling Theory Calculations of the Electronic Absorption and Circular Dichroism Spectra of Commelinin.
A. Muranaka, K. Kubo, T. Hatano, M. Uchiyama, and N. Kobayashi
The 11th Int. Natl. Conference on Circular Dichroism, Groningen, Holland, Sept. 2-6, 2007.
- 176) An Experimental and Computational Study of Novel Phthalocyanine-like Macrocycles with Extended π -Conjugation.
O. Matsushita, A. Muranaka, V. N. Derkasheva, E. A. Luk'yanets, and N. Kobayashi
The 11th Int. Natl. Conference on Circular Dichroism, Groningen, Holland, Sept. 2-6, 2007.
- 177) Synthesis and Spectroscopy of some Giant Aromatic Molecules.
N. Kobayashi
Department Seminar, Department of Chemistry, Nanjing University (南京大学), Nanjing (南京), China, Dec. 10, 2007 (**Invited Lecture**).
- 178) Relationship between the Molecular Structure and Spectral and Electrochemical Properties of Porphyrinoids.
N. Kobayashi
Department Seminar, Department of Physics, Fudan University (復旦大学), Shanghai (上海), China, Dec. 10, 2007 (**Invited Lecture**).
- 179) Synthesis and Characterization of *meso*-Triaryl-Subporphyrins and Their –Tribenzosubporphyrins.
N. Kobayashi, A. Matsuda, Y. Takeuchi, and S. Shimizu
The 10th Eurasia Conference on Chemical Sciences, Manila, Philippines, Jan. 7-11, 2008 (**Invited Lecture**).
- 180) Relationship between the Molecular Structure and Observed Spectral and Electrochemical Properties of Giant Aromatic Molecules.
N. Kobayashi
Department Seminar, Department of Chemistry, Rhodes University (ローズ大学), Grahamstown, South Africa, March 10, 2008 (**Invited Lecture**).
- 181) Rational and Unambiguous Assignments of the Visible-Near IR Bands of Porphyrin-Naphthalocyanine Rare-Earth Sandwich Double and Triple decker Compounds by Magnetic Circular dichroism Spectroscopy.
N. Kobayashi
Department Seminar, Department of Chemistry, University of Kwazulu-Natal at St. Pieter-Maritzburg (クワズルナタール大学), Pieter-Maritzburg, South Africa, March 12, 2008 (**Invited Lecture**).
- 182) Synthesis and electronic Structures of Phthalocyanine-C60 Conjugates.
N. Kobayashi

Department Seminar, Department of Chemistry, University of Kwazulu-Natal at Durban (クワズルナタール大学), Durban, South Africa, March 13, 2008 (**Invited Lecture**).

- 183) Synthesis, Spectroscopy and Electrochemistry of Some giant Aromatic Molecules.
N. Kobayashi
Department Seminar, Department of Chemistry, University of Pretoria (プレトリア大学), Johannesburg, South Africa, March 14, 2008 (**Invited Lecture**).
- 184) Relationship between Symmetry and Properties of Low-Symmetry Azaporphyrin Systems.
N. Kobayashi
Department Seminar, Department of Chemistry, University of Stellenbosch (ステレンボッシュ大学), Stellenbosch, South Africa, March 18, 2008 (**Invited Lecture**).
- 185) Synthesis and Central Metal Effects on Electronic Structures of Tribenzotetraazachlorin-Fullerene Conjugates.
T. Fukuda, N. Hashimoto, S. Masuda, N. Kobayashi
The 5th International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, July 6-11, 2008.
- 186) Synthesis of and Comparison of Properties between *meso*-Triaryl Subporphyrin and – Tribenzosubporphyrins.
N. Kobayashi, S. Shimizu, A. Masuda, Y. Takeuchi, E. Makarova, E. Luk'yanets
The 5th International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, July 6-11, 2008 (**Invited Lecture**).
- 187) MCD Spectroscopy and the Effect of Porphyrinoid Ligand Non-Planarity: Core Modified Tetrabenzoporphyrins.
J. Mack, M. Bunya, Y. Shimizu, H. Uno, M. J. Stillman, N. Ono, and N. Kobayashi
The 5th International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, July 6-11, 2008.
- 188) Design and Synthesis of Tetraazachlorin, Tetraazabacteriochlorins and Tetraazaisobacteriochlorins.
E. A. Makarova, S. V. Dudkin, T. Fukuda, N. Kobayashi, E. A. Luk'yanets
The 5th International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, July 6-11, 2008.
- 189) A Supramolecular Assembly Composed of Saddle-Distorted Protonated Porphyrin and Zn-Phthalocyanine.
T. Kojima, T. Honda, T. Nakanishi, K. Ohkubo, T. Fukuda, and N. Kobayashi
The 5th International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, July 6-11, 2008.
- 190) Innovation in the Development of Low Symmetry Phthalocyanine Derivatives.
W. Chidawanyika, S. Shimizu, J. Mack, N. Kobayashi, and T. Nyokong

The 5th International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, July 6-11, 2008.

- 191) Photodynamics of Supramolecule Composed of Saddle-Distorted Protonated Porphyrin and Zn-Phthalocyanine.
T. Honda, T. Kojima, T. Nakanishi, K. Ohkubo, T. Fukuda, N. Kobayashi, and S. Fukuzumi
The 5th International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, July 6-11, 2008.
- 192) Synthesis and Properties of Phthalocyanine Analogues Bearing 1,8-Naphthalene Units.
S. Shimizu, H. Zhu, and N. Kobayashi
The 5th International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, July 6-11, 2008.
- 193) Relationship between the Molecular Structures and Observed Spectral and Electrochemical Properties of Giant Aromatic Molecules.
N. Kobayashi
Department Seminar, Department of Chemistry, Nanjing University (南京大学), Nanjing (南京), China, Sept. 22, 2008 (**Invited Lecture**).
- 194) Turning Research into Marketable Products: Lessons from Japan.
N. Kobayashi
Rhodes University (ローズ大学), Grahamstown, South Africa, Feb. 10, 2009 (**Invited Lecture**).
- 195) Effect of Substituents on Spectra of Phthalocyanines.
N. Kobayashi
Rhodes University (ローズ大学), Grahamstown, South Africa, Feb. 11, 2009 (**Invited Lecture**).
- 196) Synthesis and Properties of Subporphyrins and Subphthalocyanines.
N. Kobayashi
University of the Orange Free State (オレンジ自由州大学), Bloemfontain, South Africa, Feb. 13, 2009 (**Invited Lecture**).
- 197) Understanding Spectra of Macrocyclic Compounds: Linking Experiments with Theoretical Calculations.
N. Kobayashi
University of Johannesburg (ヨハネスブルグ大学), Johannesburg, South Africa, Feb. 16, 2009 (**Invited Lecture**).
- 198) Relationship between Molecular Structures and the Observed Electronic Absorption, CD, and MCD Spectral Properties and Electrochemistry of Giant Aromatic Molecules.
N. Kobayashi
University of Science and Technology Beijing (北京科技大学), Beijing (北京), China, March 13, 2009 (**Invited Lecture**).

