

Publication List - Recent representative papers -
As of September 17, 2024

2024

“Electronic and Thermal Transport Properties of Nanostructured Materials Sintered from Chemically Synthesized Tin Sulfide Nanoparticles and Effects of Ag and Se Doping”

Keiji Kobayashi, Mari Takahashi, Simon Moore, Masanobu Miyata, Philipp Sauerschnig, Jun Uzuhashi, Michihiro Ohta, Tadakatsu Ohkubo, Shinya Maenosono

ACS Appl. Energy Mater. 7, 4484-4493 (2024).

DOI: [10.1021/acsaem.4c00487](https://doi.org/10.1021/acsaem.4c00487)

“High Passivation Performance of Cat-CVD i-a-Si:H Derived from Bayesian Optimization with Practical Constraints”

Ryota Ohashi, Kentaro Kutsukake, Huynh Thi Cam Tu, Koichi Higashimine, Keisuke Ohdaira

ACS Appl. Mater. Interfaces 16, 9428-9435 (8 pages) (2024).

DOI: [10.1021/acsaem.4c00487](https://doi.org/10.1021/acsaem.4c00487)

"End-to-End High-Throughput Approach for Data-Driven Internal Donor Development in Heterogeneous Ziegler-Natta Propylene Polymerization"

Toshiaki Taniike, Felicia Daniela Cannavacciuolo, Mostafa Khoshsefat, Diego De Canditiis, Giuseppe Antinucci, Patchanee Chammingkwan, Roberta Cipullo, Vincenzo Busico

ACS Catal. 14, 7589–7599 (2024).

DOI: [10.1021/acscatal.4c01601](https://doi.org/10.1021/acscatal.4c01601)

“Helix-sence-selective permeation of racemic helical oligoacetylenes though one-handed helical channels in polymer membranes”

Shuaishuai Huang, Ken-ichi Shinohara, Masahiro Teraguchi, Takashi Kaneko, Toshiki Aoki

ACS Macro. Lett. 13, 627–631 (2024).

DOI: [10.1021/acsmacrolett.4c00169](https://doi.org/10.1021/acsmacrolett.4c00169)

“Study of MoS₂ as an Electric Field Sensor and the Role of Layer Thickness on the Sensitivity”

Mohammad Razzakul Islam, Jiali Hu, Afsal Kareekunanan, Akihiro Kuki, Takeshi Kudo, Takeshi Maruyama, Atsushi Nishizaki, Yuki Tokita, Masashi Akabori, Hiroshi Mizuta

ACS Omega 9, 29751-29755 (2024).

DOI: [10.1021/acsomega.4c03350](https://doi.org/10.1021/acsomega.4c03350)

“Light-Activatable Liquid Metal Immunostimulants for Cancer Nanotheranostics”

Yun Qi, Mikako Miyahara, Seigo Iwata, Eijiro Miyako

Adv. Funct. Mater. 34, 2305886 (13 pages) (2024).

DOI: [10.1002/adfm.202305886](https://doi.org/10.1002/adfm.202305886)

“UltraFast PhotoInduced double duplex DNA invasion into a 400-mer dsDNA target”

Siddhant Sethi, Hailili Zumila, Yasuha Watanabe, Junling Mo, Kenzo Fujimoto

Bioorg. Med. Chem. Lett. 98, 129597-129597 (2024).

DOI: [10.1016/j.bmcl.2023.129597](https://doi.org/10.1016/j.bmcl.2023.129597)

“State change of Na clusters in hard carbon electrodes and increased capacity for Na-ion batteries achieved by heteroatom doping”

Hideka Ando, Kenjiro Hashi, Shinobu Ohki, Yoshikiyo Hatakeyama, Yuta Nishina, Norihiro Kowata, Takahiro Ohkubo, Kazuma Gotoh

Carbon Trends 16, 100387 (9 pages) (2024).

DOI: [10.1016/j.cartre.2024.100387](https://doi.org/10.1016/j.cartre.2024.100387)

“Molecular mechanism of protein aggregation inhibition with sulfobetaine polymers and their hydrophobic derivatives”

Robin Rajan, Tadaomi Furuta, Dandan Zhao, Kazuaki Matsumura

Cell Rep. Phys. Sci. 5, 102012 (26 pages) (2024).

DOI: [10.1016/j.xcrp.2024.102012](https://doi.org/10.1016/j.xcrp.2024.102012)

“Precise design of copolymer-conjugated nanocatalysts for active electron transfer”

Reina Hagiwara, Shun Nishimura, Kosuke Okeyoshi

Chem. Commun. 60, 280-283 (2024).

DOI: [10.1039/D3CC05242G](https://doi.org/10.1039/D3CC05242G)

"Automatic feature engineering for catalyst design using small data without prior knowledge of target catalysis"

Toshiaki Taniike, Aya Fujiwara, Sunao Nakanowatari, Fernando García-Escobar, Keisuke Takahashi

Commun. Chem. 7, 11 (8 pages) (2024).

DOI: [10.1038/s42004-023-01086-y](https://doi.org/10.1038/s42004-023-01086-y)

"High-throughput experimentation for photocatalytic water purification in practical environments"

Kyo Yanagiyama, Ken Takimoto, Son Dinh Le, Nhan Nu Thanh Ton, Toshiaki Taniike

Environ. Pollut. 342, 122974 (8 pages) (2024).

