

## Theoretical and Computational Molecular Science

C. R. BAIZ, B. BŁASIAK, J. BREDEBECK, M. CHO, J.-H. CHOI, S. A. CORCELLI, A. G. DIJKSTRA, C.-J. FENG, S. GARRETT-ROE, N.-H. GE, M. W. D. HANSON-HEINE, J. D. HIRST, T. L. C. JANSEN, K. KWAC, K. J. KUBARYCH, C. H. LONDERGAN, H. MAEKAWA, M. REPERT, S. SAITO, S. ROY, J. L. SKINNER, G. STOCK, J. E. STRAUB, M. C. THIELGES, K. TOMINAGA, A. TOKMAKOFF, H. TORII, L. WANG, L. J. WEBB and M. T. ZANNI, “Vibrational Spectroscopic Map, Vibrational Spectroscopy, and Intermolecular Interaction,” *Chem. Rev.* **120**, 7152–7218 (2020).

C.-L. LIN, N. KAWAKAMI, R. ARAFUNE, E. MINAMITANI and N. TAKAGI, “Scanning Tunneling Spectroscopy Studies of Topological Materials,” *J. Phys.: Condens. Matter* **32**, 243001 (24 pages) (2020). DOI: 10.1088/1361-648X/ab777d

M. EHARA and Y. MORISAWA, “Theoretical and Experimental Molecular Spectroscopy of Far-Ultraviolet Region,” in *Molecular Spectroscopy: A Quantum Chemistry Approach*, Y. Ozaki, M. J. Wojcik and J. Popp, Eds., Wiley, pp. 119–145 (2019).

Y. MAEDA, M. YAMADA and M. EHARA, “Chemical Functionalization and Characterization of Carbon Nanotubes,” *Carbon*, **290**, 183–194 (2019). (in Japanese)

A. NAKAMURA, K. OKAZAKI, T. FURUTA, M. SAKURAI and R. IINO, “Chitinase Moves on and Degrades Crystalline Chitin with Brownian Motion,” *Seibutsubutsuri*, **59**(6), 330–333 (2019). (in Japanese)

K. OKAZAKI, “Mechanism of Na<sup>+</sup>/H<sup>+</sup> Antiporter from Molecular Simulations and Engineering of a Faster Transporter,” *Seibutsubutsuri*, **60**(2), 102–104 (2020). (in Japanese)

## Photo-Molecular Science

F. MATSUI, T. MATSUSHITA and H. DAIMON, *Detailed Introduction to Photoelectron Spectroscopy*, Maruzen; Tokyo, pp. 1–298 (2020). (in Japanese)

T. KINOSHITA, T. MURO, T. MATSUSHITA, H. OSAWA, T. OHKOCHI, F. MATSUI, H. MATSUDA, M. SHIMOMURA, M. TAGUCHI and H. DAIMON, “Progress in Photoelectron Holography at SPring-8,” *Jpn. J. Appl. Phys.* **58**, 110503 (11 pages) (2019).

M. NAGASAKA, H. YUZAWA and N. KOSUGI, “Soft X-Ray Absorption Spectroscopy of Liquids for Understanding Chemical Processes in Solution,” *Anal. Sci.* **36**(1), 95–105 (2020).

M. NAGASAKA and N. KOSUGI, “Soft X-Ray Liquid Absorption Spectroscopy in Transmission Mode Realized by Precise Thickness Control,” *Butsuri*, **75**(8), 496–503 (2020). (in Japanese)

K. SHIMADA, “Hiroshima Synchrotron Radiation Center at Hiroshima University,” *AAPPS Bulletin* **30**(4), 30–34 (2020).

## Materials Molecular Science

T. YOKOYAMA and Y. IWASAWA, “Operando Observation of Sulfur Species that Poison Polymer Electrolyte Fuel Cell Studied by Near Ambient Pressure Hard X-Ray Photoelectron Spectroscopy,” *SPring-8 Research Frontiers* **2019**, 64–65 (2020).

T. URUGA, M. TADA, O. SEKIZAWA, Y. TAKAGI, T. YOKOYAMA and Y. IWASAWA, “Status of Synchrotron Radiation X-Ray-Based Multi-Analytical Beamline BL36XU for Fuel Cell Electrocatalysis Research at SPring-8,” *Synchrotron Radiation News* **33**, 26–28 (2020).