- 199) Phthalocyanines: History, Applications, Synthesis and Recent Topics.
N. Kobayashi
Nankai University (南海大学), Tianjin (天津), China, March 16, 2009 (**Invited Lecture**).
- 200) *Meso*-Triaryl Subporphyrins and Tribenzosubporphyrins.
N. Kobayashi, S. Shimizu, A. Muranaka, Y. Takeuchi, E. A. Makarova, and E. A. Luk'yanets
The 2nd Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Canada,
May 26-29, 2009 (**Invited Lecture**).
- 201) MCD Spectroscopy and TD-DFT Calculations.
J. Mack, M. J. Stillman, and N. Kobayashi
The 2nd Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Canada,
May 26-29, 2009 (**Invited Lecture**).
- 202) Chiral Subnaphthalocyanines.
S. Shimizu, S. Khene, T. Nyokong, N. Kobayashi
The 13th International Symposium on Novel Aromatic Compounds, Luxembourg, July 19-24, 2009.
- 203) Synthesis and Properties of Phthalocyanine-Fullerene Conjugates Connected Directly via a Four-Membered Ring.
Y. Kikukawa, T. Fukuda, and N. Kobayashi
The 13th International Symposium on Novel Aromatic Compounds, Luxembourg, July 19-24, 2009.
- 204) Azaphenylene Phthalocyanines-Their Synthesis and Properties.
H. Zhu, S. Shimizu, and N. Kobayashi
The 13th International Symposium on Novel Aromatic Compounds, Luxembourg, July 19-24, 2009.
- 205) Cation-Induced MO Modulations and Supramolecular Formation of a 15-Crown-5-Substituted Tribenzotetraazachlorin- C_{60} Conjugate.
T. Fukuda, I. Sugita, and N. Kobayashi
The 13th International Symposium on Novel Aromatic Compounds, Luxembourg, July 19-24, 2009.
- 206) Helical Structures of N-Alkylated Poly(*p*-benzamide)s.
N. Kobayashi, A. Tanatani, A. Yokoyama, Y. Takakura, C. Mitsui, M. Uchiyama, A. Muranaka, and T. Yokozawa
The 11th International Congress on Amino Acids, Peptides and Proteins, Vienna, Austria, Aug. 3-7, 2009 (**Invited Lecture**).
- 207) Application of MCD Spectroscopy to Porphyrinoids with $[4n]$ π -Electron Systems.
A. Muranaka, N. Kobayashi, and M. Uchiyama
The 12th International Conference on Circular Dichroism, Brescia, Italy, Aug. 30-Sept. 2, 2009 (**Invited Lecture**).
- 208) Relationship between the Molecular Structures and Observed Properties of Giant Aromatic Molecules.
N. Kobayashi

Department Seminar, Fudan University (復旦大學), Shanghai (上海), China, Sept. 11, 2009 (**Invited Lecture**).

- 209) *Meso*-Triaryl Subporphyrins and New Subnaphthalocyanines.
N. Kobayashi, S. Shimizu, K. Samson, and A. Matsuda
The 13th Asian Chemical Congress, Shanghai (上海), China, Sept. 14-16, 2009 (**Invited Lecture**).
- 210) Synthesis, Properties, and Applications of Phthalocyanines.
N. Kobayashi
Department Seminar, Fuzhou Normal University (福州師範大學), Fuzhou (福州), China, Sept. 17, 2009 (**Invited Lecture**).
- 211) Synthesis and Properties of Novel Phthalocyanine Analogues Bearing Six and Seven Membered Rings in the Core.
S. Shimizu, H. Zhu, K. Uemura, and N. Kobayashi
The 2nd Asian Conference on Coordination Chemistry, Nanjing (南京), China, Nov. 1-4, 2009 (**Invited Lecture**).
- 212) MCD Spectroscopy and TD-DFT Calculations of Core-Modified Porphyrinoids.
N. Kobayashi, J. Mack, and M. J. Stillman
The 2nd Asian Conference on Coordination Chemistry, Nanjing (南京), China, Nov. 1-4, 2009 (**Invited Lecture**).
- 213) Relationship between the Molecular Structures and Observed Spectroscopic and Electrochemical Properties of Giant Aromatic Molecules.
N. Kobayashi
Department Seminar, Hangzhou Normal University (杭州師範大學), Hangzhou (杭州), China, Nov. 5, 2009 (**Invited Lecture**).
- 214) Phthalocyanines: Applications and Relationship between the Molecular Structures and Observed Properties.
N. Kobayashi
Department Seminar, Zhejiang University (浙江大學), Hangzhou (杭州), China, Nov. 5, 2009 (**Invited Lecture**).
- 215) Novel Phthalocyanines Having Unique π -Conjugation Systems.
N. Kobayashi
The 1st International Symposium of Highly Elaborated π -Space and Its Function, Osaka, Dec. 18-19, 2009 (**Invited Lecture**).
- 216) Advanced Inorganic Chemistry.
N. Kobayashi
Concentrated Lecture to Graduate Course Students in University of Science and Technology Beijing (北京科技大學), Beijing (北京), China, March 28-April 8, 2010 (北京科技大學新入材培養海外學者短期講義講師).

- 217) History and Functions of Phthalocyanines: Molecules for 21st Century.
N. Kobayashi
Department Seminar, Chengdu University (成都大学), Chengdu (成都), China, April 1, 2010
(Invited Lecture).
- 218) The Chemistry of Phthalocyanines.
N. Kobayashi
Department Seminar, University of Science and Technology Beijing (北京科技大学), Beijing (北京), China, April 2-8, 2010 (Invited Lecture).
- 219) Crystal Structure and Properties of meso- and Isoindole-Nitrogen-Protonated Phthalocyanines.
T. Honda, T. Fukuda, T. Kojima, N. Kobayashi, and S. Fukuzumi
The 6th International Conference on Porphyrins and Phthalocyanines, New Mexico, USA, July 4-9, 2010.
- 220) MCD Spectroscopy and TD-DFT Calculations
J. Mack, N. Kobayashi, and M. J. Stillman
The 6th International Conference on Porphyrins and Phthalocyanines, New Mexico, USA, July 4-9, 2010.
- 221) anti-Phthalocyaninophane and Some Cofacial Phthalocyanine Dimers.
N. Kobayashi
The 6th International Conference on Porphyrins and Phthalocyanines, New Mexico, USA, July 4-9, 2010 (Invited Lecture).
- 222) Facile Preparation of Soluble Phthalocyanine Precursors.
Y. Kikukawa, T. Fukuda, and N. Kobayashi
The 6th International Conference on Porphyrins and Phthalocyanines, New Mexico, USA, July 4-9, 2010.
- 223) Synthesis and Properties of a Phthalocyanine Dimer Having a Propeller-like Conformation.
S. Takaishi, T. Fukuda, and N. Kobayashi
The 6th International Conference on Porphyrins and Phthalocyanines, New Mexico, USA, July 4-9, 2010.
- 224) Synthesis and Properties of Novel Subnaphthalocyanines.
S. Shimizu, H. Zhu, E. Wong, A. Miura, K. Samson, T. Nyokong, and N. Kobayashi
The 6th International Conference on Porphyrins and Phthalocyanines, New Mexico, USA, July 4-9, 2010.
- 225) Electronic Structure of Tetrathiaporphyrin Dication.
M. Konno, J. Mack, N. Kobayashi, and T. Shinmyozu
The 24th International Conference on the Organic Chemistry of Sulfur, Florence, Italy, July 25-30, 2010.

- 226) Functional & Topical Molecules: Porphyrins, Phthalocyanines, Crowns, Cyclodextrins, Calixarenes, Fullerenes, Dendrimers and Supramolecules.
N. Kobayashi
Nanjing University (南京大学), Nanjing (南京), China, Aug. 26-Sept. 1, 2010
(南京大学サマースクール外国人客員講師、**Summer School, Invited Lecture**).
- 227) Relationship between the Molecular Structures and Observed Properties of Azaporphyrins and Phthalocyanines.
N. Kobayashi
Department Seminar, University of Bourgogne (ブルゴーニュ大学), Dijon, France, Sept. 17, 2010
(**Invited Lecture**).
- 228) Rational Assignment of the Absorption Bands of Porphyrin-Naphthalocyanine Rare-Earth Sandwich Compounds and Planar Porphyrin Sheets by MCD Spectroscopy.
N. Kobayashi
Department Seminar, University of Bourgogne (ブルゴーニュ大学), Dijon, France, Sept. 17, 2010
(**Invited Lecture**).
- 229) Rational Assignment of the Absorption Bands of Porphyrin-Naphthalocyanine Rare-Earth Sandwich Compounds and Planar Porphyrin Sheets by MCD Spectroscopy.
N. Kobayashi
Department Seminar, The University of Clermont Ferrand (クレモンフェラン大学), Clermont Ferrand, France, Sept. 20, 2010 (**Invited Lecture**).
- 230) Synthesis and Electronic Structures of Phthalocyanine-C₆₀ Conjugates.
N. Kobayashi
Department Seminar, University of Strasbourg (ストラスブール大学), Strasbourg, France, Sept. 24, 2010 (**Invited Lecture**).
- 231) Novel Subporphyrins and Subphthalocyanines.
N. Kobayashi
The 11th Eurasia Conference on Chemical Sciences, Dead Sea, Jordan, Oct. 6-10, 2010 (**Invited Lecture**).
- 232) Synthesis and Properties of a Phthalocyanine Dimer Having a Propeller-Like Conformation.
N. Kobayashi, S. Takaishi, and T. Fukuda
The 2nd International Symposium of Highly Elaborated π -Space and Its Function, Kyoto, Nov. 13-14, 2010.
- 233) Relationship between the Molecular Structures and Spectroscopic and Electrochemical Properties of Giant Aromatic Molecules.
N. Kobayashi
PacifiChem, Honolulu, Hawaii, USA, Dec. 15-20, 2010 (**Invited Lecture**).

