Bulletin of the Chemical Society of Japan

BCSJ Award Article | Open Access

Keywords: cap analogs | in vitro transcription | mRNA

Synthesis of hydrophobic-tagged 2′-deoxy-modified cap analogs and its effect on mRNA translation

Zheyu Meng, Yuko Nakashima, Masahito Inagaki, Zhenmin Li, Susit Acharyya, Fumitaka Hashiya, Naoko Abe, Yasuaki Kimura, and Hiroshi Abe*
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoaf006 doi:10.1093/bulcsj/uoaf006

Keywords: autothermal reforming of acetic acid | $Ce_{1-x}Mg_xO_{2-\delta}$ solid solution | DFT

$Ce_{1-x}Mg_xO_{2-\delta}$ solid solution supported Ni-based catalysts for autothermal reforming of acetic acid for hydrogen production: effect of Mg doping

Ning Zhang, Fangqiao Pang, Mao Gan, and Lihong Huang*
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoaf003 doi:10.1093/bulcsj/uoaf003

Keywords: chemistry | measurement | synthesis

Effect of the electrical furnace cooling rate on the formation of a pale-green surface layer during the flux synthesis of emerald

Daisuke Kozaki,* Yuusei Sonobe, Haruki Tsuboi, Takahiko Morisaki, Ryosuke Andou, Kazumichi Yanagisawa, Shuji Oishi, Kazuya Imamura, Yoshinori Nishiwaki, Kazuya Kobiro, Akitaka Ito, Ayano Taniguchi, Takuya Matsuzaki, and Kogen Horikawa
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoaf005 doi:10.1093/bulcsj/uoaf005

Selected Paper | Open Access

Keywords: natural product | structure determination | total synthesis

Total synthesis-driven structure determination of viridamide A

Masahito Yoshida,* Kazuki Hagimoto, Tomonori Jo, Yoshinori Uekusa, Evgenia Glukhov, William H. Gerwick, and Hideo Kigoshi
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoaf007 doi:10.1093/bulcsj/uoaf007

Keywords: cage silsesquioxane | chirality | measurement

Construction of unsymmetrical open-cage silsesquioxanes

Honoka Yonezawa, Keigo Okamoto, Kensuke Naka, and Hiroaki Imoto*
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoaf008 doi:10.1093/bulcsj/uoaf008

Keywords: metal-organic frameworks | ratiometric luminescent assay | visual recognition TCs

Dual-responsive ratiometric luminescent assay for visual recognition of tetracyclines based on in situ encapsulation of Eu(III) and carbon dots into metal-organic frameworks

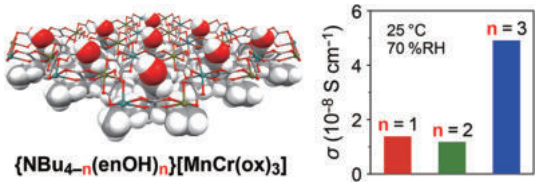
Kuiyu Yi,* Qifeng Zhao, and Xiaoqi Kang
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoaf004 doi:10.1093/bulcsj/uoaf004

Selected Paper

Keywords: bimetallic oxalate sheet | metal-organic framework | proton conductor

Superprotonic conduction of $\{NBu_{4-n}(enOH)_n\}[MnCr(ox)_3]$ (Bu = *n*-butyl; enOH = 2-hydroxyethyl; n = 1–3) in successive multiplication of hydroxyl proton-carrier in the cation

Hisashi Ōkawa,* Yukihiro Yoshida,* and Hiroshi Kitagawa*
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoae141 doi:10.1093/bulcsj/uoae141



Keywords: heteroditopic receptor | lithium chloride | solid–liquid extraction

Solid–liquid extraction of lithium chloride with a simple and flexible heteroditopic receptor

Tsubasa Mimuro, Seiichi Yoshino, Manabu Hirasawa, and Shin-ichi Kondo*
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoaf002 doi:10.1093/bulcsj/uoaf002

Keywords: n-Alkyltrimethylammonium bromides | thermodynamics and structure of complexes | water-soluble calix[n]arenes

Complex formation between n-alkyltrimethylammonium bromides and water-soluble calix[n]arenes