K. YAMAMOTO, “Report of the 40<sup>th</sup> International Conference on Vacuum Ultraviolet and X-Ray Physics (VUVX2019),” *J. Jpn. Soc. Synchrotron Radiat. Res.* **32**, 333–335 (2019). (in Japanese)

T. KOITAYA, S. YAMAMOTO, I. MATSUDA and J. YOSHINOBU, “Surface Chemistry of Carbon Dioxide on Copper Model Catalysts Studied by Ambient-Pressure X-Ray Photoelectron Spectroscopy,” *e-J. Surf. Sci. Nanotechnol.* **17**, 169–178 (2019).

T. SUGIMOTO, “Peculiar Hydrogen-Bond Structure, Physical Properties and Function of Interfacial Water Molecules Elucidated by Nonlinear Laser Spectroscopy,” *Mol. Sci.* **14**, A0112 (2020). (Award Accounts, 12<sup>th</sup> Young Scientist Award of the Physical Society of Japan) DOI: 10.3175/molsci.14.A0112

T. SUGIMOTO and Y. MATSUMOTO, “Orientational Ordering in Heteroepitaxial Water Ice on Metal Surfaces,” *Phys. Chem. Chem. Phys.* **29**, 16435–17012 (2020). DOI: 10.1039/D0CP01763A

T. SUGIMOTO, “Unique Hydrogen-Bond Structures of Water Molecules at Ice Surface,” *Chemistry and Chemical Industry* **73**(6), 490 (2020). (in Japanese)

T. SUGIMOTO, “Observation of Proton Ordering in Crystalline-Ice Films Grown on Low-Temperature Substrate by Sum-Frequency Generation Spectroscopy,” *Lot. Temp. Sci.* **78**, 61–70 (2020). DOI: 10.14943/lowtemsci.78.61

M. HIRAMOTO, M. KIKUCHI and S. IZAWA, “Lateral Junction for Single Crystalline Organic Solar Cells,” in *Liquid and Single Crystals: Properties, Manufacturing and Uses*, J. Groosen, Ed., NOVA Science Publishers, Inc.; New York, Chap. 6, pp. 205–239 (2019).

S. IZAWA, K. FUJIMOTO, M. TAKAHASHI and M. HIRAMOTO, “Reduction of Voltage Loss of Organic Solar Cells—Toward the Realization of Organic Solar Cells Comparable to the High-Efficient Inorganic Solar Cells,” *Clean Energy*, **29**, 42–48 (2020). (in Japanese)

M. HIRAMOTO and S. IZAWA, “New Phase of Organic Solar Cells—Close Up of the Suppression of Radiationless Recombination,” *Kagaku*, **75**, 68–69 (2020). (in Japanese)

# LIST OF REVIEW ARTICLES AND TEXTBOOKS

G. KOBAYASHI, "H<sup>-</sup> Conductors~Current State of Materials Development and Potential Applications for Batteries~," *Denkikagaku*, **87**, 227–232 (2019). (in Japanese)

## Life and Coordination-Complex Molecular Science

C. SATO, K. KATO, Y. YAMAGUCHI, D. KOHDA, R. KATO, K. G. N. SUZUKI, K. KIKUCHI, G. HIRAI, Y. KIZUKA, K. TANAKA, Y. NAKASHIMA and M. SETOU, "Structural Biology of Glycans," in *Glycoscience: Basic Science to Applications*, N. TANIGUCHI, T. ENDO, J. HIRABAYASHI, S. NISHIHARA, K. KADOMATSU, K. AKIYOSHI and K. F. AOKI-KINOSHITA, Eds., Springer: Singapore, pp. 35–63 (2019).

T. SATOH and K. KATO, "Recombinant Expression and Purification of Animal Intracellular L-Type Lectins," in *Lectin Purification and Analysis, Methods in Molecular Biology*, J. HIRABAYASHI, Ed., Humana Press; New York, **2132**, pp. 411–417 (2020).