- 234) Relationship between the Symmetry of π -Systems and Excited State and the Electrochemical Properties of Tetraazaporphyrins.
N. Kobayashi
Pacifichem, Honolulu, Hawaii, USA, Dec. 15-20, 2010 (**Invited Lecture**).
- 235) Synthesis and Properties of Dioxaporphyrin.
S. Shimizu R. Hiramatsu, and N. Kobayashi
Pacifichem, Honolulu, Hawaii, USA, Dec. 15-20, 2010.
- 236) Azulenocyanine: A New Family of Phthalocyanines with Intense Near-IR Absorption.
A. Muranaka, M. Yonehara, N. Kobayashi, and M. Uchiyama
Pacifichem, Honolulu, Hawaii, USA, Dec. 15-20, 2010.
- 237) Evaluation of the Structure and Anti-aromaticity of 16 π Benzofused Porphyrin Zinc Complex.
S. Sugawara, Y. Hirata, S. Kojima, S. Matsukawa, D. Hashizume, J. Mack, N. Kobayashi, and Y. Yamamoto.
Pacifichem, Honolulu, Hawaii, USA, Dec. 15-20, 2010.
- 238) Synthesis and Properties of a Novel Phthalocyanine Analogue Bearing a Seven-Membered Ring in the Core.
H. Zhu, S. Shimizu, and N. Kobayashi
Pacifichem, Honolulu, Hawaii, USA, Dec. 15-20, 2010.
- 239) Functional Molecules and Materials.
N. Kobayashi
Concentrated Lectures to Graduate Course Students, Department of Chemistry, Nanjing University (南京大学), Nanjing (南京), China, March 7-16, 2011 (南京大学未来コースプログラム客員教授, **Invited Lecture**).
- 240) Magnetic Circular Dichroism of Porphyrinoids.
N. Kobayashi
ACS meeting, Anaheim, USA, March 27-31, 2011 (**Invited Lecture**).
- 241) Advanced Inorganic Chemistry.
N. Kobayashi
Concentrated Lecture to Graduate Course Students in University of Science and Technology Beijing (北京科技大学), Beijing (北京), China, April 1-10, 2010 (北京科技大学新人材培養海外学者短期講義講師).
- 242) Low-Symmetry Subphthalocyanines and Subnaphthalocyanines.
N. Kobayashi
The 3rd Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Ontario, Canada, May 31-June 4, 2011 (**Invited Lecture**).
- 243) Functional Molecules and Materials.

N. Kobayashi

Concentrated Lectures to Graduate Course Students, Department of Chemistry, Nanjing University (南京大学), Nanjing (南京), China, July 21-31, 2011 (南京大学サマースクール外国人客員講師、**Summer School, Invited Lecture**).

- 244) Relationship between the Molecular Structures and Spectroscopic and Electrochemical Properties of Porphyrinoids.

N. Kobayashi

The 19th Mendeleev Congress on General and Applied Chemistry, Volgograd, Russia, Sept. 25-30, 2011, (**Invited Lecture**).

- 245) Synthesis and Properties of a Pyrene-Fused Subphthalocyanine.

S. Nakano, S. Shimizu, and N. Kobayashi

The 10th Functional π -Electron Systems (F- π -10), Beijing, China, Oct. 13-17, 2011.

- 246) Structures and Properties of Chiral Subnaphthalocyanines.

A. Miura, S. Shimizu, S. Khene, T. Nyokong, and N. Kobayashi

The 10th Functional π -Electron Systems (F- π -10), Beijing, China, Oct. 13-17, 2011.

- 247) Synthesis of Phthalocyanines Absorbing in the Near-IR Region.

K. Satoh, T. Furuyama, and N. Kobayashi

The 10th Functional π -Electron Systems (F- π -10), Beijing, China, Oct. 13-17, 2011.

- 248) Syntheses and Properties of Novel Core-Expanded Phthalocyanine and Subphthalocyanine Analogues.

S. Shimizu, H. Zhu, and N. Kobayashi

The 10th Functional π -Electron Systems (F- π -10), Beijing, China, Oct. 13-17, 2011.

- 249) Synthesis and Properties of Gold Phthalocyanine and its Analogues.

S. Shimizu, E. Wong, A. Miura, D. Leznoff, and N. Kobayashi

The 3rd ACCC, New Delhi, India, Oct. 17-20, 2011 (**Invited Lecture**).

- 250) Relationship between the Molecular Structures and Spectroscopic and Electrochemical Properties of Azaporphyrinoids.

N. Kobayashi

The 3rd ACCC, New Delhi, India, Oct. 17-20, 2011 (**Keynote Lecture**).

- 251) Synthesis and Properties of Pyrene-Fused Subphthalocyanines.

S. Shimizu, S. Nakano, N. Kobayashi

The 3rd International Symposium on Emergence of Highly Elaborated π -Space and Its Functions, Tsukuba, Nov. 18-19, 2011.

- 252) Synthesis and Properties of Novel Expanded Phthalocyanine Analogues Having Urea Units in Their Macrocyclic.

N. Kobayashi, O. Matsushita, V. M. Derkacheva, A. Muranaka, S. Shimizu, M. Uchiyama, and E.

A. Luk'yanets

The 3rd International Symposium on Emergence of Highly Elaborated π -Space and Its Functions, Tsukuba, Nov. 18-19, 2011.

- 253) Relationship between the Molecular Structures and Spectroscopic and Electrochemical Properties of Azaporphyrinoids.
N. Kobayashi
Department Seminar, Shanghai Jiao Tong University (上海交通大学), Shanghai (上海), China, Feb.10, 2012 (**Invited Lecture**).
- 254) Recent Progress on Subphthalocyanine and Subporphyrin Chemistry.
N. Kobayashi
Department Seminar, University of Science and Technology Beijing (北京科技大学), Beijing (北京), China, March 30, 2012 (**Invited Lecture**).
- 255) Relationship between the Molecular Structures and Spectroscopic and Electrochemical Properties of Azaporphyrinoids.
N. Kobayashi
Department Seminar, Peking University (北京大学), Beijing (北京), China, April 2, 2012 (**Invited Lecture**).
- 256) Recent Progress on the Chemistry of Chiral and/or Low-Symmetry Subphthalocyanine Analogues.
N. Kobayashi
The 12th Eurasia Conference on Chemical Sciences, Corfu, Greece, April 16-21, 2012 (**Invited Lecture**).
- 257) Structures and Properties of Protonated Phthalocyanines.
T. Kojima, T. Honda, N. Kobayashi, and S. Fukuzumi
The 221st ECS meeting, May 6-11, 2012, Seattle, USA.
- 258) Relationship between the Molecular Structures and Spectroscopic and Electrochemical Properties of Azaporphyrinoids.
N. Kobayashi
Lever Symposium, 95th Canadian Chemical Society, Calgary, Alberta, May 26-30, 2012 (**Invited Lecture**).
- 259) Investigation of the Electronic Properties of Iron and Cobalt Phthalocyanine and Pyrazinoporphyrazine Complexes Bearing Positively Charged Substituents.
T. T. Tasso, T. Furuyama, and N. Kobayashi
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (济州岛), Korea, July 1-6, 2012.
- 260) Synthesis and Properties of Push-Pull Type Dipyromethene and Subporphyrazine Analogues.
X. Liang, S. Shimizu, and N. Kobayashi
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (济州岛), Korea, July 1-6, 2012.

