

Accounts and Reviews BCSJ 100th Anniversary Collection

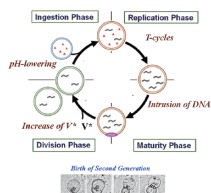
Open Access

Keywords: constructive approach | dynamic supramolecular system | GV-based model protocell

"Life" as a dynamic supramolecular system created through constructive approach

Tadashi Sugawara,* Muneyuki Matsuo, and Taro Toyota

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae134 doi:10.1093/bulcsj/uoae134



We have constructed a dynamic supramolecular system that can be considered a model protocell. Its typical dynamics are recurrent with four stages (replication, maturation, division, and ingestion) and the protocell reproduces itself generationally (microscopic images below). Switching between stages occurs through sensitivity to changes in the environment. Competitive self-replication among model protocells allows the emergence of dominant species through natural selections, which is essential for evolution.

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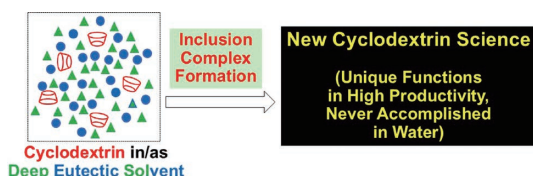
Open Access

Keywords: cyclodextrin | deep eutectic solvent | inclusion complex | modified cyclodextrin

Deep eutectic solvents for next-generation cyclodextrin science

Makoto Komiyama*

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae117 doi:10.1093/bulcsj/uoae117



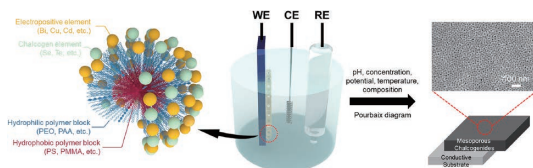
Award Accounts BCSJ 100th Anniversary Collection

Open Access

Keywords: chalcogenides | mesoporous materials | metals
Mesoporous materials 2.0: innovations in metals and chalcogenides for future applications

Minsu Han, Tomota Nagaura, Jeonghun Kim, Saad M. Alshehri, Tansir Ahamad, Yoshio Bando, Azhar Alowasheer, Yusuke Asakura, and Yusuke Yamauchi*

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae136 doi:10.1093/bulcsj/uoae136



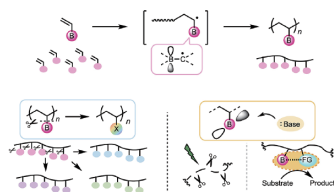
Award Accounts BCSJ 100th Anniversary Collection

Free Access

Keywords: boron | radical polymerization | side-chain replacement
Alkenylboronic acid derivatives as monomers for radical polymerization leading to polymer synthesis via side-chain replacement and development of boron-based functions

Tsuyoshi Nishikawa*

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae129 doi:10.1093/bulcsj/uoae129

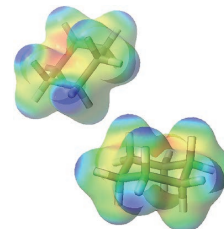


BCSJ Award Article Open Access

Keywords: electron density | neutron diffraction | x-ray diffraction
Experimental determination of deviation from spherical electron densities of atoms in cyclohexane molecules in the liquid state

Yasuo Kameda,* Akane Takaku, Yuko Amo, Takeshi Usuki, Kazuhiro Nawa, Taku J. Sato, Takashi Honda, and Toshiya Otomo

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae140 doi:10.1093/bulcsj/uoae140



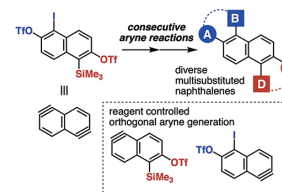
Selected Paper Open Access

Keywords: arynes | polyaromatic hydrocarbons | selective aryne generation

Synthesis of multisubstituted naphthalenes through consecutive aryne reactions

Takanori Tanaka, Shinya Tabata, Keisuke Nakamura, Yuki Hazama, Yuki Sakata, Takamitsu Hosoya, and Suguru Yoshida*

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoaf001 doi:10.1093/bulcsj/uoaf001



Keywords: hopping transport | molecular wire | non-annulated structure

Annulated vs. non-annulated hopping sites in periodically twisted molecular wires

Ryo Asakawa, Soichi Yokoyama, Ryo Yamada,* Tatsuhiko Ohto,* Hirokazu Tada, and Yutaka Ie*

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae146 doi:10.1093/bulcsj/uoae146

Keywords: nonfullerene acceptors | selenophene | singlet exciton lifetime

Incorporation of selenophene into thienoazacoronene-based nonfullerene acceptor: impact on photophysical and photovoltaic properties

Motohisa Kubota, Tomokazu Umeyama,* Wataru Suzuki, Tomoyuki Koganezawa, Midori Akiyama, and Hiroshi Imahori*