Kiyofumi Murakami,* Seiji Tani, and Kenji Waizumi
Bull. Chem. Soc. Jpn. 2025, 98, No. 2, uoae139 doi:10.1093/bulcsj/uoae139

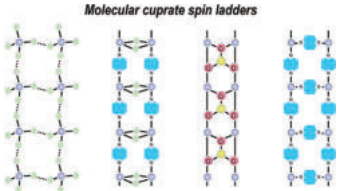
Chemistry Letters

Highlight Review | Free Access

Keywords: cuprate | magnetic property | spin ladder

Design and magnetic properties of molecular cuprate spin ladders

Jun Manabe and Sadafumi Nishihara*
Chem. Lett. 2025, 54, No. 2, upaf027 doi:10.1093/chemle/upaf027

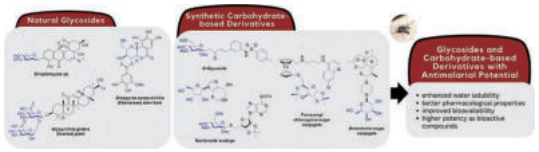


Highlight Review | Free Access

Keywords: antimalarial | carbohydrate | glycosylation

Bioactive glycosides: insights into antimalarial advances

Siti Nur Hidayah Jamil, Emil Salim, Natsuhisa Oka, Su Datt Lam, Shevin Rizal Feroz, Amatul Hamizah Ali, and Jalifah Latip*
Chem. Lett. 2025, 54, No. 2, upaf015 doi:10.1093/chemle/upaf015



Keywords: 2,7-diazapyrene | organic chromophores | photoredox catalyst

Photochemical properties and reactivities of 2,7-diazapyrene boron complexes

Yoshihiko Mizukami, Kakeru Arai, Ryoma Nishiguchi, Norihiro Aiga, Satoshi Takeuchi, Osamu Iwanaga, and Yoshihiro Miyake*
Chem. Lett. 2025, 54, No. 2, upaf010 doi:10.1093/chemle/upaf010

Keywords: computation | electronic spectroscopy | H/D isotope effect

Applicability of multicomponent quantum mechanical calculations for H/D isotope effects in electronic absorption spectra

Mana Inoue, Takayoshi Ishimoto, David S Rivera Rocabado, Taro Udagawa,* Masanori Tachikawa, Masaaki Baba, and Yusuke Kanematsu*
Chem. Lett. 2025, 54, No. 2, upaf031 doi:10.1093/chemle/upaf031

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Keywords: FMO | interaction analysis | mosquito repellent

FMO-based interaction analysis on DEET/icaridin—AgamOBP1 complex

Kazuki Akisawa, Yurina Sakuma, Akiko Tsukamoto, Hideo Doi, Koji Okuwaki, Yoshinori Hirano, Eiji Yamamoto, Kenji Yasuoka, and Yuji Mochizuki*
Chem. Lett. 2025, 54, No. 2, upaf030 doi:10.1093/chemle/upaf030

Keywords: clusteroluminescence | degradation | Nafion

Evaluation of Nafion degradation process using clusteroluminescence

Hinari Sakai, Shih Han Li, Shunsuke Morii, Nagi Akiyama, Mayu Mine, Yakumo Kinoshita, Noboru Ohta, Hiroshi Sekiguchi, Kazutaka Kamitani, Shigenori Fujikawa, Syuji Fujii, Yoshinobu Nakamura, Ming-Chia Li,* and Tomoyasu Hirai*
Chem. Lett. 2025, 54, No. 2, upaf026 doi:10.1093/chemle/upaf026

Keywords: cerium oxide nanoparticles | microreactor | particle shape

Flow synthesis of CeO_2 nanoparticles by forced thin-film type reactor with addition of $Al(NO_3)_3$

Mai Yoshizumi,* Kaeko Araki, Masakazu Enomura, Hidenobu Murata, Akihiko Suda, and Atsushi Nakahira
Chem. Lett. 2025, 54, No. 2, upaf024 doi:10.1093/chemle/upaf024

Open Access

Keywords: chlorophyll | chlorosomal *J*-aggregate | fluorine atom

J-aggregation of chlorophyll-*a* derivatives inserting fluorinated phenylene linker