- 261) Synthesis of Aza-bridged Conjugated Oligoheteroles.
T. Furuyama, N. Emura, D. Noguchi, and N. Kobayashi
7th International Conference on Porphyrins and Phthalocyanines, Jeju (濟州島), Korea, July 1-6, 2012.
- 262) Synthesis of Main Group Element Phthalocyanines through Steric Protection at *Meso*-Position.
T. Kushiya, T. Furuyama, and N. Kobayashi
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (濟州島), Korea, July 1-6, 2012.
- 263) Synthesis of Aza-Dipyrromethene Analogues.
I. Sugita, S. Shimizu, and N. Kobayashi
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (濟州島), Korea, July 1-6, 2012.
- 264) Synthesis and Properties of Superphthalocyanine Derivatives.
Y. Ogura, T. Furuyama, and N. Kobayashi
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (濟州島), Korea, July 1-6, 2012.
- 265) Pyrene-Fused and Pyrene-Bridged Subphthalocyanines.
S. Nakano, S. Shimizu, and N. Kobayashi
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (濟州島), Korea, July 1-6, 2012.
- 266) Synthesis and Properties of Novel BODIPY Dimers Comprizing a Pyrrolopyrrole Unit.
T. Iino, S. Shimizu, and N. Kobayashi
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (濟州島), Korea, July 1-6, 2012.
- 267) Syntheses and Properties of Core-Modified and Periphery-Expanded Subphthalocyanines.
S. Shimizu, S. Nakano, Y. Yamazaki, A. Kojima, and N. Kobayashi
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (濟州島), Korea, July 1-6, 2012 (**Invited Lecture**).
- 268) Chiral and/or Low-Symmetry Subphthalocyanine Analogues.
N. Kobayashi, S. Shimizu, A. Miura, T. Otaki, S. Khene, T. Nyokong.
The 7th International Conference on Porphyrins and Phthalocyanines, Jeju (濟州島), Korea, July 1-6, 2012 (**Invited Lecture**).
- 269) Synthesis and Characterization of Low-Symmetry Azaporphyrins and Phthalocyanines.
N. Kobayashi
Instituto de Investigaciones Químicas (化学研究所), Sevilla, Spain, Sept. 4, 2012 (**Invited Lecture**).

- 270) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Facultad de Farmacia, University of Sevilla (セヴィリア大学), Sevilla, Spain, Sept. 5, 2012
(Invited Lecture).
- 271) Synthesis and Applications of Metallophthalocyanines.
N. Kobayashi
Instituto de Ciencia de Materials de Barcelona (バルセロナ材料科学研究所), Campus
Universitari de Bellaterra, Barcelona, Spain, Sept. 7, 2012 **(Invited Lecture).**
- 272) Synthesis and Properties of Superazaporphyrins and Novel Subphthalocyanines.
N. Kobayashi, S. Shimizu, T. Furuyama, A. Miura, S. Khene, T. Nyokong, Y. Ogura, T. Otaki, T.
Hosoya, and S. Nakano
The 40th International Conference on Coordination Chemistry, Valencia, Spain, Sept. 9-13, 2012
(Invited Lecture).
- 273) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Chemistry, The University of Aveiro (アヴェイロ大学), Aveiro, Portugal, Sept. 14,
2012 **(Invited Lecture).**
- 274) Synthesis and Characterization of Subporphyrin and Subphthalocyanine Derivatives.
N. Kobayashi
Department of Chemistry, Universidad Autonoma de Madrid (マドリッド自治大学), Madrid,
Spain, Sept. 17, 2012 **(Invited Lecture).**
- 275) Synthesis and Properties of Superazaporphyrins and Chiral and/or low-Symmetry
Subphthalocyanines.
N. Kobayashi
The 1st Conference on Science Diplomacy and Developments in Chemistry, Alexandria, Egypt,
Nov. 24-26, 2012 **(Plenary Lecture).**
- 276) Advanced Inorganic Chemistry.
N. Kobayashi
Concentrated Lectures to Graduate Course Students, Department of Chemistry, Nanjing University
(南京大学), Nanjing (南京), China, Nov. 29 - Dec. 13, 2012(南京大学本科教育国際化過程体形外
国人客員講師, **Invited Lecture).**
- 277) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department Seminar, School of Industry and Chemical Engineering, Nanjing Industrial University
(南京工業大学), Nanjin (南京), China, Dec. 6, 2012 **(Invited Lecture).**
- 278) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi

School of Chemistry and Chemical Engineering, Nanjing University (南京大学), Nanjin (南京), China, Dec. 10, 2012 (**Invited Lecture**).

- 279) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
School of Chemistry and Chemical Engineering, Jiangsu University (江苏大学), Zhenjiang (镇江), China, Dec. 11, 2012 (**Invited Lecture**).
- 280) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
CAMPUS Asia, POSTECH-Seoul National University-Tohoku University Joint Symposium, Seoul and Pohang, Korea, Jan. 21-24, 2013 (**Invited Lecture**).
- 281) Synthesis and Properties of Superazaporphyrins and Chiral and/or Low-Symmetry Subphthalocyanines.
N. Kobayashi
CAMPUS Asia, Shanghai Jiao Tong University-Nanjing University-Tohoku University Joint Symposium, Shanghai and Nanjing, China, March 8-13, 2013 (**Invited Lecture**).
- 282) Synthesis and Properties of Superazaporphyrins and Chiral and/or Low-Symmetry Subphthalocyanines.
N. Kobayashi
CanBIC-4, Parry Sound, May 21-25, 2013 (**Invited Lecture**).
- 283) Synthesis and Properties of Superazaporphyrins and Chiral and/or Low-Symmetry Subphthalocyanines.
N. Kobayashi
The 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013 (**Invited Lecture**).
- 284) Novel Core-Expanded Subphthalocyanines
S. Shimizu, S. Nakano, A. Kojima, H. Zhu, and N. Kobayashi
The 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013.
- 285) Design and Synthesis of Phthalocyanines with Group 15 Elements Absorbing in the Near-IR Region.
T. Furuyama, T. Kushiya, K. Satoh, and N. Kobayashi
The 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013.
- 286) Synthesis of Tetraazaporphyrins Bearing AIE-Active Substituent Groups.
T. T. Tasso, T. Furuyama, and N. Kobayashi
The 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013.

- 287) Pyrrolopyrrole aza-BODIPY Analogues: Tunable Absorption and Fluorescence in the Vis/NIR Region.
T. Iino, S. Shimizu, and N. Kobayashi
 The 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013.
- 288) Uranyl Ring-Expanded Phthalocyanines: Synthesis of Superphthalocyanine Derivatives.
Y. Ogura, T. Furuyama, and N. Kobayashi
 The 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013.
- 289) Drastic Change in Optical Properties of Tetraazaporphyrins Caused by Phosphorus(V) Insertion.
T. Yoshida, T. Furuyama, and N. Kobayashi
 The 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013.
- 290) Synthesis of μ -Oxo Linked Tetrabenzotriazacorrole Dimer.
Y. Sugiya, T. Furuyama, and N. Kobayashi
 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013.
- 291) Synthesis and Properties of Novel aza-Porphyrinoids Using Dibromodipyrromethene.
S. Hirokawa, S. Shimizu, and N. Kobayashi
 The 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, July 28 - Aug. 2, 2013.
- 292) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
 Department of Chemistry, National Chung-Hsing University (国立中興大学), Taichung (台中), Taiwan, Aug. 1, 2013 (**Invited Lecture**).
- 293) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
 Department of Applied Chemistry, National Chi Nan University (国立暨南国际大学), Puli (埔里), Taiwan, Aug. 2, 2013 (**Invited Lecture, University Seminar**).
- 294) Relationship between the Molecular Structures and Spectroscopic and Electrochemical Properties of Porphyrinoids.
N. Kobayashi
 The 5th International Conference on Modern Methods in Theoretical and Experimental Electrochemistry, Plios, Ivanovo Region, Russia, Sept. 16-20, 2013 (**Plenary Lecture**).
- 295) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
 Department of Organic Chemistry and Technology, Ivanovo State University of Chemical

Technology

(イワノボ州立化学工業大学), Ivanovo, Russia, Sept. 18, 2013 (**Invited Lecture**).