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae147 doi:10.1093/bulcsj/uoae147

Keywords: electrode modification | fuel cell | in situ etching
In situ etching modification of graphite felt electrode and its electrochemical performance in biomass liquid-catalyst fuel cell system

Yongfeng Li,* Yuang Wei, Qiyi Liang, and Qianyan Liao

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae148 doi:10.1093/bulcsj/uoae148

Keywords: lysosome | NIR-dye molecules | photothermal effect
Exploring photo-excited states of aromatic sulfones for efficient near-infrared-activated photothermal cancer therapy

Kazuya Yoshida, Toshiaki Suzuki, Yasuko Osakada, Mamoru Fujitsuka, Yukiko Miyatake, Vasudevanpillai Biju, and Yuta Takano*

Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae137 doi:10.1093/bulcsj/uoae137

Keywords: heterogeneous catalysis | radical cation | redox catalysis
Racemization of chiral sulfoxide using an immobilized oxovanadium catalyst

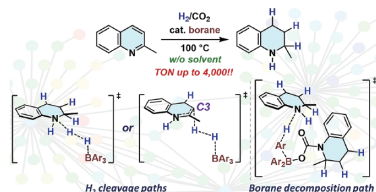
Tomoya Nishio, Hajime Shigemitsu, Toshiyuki Kida, Shuji Akai, and Kyohei Kanomata*
Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae144 doi:10.1093/bulcsj/uoae144

Selected Paper **Open Access**

Keywords: AFIR method | quantum chemical calculation | triarylboranes

Elucidating multicomponent mechanisms in the catalytic hydrogenation of 2-methylquinoline under crude-H₂ conditions: a key H₂-cleavage process by a boron–olefin Lewis pair

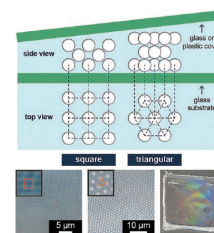
Taiki Hashimoto, Yu Harabuchi, Sensuke Ogoshi, Satoshi Maeda,* and Yoichi Hoshimoto*
Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae145 doi:10.1093/bulcsj/uoae145



Selected Paper

Keywords: 2D colloidal crystal | immobilization | polymer resin
Polymer-immobilized 2D nonclose-packed colloidal crystals

Minori Fujita, Marina Takemoto, Ami Matsuo, Akiko Toyotama, Tohru Okuzono, Tatsuya Ishikawa, Koichiro Hyodo, Masaya Nishida, and Junpei Yamanaka*
Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae142 doi:10.1093/bulcsj/uoae142



Keywords: origin of life | primitive protein | proteinogenic amino acid

Molecular dynamics simulations of putative primitive proteins including β-aspartic acid residues

Koichi Kato, Tomoki Nakayoshi, Ayato Mizuno, Mayuka Yabu, Eiji Kurimoto, and Akifumi Oda*
Bull. Chem. Soc. Jpn. 2025, 98, No. 1, uoae143 doi:10.1093/bulcsj/uoae143

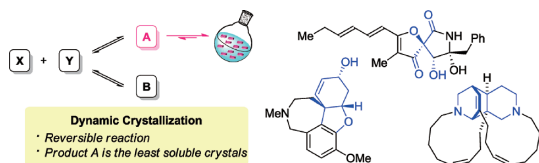
Chemistry Letters

Highlight Review **Open Access**

Keywords: crystallization-induced transformation | dynamic crystallization | total synthesis

Synthesis of natural products and their derivatives using dynamic crystallization

Takaaki Sato*
Chem. Lett. 2025, 54, No. 1, upae244 doi:10.1093/chemle/upae244



Keywords: oligodeoxynucleotides | phenylazothiazole group | x-irradiation

Radiolytic reduction and controlling hybridization of oligodeoxynucleotides bearing phenylazothiazole groups by hypoxic X-irradiation

Kouki Tamura, Tatsuya Nishihara, and Kazuhito Tanabe*
Chem. Lett. 2025, 54, No. 1, upae248 doi:10.1093/chemle/upae248

Keywords: alkali metal salts | DFT calculations | electronic absorption spectroscopy

Synthesis and characterization of alkali metal salts bearing a phenalenyl-based tridentate ligand

Takuya Kodama,* Hikaru Noguchi, Hayato Tsurugi,* and Mamoru Tobisu*
Chem. Lett. 2025, 54, No. 1, upae246 doi:10.1093/chemle/upae246

Keywords: aliphatic polycarbonate/polyester | ring-opening (co)polymerization | tetraalkylammonium salt

Synthesis of polycarbonates and polyesters via tetraalkylammonium salt-catalyzed ring-opening polymerization

Ryota Suzuki, Satoru Takagi, Minoru Matsuda, Takuya Yamamoto, Kenji Tajima, Feng Li, Takuya Isono,* and Toshifumi Satoh*
Chem. Lett. 2025, 54, No. 1, upae242 doi:10.1093/chemle/upae242