Yuma Hisahara, Takeo Nakano,* and Hitoshi Tamiaki*
Chem. Lett. 2025, 54, No. 2, upaf023 doi:10.1093/chemle/upaf023

Keywords: 2,2′-bithiophene | flexible electrochromic devices | ionic liquid

A simple method for preparation of poly(2,2′-bithiophene) flexible electrochromic devices in ionic liquids

Yudi Cao, Qingshan Chen, Lei Wang,* Mingqing Yang, Shiyu Zhang, Chunhui Niu, and Yong Lv*
Chem. Lett. 2025, 54, No. 2, upaf021 doi:10.1093/chemle/upaf021

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Keywords: chirality | steric effect | supramolecule

Enantiomeric self-aggregation of zinc 13^2-methyl-bacteriochlorophyll-*d* analogs with a porphyrin π-skeleton

Yamato Hashimoto and Hitoshi Tamiaki*
Chem. Lett. 2025, 54, No. 2, upaf019 doi:10.1093/chemle/upaf019

Keywords: 2-Oxazolidinones | carboxylative cyclization | CO_2

Carboxylative cyclization of propargylamines with carbamate salts as a non-gaseous CO_2 source via dual-activation by Ag salts

Akira Fujii,* Ryuki Baba, Asami Yoshii, Yasuhiro Nishiyama, and Hajime Mori
Chem. Lett. 2025, 54, No. 2, upaf007 doi:10.1093/chemle/upaf007

Keywords: AuPd catalyst | glucosaminic acid | liquid-flow reactor

Aerobic oxidation of glucosamine-HCl over AuPd-supported catalyst in a liquid-flow system

Rin Sotani and Shun Nishimura*
Chem. Lett. 2025, 54, No. 2, upaf017 doi:10.1093/chemle/upaf017

Keywords: aggregation-induced emission | synthesis | thermally activated delayed fluorescence

Synthesis and optical properties of *m*-phenyl carbazole derivatives showing aggregation-induced emission and thermally activated delayed fluorescence

Yuta Nakagawa,* Kensyo Miki, and Yoshihiro Yamaguchi
Chem. Lett. 2025, 54, No. 2, upaf016 doi:10.1093/chemle/upaf016

Keywords: living polymerization | polyacetylenes | termination

Synthesis of amide-terminated *cis*-stereoregular polyacetylenes

Nina Adriani, Kensuke Echizen, Tatsuya Nishimura, Katsuhiro Maeda,* and Tsuyoshi Taniguchi*
Chem. Lett. 2025, 54, No. 2, upaf020 doi:10.1093/chemle/upaf020

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Keywords: colorimetric analysis | feature selection | pH test strip

Machine learning-based pH quantification from test strip images using multiple color spaces

Yuto Nakamura and Masahiro Nagao*
Chem. Lett. 2025, 54, No. 2, upaf018 doi:10.1093/chemle/upaf018

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Keywords: citronellal | Cu/SiO_2 catalyst | hydrogenation

Vapor-phase hydrogenation of citronellal over silica-supported copper prepared *via* organic additive-assisted impregnation protocol

Kenta Matsusaka, Enggah Kurniawan, Takashi Kojima, Yasuhiro Yamada, and Satoshi Sato*
Chem. Lett. 2025, 54, No. 2, upaf009 doi:10.1093/chemle/upaf009

Keywords: epitaxy | europium monoxide | pulsed laser deposition

Thin film epitaxy of high quality ferromagnetic semiconductor EuO using pulsed laser deposition equipped with Nd:YAG laser

Ramchandra Sahoo, Yusuke Sato, Satoshi Sasaki, Masamichi Negishi, Ryota Takahashi, and Tomoteru Fukumura*
Chem. Lett. 2025, 54, No. 2, upaf005 doi:10.1093/chemle/upaf005

Keywords: cellulose nanofiber | electric conductivity | molar conductivity

Transport numbers of polyion and counterion for aqueous dispersions of TEMPO-oxidized cellulose nanofibers