- 296) Relationship between the Molecular Structures and Spectroscopic and Electrochemical Properties of Porphyrinoids.
N. Kobayashi
Department of Organic Chemistry and Technology, Ivanovo State University of Chemical Technology
(イワノボ州立化学工業大学), Ivanovo, Russia, Sept. 19, 2013 (**Invited Lecture**).
- 297) Synthesis of π -Oxo Linked Tetrabenzotriazacorrole Dimer.
Y. Sugiyama, T. Furuyama, and N. Kobayashi
International Symposium for the 70th Anniversary of the Tohoku Branch of the Chemical Society of Japan, Sendai, Sept. 28-30, 2013.
- 298) Synthesis and Properties of Novel Porphyrin Derivatives Using Dibromodipyrromethene.
S. Hirokawa, S. Shimizu, and N. Kobayashi
International Symposium for the 70th Anniversary of the Tohoku Branch of the Chemical Society of Japan, Sendai, Sept. 28-30, 2013.
- 299) Dimeric aza-BODIPY Analogues Comprising a Pyrrolopyrrole Unit.
T. Iino, S. Shimizu, and N. Kobayashi
International Symposium for the 70th Anniversary of the Tohoku Branch of the Chemical Society of Japan, Sendai, Sept. 28-30, 2013.
- 300) Control of Alignment of Fullerene Molecules Using Highly Deformed Phthalocyanines.
A. Miura, S. Shimizu, and N. Kobayashi
International Symposium for the 70th Anniversary of the Tohoku Branch of the Chemical Society of Japan, Sendai, Sept. 28-30, 2013.
- 301) Tetraazaporphyrins containing AIE-Active Groups: Synthesis and Photophysical Properties.
T. T. Tasso, T. Furuyama, and N. Kobayashi
International Symposium for the 70th Anniversary of the Tohoku Branch of the Chemical Society of Japan, Sendai, Sept. 28-30, 2013.
- 302) Fused-Ring-Expanded Superphthalocyanines: Expanded 1,2-Naphthalocyanine and 9,10-Phenanthrenocycnine.
Y. Ogura, T. Furuyama, and N. Kobayashi
International Symposium for the 70th Anniversary of the Tohoku Branch of the Chemical Society of Japan, Sendai, Sept. 28-30, 2013.
- 303) Synthesis and Unique Optical Properties of Phosphorus(V) Tetraazaporphyrins.
T. Yoshida, T. Furuyama, and N. Kobayashi
International Symposium for the 70th Anniversary of the Tohoku Branch of the Chemical Society of Japan, Sendai, Sept. 28-30, 2013.

- 304) Synthesis of Phosphorus(V) Tetrabenzotriazacorrole μ -oxo Dimer.
T. Furuyama, Y. Sugita, and N. Kobayashi
 The first International Symposium for Young Chemists on Stimuli-Responsible Chemical Species for the Creation of Functional Molecules, Tokyo, Dec. 2-3, 2013.
- 305) Relationship between the Molecular Structures and Observed Spectroscopic and Electrochemical Properties of Porphyrinoids.
N. Kobayashi
 Department of Chemistry, Kangwon National University (国立江原大学), Kangwon (江原), Korea, Feb. 24, 2014 (**Invited Lecture**).
- 306) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
 Department of Chemistry, Kangwon (国立江原大学) National University, Kangwon (江原), Korea, Feb. 25, 2014 (**Invited Lecture**).
- 307) Synthesis and Properties of Superazaporphyrins, Chiral and/or Low-Symmetry Subphthalocyanines, and Rectangular Phthalocyanines.
N. Kobayashi
 Department of Chemistry, Peking University (北京大学), Beijing (北京), China, March 21, 2014 (**Xinda Lecture, Invited Lecture**).
- 308) Synthesis and Properties of Superazaporphyrins, Chiral and/or Low-Symmetry Subphthalocyanines, and Rectangular Phthalocyanines.
N. Kobayashi
 Department of Chemistry, Hangzhou Normal University (杭州師範大学), Hangzhou (杭州), China, March 24, 2014 (**Invited Lecture**).
- 309) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
 Department of Chemistry, Hangzhou Normal University (杭州師範大学), Hangzhou (杭州), China, March 25, 2014 (**Invited Lecture**).
- 310) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
 Department of Chemistry, Shanghai Jiao Tong University (上海交通大学), Shanghai (上海), China, March 26, 2014 (**Invited Lecture**).
- 311) Deastereoselection of Self-Assembled Dissymmetric Capsule.
T. Haino, Y. Tsunoda, K. Fukuta, T. Imamura, R. Sekiya, T. Furuyama, and N. Kobayashi
 The 9th International Symposium on Macrocyclic and Supramolecular Chemistry, Shanghai (上海), China, June 7-11, 2014.
- 312) Synthesis, Structure and Properties of New Early Transition Metal Phthalocyanines.
D. Leznoff, R. Platel, W. Zhou, S. Shimizu, T. Furuyama, and N. Kobayashi

- The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 313) Optical and Electrochemical Properties of a Series of Fused Porphyrins.
Y. Saegusa, T. Isizuka, S. Shimizu, N. Kobayashi, and T. Kojima
International Conference on Organic Materials for Electronics and Photonics, Tsukuba, Japan, Sept. 21-24, 2014.
- 314) A Casual Encounter with Phthalocyanines and the 40-Year Relationship which Followed.
N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014 (**Award Lecture**).
- 315) Synthesis of Highly Deformed α -Octaaryl Phthalocyanine Phosphorous(V) Complexes.
R. Harako, T. Furuyama, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 316) Synthesis and Properties of *aza*-BODIPY Analogues.
A. Murayama, S. Shimizu, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 317) Synthesis and Characterization of Tetrabenzotriazacorrole and Its π -Oxo Dimer.
Y. Sugiya, T. Furuyama, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 318) Synthesis and Optical Properties of Tetraphenylethylene-Substituted Phthalocyanines.
S. Shitanda, T. Furuyama, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 319) Synthesis and Properties of Metal Complexes of Pyrrolopyrrole-Bridged *aza*-Dipyrromethene.
Y. Takahashi, T. Iino, S. Shimizu, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 320) Phosphorous(V) Tetraazaporphyrins Showing an Intense CT Band Comperative to the Soret and Q Bands.
T. Yoshida, T. Furuyama, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 321) Synthesis and Propperties of Chiral Subporphyrin.
S. Hirokawa, S. Shimizu, and N. Kobayashi

The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.

- 322) Synthesis and Properties of Tetrathiafulvalene-Annulated Silicone Phthalocyanine Oligomers.
Y. Shiina, S. Soji, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 323) Design, Synthesis, and Properties of Near-IR-Absorbing Phthalocyanine Complexes with Main-Group Elements.
T. Furuyama, K. Satoh, T. Kushiya, N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 324) Chiral Subphthalocyanine and Its Related Compounds.
S. Shimizu, X. Liang, S. Hirokawa, A. Miura, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 325) Synthesis, Structure and Properties of New Early Transition-Metal Phthalocyanines.
D. Leznoff, R. Platel, W. Zhou, S. Shimizu, T. Furuyama, and N. Kobayashi
The 8th International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, June 22-27, 2014.
- 326) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Schulich Summer School, Faculty of Chemistry, Technion, Israel Institute of Technology (イスラエル工科大学), July 1, 2014 (**Invited Lecture**).
- 327) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Materials and Interfaces, Weizmann Institute of Science (ワイツマン科学研究所), Rehovoth, Israel, July 1, 2014 (**Invited Lecture**).
- 328) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Departamento de Química, Universidade Federal do Paraná (パラナ連邦大学), Curitiba, Brazil, Aug. 4, 2014 (**Invited Lecture**).
- 329) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Departamento de Química, Universidade Federal do Rio de Janeiro (リオデジャネイロ連邦大学), Rio de Janeiro, Brazil, Aug. 6, 2014 (**Invited Lecture**).

- 330) Synthesis and Properties of Superazaporphyrins, Rectangular Phthalocyanines, and Chiral and/or Low-Symmetry Subphthalocyanines.
N. Kobayashi
The 17th Brazilian Meeting on Inorganic Chemistry, Araxa, Minas Gerais, Brazil, Aug. 11, 2014
(Invited Lecture).
- 331) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Departamento de Química, Universidade Federal de São Paulo (サンパウロ連邦大学), São Paulo, Brazil, Aug. 14, 2014 **(Invited Lecture)**.
- 332) Introduction of Graduate School of Science of Tohoku University and Research in Its Department of Chemistry.
N. Kobayashi
St. Petersburg University (サンクトペテルブルグ大学), St. Petersburg, Russia, Oct. 1, 2014.
- 333) Development of Azaporphyrin Complexes with Main-Group Elements
T. Furuyama and N. Kobayashi
Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π Molecules, Zao, Oct. 13-16, 2014.
- 334) Phosphorus(V) Tetraazaporphyrins; Their Unique Optical Properties and Substituents Effects
T. Yoshida, T. Furuyama, and N. Kobayashi
Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π Molecules, Zao, Oct. 13-16, 2014.
- 335) Synthesis and Properties of Novel *p*-Benzophthalocyanines.
F. Iizuka, S. Shimizu, and N. Kobayashi
Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π Molecules, Zao, Oct. 13-16, 2014.
- 336) Synthesis of Novel *aza*-BODIPY Dimers by Schiff Base Formation Reaction and Their Properties
M. Tamada, T. Iino, S. Shimizu, and N. Kobayashi
Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π Molecules, Zao, Oct. 13-16, 2014.
- 337) Dinitriles and Tetraazaporphyrins Bearing AIE-active Motifs: Synthesis and Photophysical Properties.
T. Tasso, T. Furuyama, and N. Kobayashi
Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π Molecules, Zao, Oct. 13-16, 2014.
- 338) Asymmetric Core-expanded *aza*-BODIPY Analogues: Facile Synthesis and Optical Properties.
H. Liu, H. Lu, Z. Zhou, S. Shimizu, N. Kobayashi, and Z. Shen
Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π Molecules, Zao, Oct. 13-16, 2014.