S. YANAKA, R. YOGO and K. KATO, "Biophysical Characterization of Dynamic Structures of Immunoglobulin G," *Biophys. Rev.* **12**, 637–645 (2020).

A. NAKAMURA, K. OKAZAKI, T. FURUTA, M. SAKURAI, J. ANDO and R. IINO, "Crystalline Chitin Hydrolase Is a Burnt-Bridge Brownian Motor," *Biophys. Physicobiol.* **17**, 51–58 (2020). DOI: 10.2142/biophysico.BSJ-2020004

R. IINO, K. KINBARA and Z. BRYANT, "Introduction: Molecular Motors," *Chem. Rev.* **120**, 1–4 (2020). DOI: 10.1021/acs.chemrev.9b00819

A. NAKAMURA, K. OKAZAKI, T. FURUTA, M. SAKURAI and R. IINO, "Chitinase Moves on and Degrades Crystalline Chitin with Brownian Motion," *Seibutsubutsuri*, **59**(6), 330–333 (2019). (in Japanese)

T. KUSAMOTO, "Development of Photofunctions of Open-Shell Molecules Based on Coordination Chemistry," *Bull. Jpn. Soc. Coord. Chem.* **75**, 35–41 (2020). (in Japanese)

## Research Center of Integrative Molecular Systems

S. AKIYAMA, K. AOKI and Y. KUBO, "Biophysical Research in Okazaki, Japan," *Biophys. Rev.* **12**, 237–243 (2020). doi.org/10.1007/s12551-020-00633-4

S. AKIYAMA, "Treasurer's Comments on the Financial Position of the Biophysical Society of Japan," *Biophys. Rev.* **12**, 209–211 (2020). doi.org/10.1007/s12551-020-00623-6

R. KOGA and N. KOGA, "Consistency Principle for Protein Design," *Biophys. Physicobiol.* **16**, 304–309 (2019).

M. SUDA and H. M. YAMAMOTO, "Reconfigurable Spin Filter Based on Molecular Motor," *Ouyoubutsuri*, **89**(4), 203–207 (2020). (in Japanese)

## Center for Mesoscopic Sciences

H. OKAMOTO, "Local Optical Activity of Nano-to Microscale Materials and Plasmons," *J. Mater. Chem. C* **7**, 14771–14787 (2019).

## Division of Advanced Molecular Science

T. SAWADA and M. FUJITA, "Folding and Assembly of Metal-Linked Peptidic Nanostructures," *Chem* **6**, 1861–1876 (2020). DOI: 10.1016/j.chempr.2020.07.002

H. TAKAYA, "Mechanistic Studies on Microwave-Assisted Organic Reactions," *Chemistry and Chemical Industry* **73**(3), 230–231 (2020). (in Japanese)

H. TAKAYAa, "No. 367: FeHC<sub>6</sub>Si<sub>2</sub>," *Encyclopedia of Coordination Compounds*, 391 (2020).

## Division of Research Innovation and Collaboration

Y. SANO, "Program Manager Role (ImPACT)," *OYO BUTURI*, **88**(8), pp. 539–541 (2019). (in Japanese)

Y. SATO and T. TAIRA, "Transparent Ceramics Made of Non-Isometric Crystals," *Rev. Laser Eng.* **47**(8), pp. 442–447 (2019). (in Japanese)

Y. SATO and T. TAIRA, "Report on OPIC2019 the 7<sup>th</sup> Laser Ignition and Giant-Microphtonics Conference 2019 (LIC2019)," *Rev. Laser Eng.* **47**(11), pp. 650–651 (2019).

T. TAIRA, "Micro Domain Control toward Tiny Integrated Power Lasers," *CERAMICS JAPAN*, **55**(2), pp. 113–116 (2020). (in Japanese)

T. TAIRA, "Laser R&D for Processing Advantages," *FORM TECH REVIEW 2019*, The Amada Foundation; Kanagawa, **29**, pp. 63–64 (2020). (in Japanese)

H. OHBA, I. WAKAIDA and T. TAIRA, "Remote Laser Analysis Technique in Harsh Environment," *J. Atomic Energy Soc. Jpn.* **62**(5), pp. 263–267 (2020). (in Japanese)