Keywords: chromophore | fluorescent protein | selective IR measurement

Selective IR measurement of fluorescent protein chromophore based on TFD-IR technique

Hirona Takahashi, Tomoya Miyake, and Makoto Sakai*
Chem. Lett. 2025, 54, No. 1, upae223 doi:10.1093/chemle/upae223

Keywords: cationic nickel(II) complexes | phenalenyl | X-ray crystallography

Cationic nickel(II) complexes bearing a phenalenyl-based tridentate ligand

Takuya Kodama,* Hikaru Noguchi, Hayato Tsurugi,* and Mamoru Tobisu*
Chem. Lett. 2025, 54, No. 1, upae251 doi:10.1093/chemle/upae251

Keywords: boron-stereogenic center | catalytic synthesis | enantioselective synthesis

Catalytic construction of stereogenic boron center on BODIPY via enantioselective Suzuki–Miyaura coupling

Aiko Kondo, Hideaki Takano,* and Hiroshi Shinokubo*
Chem. Lett. 2025, 54, No. 1, upae218 doi:10.1093/chemle/upae218

Open Access

Keywords: crown ether | ionophore | single-crystal-to-single-crystal transformation

Single-crystal-to-single-crystal transformation based on ionophore-like transport

Mizuki Ito, Jun Manabe, Katsuya Inoue, Takehiro Hirao, Takeharu Haino, Tomoyuki Akutagawa, Kiyonori Takahashi, Takayoshi Nakamura, and Sadafumi Nishihara*
Chem. Lett. 2025, 54, No. 1, upae252 doi:10.1093/chemle/upae252

Keywords: α-helix | pH-responsive crosslinked peptide | weakly acidic conditions

Development of pH-responsive crosslinked peptides that form stable α-helices under weakly acidic conditions

Miwo Amano, Junya Chiba,* Tetsuya Yasukagawa, Satoru Yokoyama, Yue Zhou, Yuki Ohishi, and Masahiko Inouye
Chem. Lett. 2025, 54, No. 1, upae245 doi:10.1093/chemle/upae245

Keywords: biradical | magnetic property | phase transition
Paramagnetic monomer and diamagnetic polymer of 5-(1-adamantyl)-1,3-phenylene bis(*tert*-butyl nitroxide)

Shunya Ueno, Shin-ichiro Takeshi, Shuichi Suzuki, and Takayuki Ishida*
Chem. Lett. 2025, 54, No. 1, upae239 doi:10.1093/chemle/upae239

Keywords: bromodomain and extraterminal inhibitors | bromodomain selectivity | mesenchymal stem cells
Effect of bromodomain and extraterminal inhibitors with different bromodomain selectivity on mesenchymal stem cells

Riho Tanimoto, Yung-Sing Wong, Mitsuhiro Ebara, and Koichiro Uto*
Chem. Lett. 2025, 54, No. 1, upae238 doi:10.1093/chemle/upae238

Keywords: dehydrogenation | e-Reaction | structured catalyst
Electric heating system for *iso*-C₅ dehydrogenation in the presence of H₂S

Hiroyasu Suganuma, Ryo Watanabe,* Priyanka Verma, Hiroshi Akama, and Choji Fukuhara*
Chem. Lett. 2025, 54, No. 1, upae228 doi:10.1093/chemle/upae228

Keywords: biocatalysis | ferritin | in-cell protein crystal
In-cell design of solid biocatalyst via crystalline inclusion protein A and ferritin fusion

Jiaxin Tian, Yuto Nakasuji, Basudev Maity, Koki Date, and Takafumi Ueno*
Chem. Lett. 2025, 54, No. 1, upae247 doi:10.1093/chemle/upae247

Open Access

Keywords: enzymatic reaction | peptide amphiphile | postmodification

Influence of self-assembling nonsubstrates on the enzymatic postmodification of peptide supramolecules

Ayato Higuchi, Rie Wakabayashi,* Izuru Kawamura, Masahiro Goto, and Noriho Kamiya*
Chem. Lett. 2025, 54, No. 1, upae241 doi:10.1093/chemle/upae241

Keywords: hollow particles | monodisperse | silicone
One-pot preparation of micrometer-sized monodispersed silicone hollow particles

Hyota Nishi, Shintaro Ishidate, Reina Nakamoto, Shinya Katsube, Nozomu Suzuki, Toyoko Suzuki, and Hideto Minami*
Chem. Lett. 2025, 54, No. 1, upae249 doi:10.1093/chemle/upae249

Keywords: anion conductivity | layered double hydroxides | orientation

Orientation and alignment control of LDH-containing composite membranes using magnetic processes and their anion conductivity

Masafumi Yamato,* Yuki Shinada, Eizo Ushijima, and Kohki Takahashi
Chem. Lett. 2025, 54, No. 1, upae250 doi:10.1093/chemle/upae250



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