- 339) A Casual Encounter with Phthalocyanines and the 40-Year Relationship which Followed.
N. Kobayashi
Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π Molecules,
Zao, Oct. 13-16, 2014.
- 340) Efficient One-pot Synthesis of a Thiophene-fused Aromatic Compound by Using Two-Stage
Cyclization–Dehydrogenation Photoreaction and Its MCD Property.
E. Ohta, A. Yamamoto, N. Kishigami, N. Tsukahara, H. Sato, Y. Matsui, K. Mizuno, T. Furuyama,
N Kobayashi, and H. Ikeda
Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π Molecules,
Zao, Oct. 13-16, 2014.
- 341) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Chemistry, University of Fort Hare (フォートハレ大学), Alice, Eastern Cape, South
Africa, Nov. 3, 2014 (**Invited Lecture**).
- 342) Synthesis and Properties of Superazaporphyrins, Rectangular Phthalocyanines, and Chiral and/or
Low-Symmetry Subphthalocyanines.
N. Kobayashi
Department of Chemistry, Rhodes University (ローズ大学), Grahamstown, Eastern Cape, South
Africa, Nov. 4, 2014 (**Invited Lecture**).
- 343) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Chemistry, Rhodes University (ローズ大学), Grahamstown, Eastern Cape, South
Africa, Nov. 4, 2014 (**Invited Lecture**).
- 344) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Chemistry, Nelson Mandela Metropolitan University (ネルソンマンデラメトロポリ
タン大学), Port Elizabeth, South Africa, Nov. 5, 2014 (**Invited Lecture**).
- 345) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Chemistry, University of Kwazul-Natal (クワズルナタール大学), Durban, South
Africa, Nov. 7, 2014 (**Invited Lecture**).
- 346) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Chemistry, University of the Western Cape (西ケープ大学), Cape Town, South
Africa, Nov. 10, 2014 (**Invited Lecture**).
- 347) Synthesis and Properties of Superazaporphyrins, Rectangular Phthalocyanines, and Chiral and/or
Low-Symmetry Subphthalocyanines.

N. Kobayashi

Department of Chemistry, University of Cape Town (ケープタウン大学), Cape Town, South Africa,
Nov. 11, 2014 (**Invited Lecture**).

- 348) Synthesis and Properties of Rectangular Phthalocyanines, Superazaporphyrins, and Chiral and/or Low-Symmetry Subphthalocyanines.

N. Kobayashi

The 13th Eurasia Conference on Chemical Sciences, Bangalore, India, Dec. 14-18, 2014 (**Lead Lecture**).

- 349) Synthesis and Unique Spectroscopic Properties of Phthalocyanine and Tetraazaporphyrin Complexes with Main Group Elements.

N. Kobayashi

The 5th Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Ontario, Canada, May 19-23, 2015 (**Invited Lecture**).

- 350) Synthesis and Unique Spectroscopic Properties of Main Group element Phthalocyanine and Tetraazaporphyrin Complexes

N. Kobayashi, T. Furuyama, K. Satoh, T. Yoshida, and T. Kushiya

The 227th ECS Meeting, Chicago, Illinois, USA, May 24-28, 2015 (**Invited Lecture**).

- 351) Core-Modified Porphyrins Containing Novel Heterocyclic Moieties.

Z. Shen, Z. Zhou, Y. Chang, S. Shimizu, J. Mack, C. Schütt, R. Herges, and N. Kobayashi

The 227th ECS Meeting, Chicago, Illinois, USA, May 24-28, 2015 (**Invited Lecture**).

6. Invited Lectures and Teaching in Japan

- 1) Near-Infrared Magnetic Circular Dichroism of Hemoproteins.

N. Kobayashi

The 8th Symposium on Non-Destructive Measurements-Principle and Applications of Near-Infrared Spectroscopy, Tokyo, Dec. 7, 1992.

- 2) Determination of the Asymmetric Field Surrounding Heme.

N. Kobayashi

Summer School of Living Organism-Related Chemistry Division, Chem. Soc. Jpn. Tokushima, Aug. 3-5, 1993.

- 3) Adjustment of Visible Absorption Band Position and Intensity of Phthalocyanines.

N. Kobayashi

Design and Novel Properties of π -d Hybrid Electron System Molecular Solids, Seminar in the Institute of Molecular Science (分子科学研究所), Okazaki, June 9-11, 1995.

- 4) Synthesis and Spectro- and Electrochemical Properties of Phthalocyanine Dimers.

N. Kobayashi

The 45th Symposium of Metallocomplex Chemistry-Structure and Function of Metallocomplexes of Nanometer Scale, Hakata, Oct. 12-14, 1995.

- 5) Molecular Design and Electronic Spectra of Phthalocyanine Derivatives.
N. Kobayashi
Open Symposium, The Ministry of Education, Total Research (B)-Fundamental Research and New Development of Functional Materials with π -Electrons, Tokyo, Dec. 8, 1995.
- 6) Metallo-Containing Liquid Crystals and Discotic Liquid Crystals.
K. Ohta and N. Kobayashi
International Workshop on Advanced Materials, Osaka, Dec. 11-12, 1995.
- 7) Chemistry of Giant Aromatic Molecules.
N. Kobayashi
Concentrated Lectures to Graduate Course Students, Institute of Advanced Material Study, Kyushu University (九州大学), Jan. 23-24, 1996.
- 8) Electrochemical and Spectroscopic Properties of Porphyrin and Phthalocyanine Derivatives.
N. Kobayashi
Regional Meeting of Japan Chemical Society, Hachinohe, Oct. 2-3, 1996.
- 9) Chemistry of Giant Aromatic Molecules.
N. Kobayashi
Department of Chemistry, Graduate School of Science, Hokkaido University (北海道大学), March 10-12, 1997.
- 10) Synthesis and Properties of Ring-expanded and Symmetry Lowered Phthalocyanine Analogues.
N. Kobayashi
19th Organic Chemistry Colloquium, Zao Heights, Zao, July 21-23, 1997.
- 11) Azaporphyrins: Corelationship between Size, Symmetry, Substituents, and Electrochemical and Spectroscopic Properties.
N. Kobayashi
The IMS Symposium on Structures and Functions of Coordination Compounds with a Nanometer-Scale, Okazaki, Aug. 19-21, 1997.
- 12) Relationship between Size, Symmetry, and Substituents Groups of Porphyrins and Phthalocyanines and Their Spectroscopic and Electrochemical Properties.
N. Kobayashi
Akita University (秋田大学), Akita, Nov. 28, 1997.
- 13) Synthesis and Spectroscopic Characteristics of Non-Symmetrical Phthalocyanines.
N. Kobayashi
Shizuoka University (静岡大学), Hamamatsu, April 17, 1998.