Rentaro Kanamori, Kaito Watanabe, Yoshifumi Yamagata, Keisuke Miyamoto, Mika Kawai, and Tetsu Mitsumata*
Chem. Lett. 2025, 54, No. 2, upaf003 doi:10.1093/chemle/upaf003

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Keywords: aggregation-induced emission | α-substitution | dibenzoylmethanatoboron difluoride

Aggregation behavior of α-substituted dibenzoylmethanatoboron difluoride complex with various alkyl groups in water/acetone mixtures

Keita Makabe, Haruto Koide, Kotaro Moriya, Naoto Miyasaka, Kazumitsu Minemura, Kazunori Ichihara, Yushi Fujimoto, Daichi Kitagawa, Seiya Kobatake, and Fuyuki Ito*
Chem. Lett. 2025, 54, No. 2, upaf008 doi:10.1093/chemle/upaf008

Keywords: donor–acceptor molecules | supramolecular gels | stimulus-responsive materials

Acid vapor–responsive supramolecular gels of hydrogen-bonding D–A type fluorenones

Mao Suzuki, Syota Yamada, Kensho Iwai, Ken'ichi Aoki, and Atsushi Seki*
Chem. Lett. 2025, 54, No. 2, upaf004 doi:10.1093/chemle/upaf004

Keywords: Mg-ion batteries | noncorrosive electrolyte negative electrodes | rutile TiO_2

Reversible Mg^{2+} insertion/deinsertion of rutile TiO_2 in noncorrosive electrolytes

Keito Yamamoto, Nguyen Thi Thanh Truc, and Masahiro Shimizu*
Chem. Lett. 2025, 54, No. 2, upaf014 doi:10.1093/chemle/upaf014

Keywords: DFT | glucose oxidation | single-atom catalysts

Investigation of glucose oxidation mechanism on the graphene nanosheet decorated by Pt, Au, and Cu metals: a DFT study

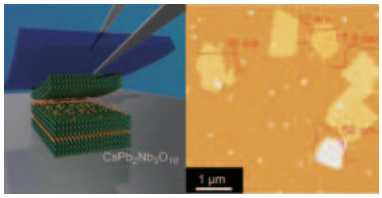
Yingying Wang* and Hongxia Li
Chem. Lett. 2025, 54, No. 2, upaf011 doi:10.1093/chemle/upaf011

Editor's Choice Free Access

Keywords: 2D nanosheets | ferroelectric | mechanical exfoliation

Mechanical exfoliation of non-van der Waals solids: a study of layered perovskite ferroelectric $CsPb_2Nb_3O_{10}$

Masanari Shimada, Yan Li, Makoto Kobayashi, Eisuke Yamamoto, Ruben Canton-Vitoria, and Minoru Osada*
Chem. Lett. 2025, 54, No. 2, upaf006 doi:10.1093/chemle/upaf006



Keywords: DNA methylation | great therapeutic efficacy | pH-sensitive liposome

pH-sensitive liposomal curcumin with good biocompatibility for improving therapeutic efficacy by decreasing DNA methylation level in tumor cells

Wanxue Wang, Mingzheng Shao, Changkai Gong, Chengpeng Li, Di Yang, Bingqian Liu, Yanqiong Liu, Haiou Ma, Zhenchao Wang, and Danping Chen*
Chem. Lett. 2025, 54, No. 2, upae243 doi:10.1093/chemle/upae243

Keywords: cyclopolymerization | helical polymer | polyisocyanide

Eight-membered-ring-forming chain-growth cyclopolymerization of 2,2′-diisocyano-1,1′-binaphthalenes for the synthesis of helical poly([1,4]diazocine-2,3-diyl)s

Yukako Yoshinaga,* Ryo Nishimaru, and Michinori Suginome*
Chem. Lett. 2025, 54, No. 2, upaf002 doi:10.1093/chemle/upaf002

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Keywords: aggregation | liposome | non-crosslinking

Micrometer-sized liposomes self-aggregate by forming DNA duplexes on their surfaces more sensitively than metallic nanoparticles

Atsushi Ogawa,* Ichiro Enomoto, and Hajime Takahashi
Chem. Lett. 2025, 54, No. 2, upaf012 doi:10.1093/chemle/upaf012