- 14) Relationship between Size and Symmetry of Tetraazaporphyrin Derivatives and Their Spectroscopic and Electrochemical Properties.
N. Kobayashi
Annual Meeting of Japan Chemical Society, Matsuyama, Sept. 16, 1998 (**Plenary Lecture**).
- 15) Optically Active Phthalocyanines.
N. Kobayashi
The 62th Okazaki Conference, "Structural Hierarchy in Molecular Science, From Nano- and Mesostuctures to Microstructures". Okazaki, Jan. 10-13, 1999.
- 16) The Status Quo and a View of Phthalocyanine Chemistry.
N. Kobayashi
Polymer Society, Tokyo, Nov. 1st, 1999.
- 17) Characteristics of Phthalocyanines-Toward Macromolecularization.
N. Kobayashi
The 1st Society for the Study of Macromolecules, Hiroshima, Nov. 13, 1999.
- 18) Chemistry of Optically Active and Dinuclear Phthalocyanines.
N. Kobayashi
Regional Meeting of Japan Chemical Society, Iwate Univ., Morioka, Dec. 6, 1999.
- 19) Fascination and Chemistry of Phthalocyanines.
N. Kobayashi
Department of Chemistry (岡山大学), Okayama University, Jan. 21, 2000.
- 20) Chemistry of Porphyrins and Phthalocyanines.
N. Kobayashi
Lectures to Graduate Course and Undergraduate Course Students, Department of Chemistry, Saitama University (埼玉大学), Nov. 18-20, 2000.
- 21) Synthesis, Physical Chemistry, and Applications of Porphyrins and Phthalocyanines.
N. Kobayashi
Lectures to Graduate Course and Undergraduate Course Students, Department of Chemistry, Tsukuba University (筑波大学), Nov. 29-Dec. 1, 2000.
- 22) History and Chemistry of Porphyrins and Phthalocyanines.
N. Kobayashi
Lectures to Graduate Course and Undergraduate Course Students, Department of Chemistry, Shimane University (島根大学), Jan. 11-12, 2001.
- 23) Optically Active Phthalocyanines and Their Circular Dichroism.
N. Kobayashi
Study of the Chiral Molecular Science of the 21st Century, Inst. of Molecular Sciecne, Okazaki, March 6-7, 2001.

- 24) Synthesis and Properties of Low-Symmetrical Tetraazaporphyrins.
N. Kobayashi
Japan Chemical Society 79th Annual Meeting, Kobe, March. 28-30, 2001.
- 25) Synthesis and Properties of Mono- and Di-Substituted Cobalt Phthalocyanines.
N. Kobayashi, H. Miwa, and T. Fukuda
The 51st Meeting of Japan Coordination Chemistry Society, Matsue, Sept. 28-30, 2001.
- 26) Functional Molecules.
N. Kobayashi
Morioka No.1 High School (盛岡第一高等学校), Nov. 2, 2002.
- 27) Inorganic Chemistry and Advanced Inorganic Chemistry.
N. Kobayashi
Concentrated Lectures to Undergraduate and Graduate Course Students for Obtaining Qualification as a Teacher, Department of Education, Graduate School of Education, Hirosaki University (弘前大学), Oct. 31-Nov. 3, 2003.
- 28) Recent Advances on Low Symmetry Phthalocyanines.
N. Kobayashi
Workshop on Nano-Scale Functional Dyes, Natl. Inst. for Material Science (物質・材料研究機構), Tokyo, March 28, 2003.
- 29) Chemistry of Functional Molecules.
N. Kobayashi
Izumi Tateyama High School (泉館山高等学校), June 28, 2003.
- 30) Leading Edge Research on Phthalocyanines.
N. Kobayashi
Display and Functional Materials, Kagaku Kaikan, Tokyo, Nov. 20, 2003.
- 31) Circular Dichroism of Optically Active Phthalocyanine Systems.
N. Kobayashi
Department of Molecular Engineering, Graduate School of Engineering, Osaka University (大阪大学), May 11, 2004.
- 32) Phthalocyanine-Chemistry and Functions.
N. Kobayashi
Shirakaba Summer School, Kusatsu, Aug. 20-22, 2004.
- 33) The Forefront of Phthalocyanine Research
N. Kobayashi,
The 11th Workshop of 174 Division, JSPS, Tokyo, Oct. 21, 2004.
- 34) Recognition of Polyphenols by the Use of Phthalocyanine Dye.

N. Kobayashi

Interchange among Tohoku University People, Akasaka, Tokyo, Feb. 1, 2005.

- 35) Helical Structures of N-Alkylated Poly(*p*-benzamide)s.
N. Kobayashi, A. Muranaka, A. Tanatani, A. Yokoyama, I. Azumaya, M. Shiro, M. Uchiyama, and T. Yokozawa
The 35th Meeting of Structural Organic Chemistry Meeting, Osaka Prefectural Univ., Osaka, Sept. 9-10, 2005.
- 36) Helical Structures of N-Alkylated Poly(*p*-benzamide)s.
N. Kobayashi, A. Muranaka, A. Tanatani, A. Yokoyama, I. Azumaya, M. Shiro, M. Uchiyama, and T. Yokozawa
The 54th Meeting of Polymer Society, Yamagata, Sept. 20-22, 2005.
- 37) Functional Molecules.
N. Kobayashi
Shizuoka Nirayama High School (静岡蕪山高等学校), Nov. 26, 2005.
- 38) Inorganic Chemistry and Advanced Inorganic Chemistry.
N. Kobayashi
Concentrated Lectures to Undergraduate and Graduate Course Students for Obtaining Qualification as a Teacher, Department of Education, Graduate School of Education, Hirosaki University (弘前大学), Jan. 19-22, 2006.
- 39) Synthesis of Phthalocyanines and Control of Their Absorption Bands.
N. Kobayashi
Synthesis of Dyes and Control of Their Absorption Bands, Jouhokikou Kouenkai, Tokyo, Jan. 27, 2006.
- 40) The Forefront of Phthalocyanine Research
N. Kobayashi
The 174th Division, JSPS, Shufukaikan, Tokyo, June 1, 2006.
- 41) Assignment of Absorption Bands of Porphyrin-Phthalocyanine Rare-Earth Sandwich Dimers and Trimers by Magnetic Circular Dichroism Spectroscopy.
N. Kobayashi
The 23rd Inorganic and Analytical Chemistry Colloquium, Kawatabi, June 2-3, 2006.
- 42) Recent Topic in Phthalocyanine Chemistry.
N. Kobayashi
Nara Inst. Advanced Technology (奈良先端科学技術大学), Dec. 1, 2006.
- 43) Elucidation of the Correlation between Molecular Structure and Electronic Absorption, CD, and MCD of Giant Aromatic Molecules.
N. Kobayashi

The 87th Japan Chemical Society Meeting, Osaka, March 26, 2007 (Award Lecture).

- 44) Relationship between Molecular Structure and the Observed Spectroscopic and Electrochemical Properties of Giant Aromatic Molecules.
N. Kobayashi
Nagoya Institute of Technology (名古屋工業大学), March 9, 2009.
- 45) Synthesis and Spectroscopic Properties of Phthalocynines and Porphyrins.
N. Kobayashi
Tokyo Metropolitan University (首都大学東京), Nov. 27, 2009.
- 46) Functional Molecules.
N. Kobayashi
Haranomachi High School (原町高等学校), Fukushima, Dec. 3, 2009.
- 47) Analysis of the Circular Dichroism Spectra of Helically Stacked Aromatic Molecules.
A. Muranaka, M. Uchiyama, and N. Kobayashi
The 59th Discussion of Polymer Molecules, Hokkaido University, Sapporo, Sept. 15-17, 2010.
- 48) Functional Molecules.
N. Kobayashi
Morioka No. 1 High School (盛岡第一高等学校), Morioka, Dec. 11, 2010.
- 49) Relationship between the Molecular Structures and Observed Properties of Azaporphyrins and Phthalocyanines.
N. Kobayashi
Department Seminar, Science University of Tokyo (東京理科大学), Tokyo, Dec. 14, 2010.
- 50) Relationship between the Molecular Structures and Observed Properties of Porphyrins.
N. Kobayashi
Research Institute for Electronic Science, Hokkaido University (北海道大学), Sapporo, Feb. 4, 2011.
- 51) Functional Molecules.
N. Kobayashi
Nagano High School (長野高等学校), Oct. 8, 2011.
- 52) Synthesis of Expanded Phthalocyanine Congeners Including Urea Units in Their Skeleton.
N. Kobayashi
The 5th Symposium on Organic π Electron Systems, Osaka, Nov. 25-26, 2011.
- 53) Chemistry of Giant Aromatic Molecules.
N. Kobayashi
Concentrated Lectures in Graduate School of Engineering, Kyushu University (九州大学), Dec. 2011.
- 54) What Can We Learn from March 11, 2011 Earthquake?

- N. Kobayashi
Department of Chemistry, Osaka Prefectural University (大阪府立大学), Osaka, July 26, 2012.
- 55) History, Synthesis, Properties, and Applications of Porphyrins and Phthalocyanines.
N. Kobayashi
Concentrated Lectures in Graduate School of Science, Osaka Prefectural University (大阪府立大学), Osaka, July, 2012.
- 56) Functional Molecular Chemistry.
K. Kobayashi
Yokote High School (横手高等学校), Yamagata, Sept. 12, 2013.
- 57) History, Synthesis, Properties, and Applications of Porphyrins and Phthalocyanines.
N. Kobayashi
Concentrated Lectures in Graduate School of Science, Kyushu University (九州大学), Hakata, Oct., 2012.
- 58) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Chemistry, Tsukuba University (筑波大学), Tsukuba, November 7, 2012.
- 59) Synthesis and Practical Use of Phthalocyanines.
N. Kobayashi
Concentrated Lectures in Graduate School of Science, Tsukuba University (筑波大学), Tsukuba, November, 2012.
- 60) Synthesis and Properties of Superphthalocyanine Derivatives.
N. Kobayashi, Y. Ogura, and T. Furuyama
The 4th International Symposium of Highly Elaborated π -Space and Its Function, Shizuoka, Nov. 13-14, 2012.
- 61) History, Synthesis, Properties, and Applications of Porphyrins and Phthalocyanines.
N. Kobayashi
Department of Chemistry, Ehime University (愛媛大学), Matuyama, November, 2012.
- 62) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Muroran Institute of Technology (室蘭工業大学), Oct. 3, 2013.
- 63) Synthesis, Applications, and Practical Use of Functional Metallophthalocyanines.
N. Kobayashi
Department of Instrumental Analysis, Organization for Research Promotion, Iwate University (岩手大学), Morioka, Nov. 11, 2013.
- 64) Synthesis and Properties of μ -oxo Dimer of Tetrabenzotriazacorrole.

N. Kobayashi

The 7th Symposium on Organic π Electron System. Takasaki, Dec.13-14, 2013.

- 65) Chemistry of Giant Aromatic Metal Complexes.

N. Kobayashi

Department of Pharmacy, The University of Tokyo (東京大学), Tokyo, Jan. 23-24, 2014.

- 66) Synthesis and Properties of Rectangular Phthalocyanines, Superazaporphyrins, and Chiral and/or Low-Symmetry Subphthalocyanines.

N. Kobayashi

Department of Applied Chemistry, Graduate School of Engineering, Osaka University (大阪大学), Suita, Nov. 18, 2014.

- 67) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.

N. Kobayashi

Department of Chemistry, Priority Organization for Innovation and Excellence, Kumamoto University
(熊本大学), Nov. 20, 2014.

- 68) My Trifle Contribution to Aromatic π -Systems: Circular Dichroism, Magnetic Circular Dichroism, and Electrochemistry.

N. Kobayashi

The 8th Symposium on Organic π - Electron Systems, Saga, Nov. 21-22, 2014 (**Plenary Lecture**).

- 69) Synthesis, Applications and Practical Use of Functional Metallophthalocyanines.

N. Kobayashi

Hachinohe National College of Technology (八戸工業高等専門学校), Dec. 8-9, 2014.

7. Other Scientific Contributions

- 1) A member of Organizing and Program Committee for the *PACIFICHEM 95*, the Section of Phthalocyanine, Honolulu, Dec. 17-22, 1995.
- 2) A member of Organizing and Program Committee for *the 1st International Symposium on Porphyrins and Phthalocyanines*, the Section of Phthalocyanine, Dijon, France, June. 25-30, 2000.
- 3) Representative of Japan and Secretary of International Society of Porphyrins and Phthalocyanines (2000~).
- 4) A member of Organizing and Program Committee for *the 2nd International Symposium on Porphyrins and Phthalocyanines*, the Section of Phthalocyanine, Kyoto, June 30-July 5, 2002.
- 5) Theory and Spectroscopy Session Organizer in *the International Symposium on Porphyrins and Phthalocyanines* to be held every two years since year 2000.

- 6) Representative of Japan in Eurasia Conference on Chemical Sciences to be held every two years (since 2008).
- 7) Functional π Materials Session Organiser in Eurasia Conference since 2010.
- 8) Conference Co-Chair of International Conference on Bioinorganic Chemistry to be held every two years since its foundation in Canada in 2007.
- 9) Ad Hoc Reviewer for *Journal of the American Chemical Society*, since April, 1993.
- 10) Ad Hoc Reviewer for *International Science Foundation*, Washington, D.C., USA.
- 11) Ad Hoc Reviewer for *Inorganic Chemistry*.
- 12) Ad Hoc Reviewer for *Journal of Physical Chemistry, A, B, C and Letters*.
- 13) Ad Hoc Reviewer for *Journal of Organic Chemistry*.
- 14) Ad Hoc Reviewer for *Photochem. Photobiol.*
- 15) Ad Hoc Reviewer for *Tetrahedron Letters*.
- 16) Ad Hoc Reviewer for *Tetrahedron Asymmetry*.
- 17) Ad Hoc Reviewer for *Heterocycles*.
- 18) Ad Hoc Reviewer for *Inorg. Chim. Acta*.
- 19) Ad Hoc Reviewer for *Synlett*.
- 20) Ad Hoc Reviewer for *Chemistry Letters*.
- 21) Ad Hoc Reviewer for *Bulletin of the Chemical Society of Japan*.
- 22) Ad Hoc Reviewer for *Synthesis*.
- 23) Ad Hoc Reviewer for *Eur. J. Inorg. Chem.*
- 24) Ad Hoc Reviewer for *Eur. J. Org. Chem.*
- 25) Ad Hoc Reviewer for *ChemPhysChem*.
- 26) Ad Hoc Reviewer for *Chem. Commun.*
- 27) Ad Hoc Reviewer for *J. Electroanal. Chem. Interfacial Chem.*

- 28) Ad Hoc Reviewer for *Angew. Chem. Int. Ed.*
- 29) Ad Hoc Reviewer for *Optics Commun.*
- 30) Ad Hoc Reviewer for *Inorg. Commun.*
- 31) Ad Hoc Reviewer for *Vibrat. Spectrsc.*
- 32) Ad Hoc Reviewer for *Aust. J. Chem.*
- 33) Ad Hoc Reviewer for *Dalton. Trans.*
- 34) Ad Hoc Reviewer for *New J. Chem.*
- 35) Ad Hoc Reviewer for *Chirality.*
- 36) Ad Hoc Reviewer for *Org. Lett.*
- 37) Ad Hoc Reviewer for *PCCP.*
- 38) Ad Hoc Reviewer for *Biochemistry.*
- 39) Ad Hoc Reviewer for *Chem. Eur. J.*
- 40) Ad Hoc Reviewer for *Chem. Asian J.*
- 41) Ad Hoc Reviewer and International Advisory Editorial Board for *J. Porphyrins & Phthalocyanines.*
- 42) Ad Hoc Reviewer for *Carbon.*
- 43) Ad Hoc Reviewer for *Dyes & Pigm.*
- 44) Ad Hoc Reviewer for *J. Lumin.*
- 45) Ad Hoc Reviewer for *Chem. Sci.*
- 46) Ad Hoc Reviewer for *J. Inorg. Biochem.*
- 47) Ad Hoc Reviewer for *Org. Biomol. Chem.*
- 48) Ad Hoc Reviewer for *Tetrahedron.*
- 49) Ad Hoc Reviewer for *J. Mater. Chem.*

- 50) Ad Hoc Reviewer for *Chem. Phys. Lett.*
- 51) Ad Hoc Reviewer for *Can. J. Chem.*

- 52) Ad Hoc Reviewer and International Advisory Editorial Board for *Macroheterocycles*.

- 53) Ad Hoc Reviewer for *Coord. Chem. Rev.*

- 54) Ad Hoc Reviewer for *Chem. Rev.*

- 55) Ad Hoc Reviewer for *Chem. Soc. Rev.*

- 56) Ad Hoc Reviewer for *Acc. Chem. Res.*

- 57) Ad Hoc Reviewer for *Mndeleev Commun.*

- 58) Ad Hoc Reviewer for *CrystEngComm*.

- 59) Ad Hoc Reviewer for *Biophys.*

- 60) Ad Hoc Reviewer for *Biochim. Biophys. Acta.*

- 61) Ad Hoc Reviewer for *Molecules*.