DOI: [10.1016/j.envpol.2023.122974](https://doi.org/10.1016/j.envpol.2023.122974)

"Influence of Humidity on Layer-by-Layer Growth and Structure in Coordination Networks"

Kentaro Aoki, Toshitaka Matsuzawa, Kota Suetsugu, Mitsuo Hara, Shusaku Nagano, Yuki Nagao

Inorg. Chem. 63, 6674-6682 (2024).

DOI: [10.1021/acs.inorgchem.3c04526](https://doi.org/10.1021/acs.inorgchem.3c04526)

"Three-Dimensional Temperature Distribution Mapping by Generative Adversarial Network in Low Light Environment Using Thermography"

Shohei Oka, Yonghoon Ji, Hiromitsu Fujii, Hitoshi Kono,

16th International Conference on Quality Control by Artificial Vision (QCAV) Albi, France, (2024).

DOI: [10.1117/12.3000051](https://doi.org/10.1117/12.3000051)

"Dual-Type Discriminator Adversarial Reservoir Computing for Robust Autonomous Navigation in a Snowy Environment"

Fangzheng Li, Yonghoon Ji

2024 21th International Conference on Ubiquitous Robots (UR) (2024).

DOI: [10.1109/UR61395.2024.10597473](https://doi.org/10.1109/UR61395.2024.10597473)

"Electromagnetic enhancement spectra of one-dimensional plasmonic hotspots along silver nanowire dimer derived via surface-enhanced fluorescence"

Tamitake Itoh, Yuko S. Yamamoto

J. Chem. Phys. 160, 024703 (15 pages) (2024)

DOI: [10.1063/5.0179985](https://doi.org/10.1063/5.0179985)

"Low-temperature grown MnAs/InAs/MnAs double heterostructure on GaAs (111)B by molecular beam epitaxy"

Md Tauhidul Islam, Md Faysal Kabir, Masashi Akabori

Jpn. J. Appl. Phys. 63, 01SP40 (5 pages) (2024).

DOI: [10.35848/1347-4065/ad01c5](https://doi.org/10.35848/1347-4065/ad01c5)

“Impact of CeO_x layer insertion on ferroelectric properties of Hf-Zr-O films prepared by chemical solution deposition”

Mizuki Saito, Mohit, Ko-ichi Higashimine, Eisuke Tokumitsu

Jpn. J. Appl. Phys. 63, 01SP23 (6 pages) (2024).

DOI: [10.35848/1347-4065/acfdb2](https://doi.org/10.35848/1347-4065/acfdb2)

“Study on residual OH content in low-temperature Si oxide films after in-situ post-deposition-heating (PDH)”

Susumu Horita, Di Pu

Jpn. J. Appl. Phys. 63, 01SP12 (9 pages) (2024).

DOI: [10.35848/1347-4065/acf477](https://doi.org/10.35848/1347-4065/acf477)

“AlGa_N/Ga_N devices with metal-semiconductor or insulator-semiconductor interfacial layers: Vacuum level step due to dipole and interface fixed charge”

Yuchen Deng, Jiensi Gelan, Kazuya Uryu, Toshi-kazu Suzuki

J. Appl. Phys 135, 084504 (11 pages) (2024).

DOI: [10.1063/5.0186457](https://doi.org/10.1063/5.0186457)

“Water-soluble densely functionalized poly(hydroxycarbonylmethylene) binder for higher-performance hard carbon anode-based sodium-ion batteries”

Amarshi Patra, Noriyoshi Matsumi

J. Mater. Chem. A 12, 11857-11866 (2024).

DOI: [10.1039/D4TA00285G](https://doi.org/10.1039/D4TA00285G)

“Classification of La³⁺ and Gd³⁺ Rare-Earth Ions Using Surface-Enhanced Raman Scattering”

Hao Jin, Tamitake Itoh, Yuko S. Yamamoto

J. Phys. Chem. C 128, 5611-5620 (2024).

DOI: [10.1021/acs.jpcc.3c05225](https://doi.org/10.1021/acs.jpcc.3c05225)

“Reconstruction of Chitosan Network Orders Using the Meniscus Splitting Method for Designing pH-Responsive Materials”

Thi Kim Loc Nguyen, Yoshiya Tonomura, Nobuaki Ito, Ayaka Yamaji, Go Matsuba, Mitsuo Hara, Yuka Ikemoto, Kosuke Okeyoshi

Langmuir 40, 11927-11935 (2024).

DOI: [10.1021/acs.langmuir.4c00273](https://doi.org/10.1021/acs.langmuir.4c00273)

"Shear-Induced Nonequilibrium Patterns in Lipid Bilayer Membranes Exhibiting Phase Separation"

Tsutomu Hamada, Shino Mizuno and Hiroyuki Kitahata

Langmuir 40, 8843–8850 (2024).

DOI: [10.1021/acs.langmuir.3c03970](https://doi.org/10.1021/acs.langmuir.3c03970)

"Synthesis and Direct Observation of Chiral Supramolecular Polymer of Porphirin having Cholesteryl Groups"

Ryoga Hori, Osamu Notoya, Koichi Higashimine, Ken-ichi Shinohara

Langmuir 40, 5535-5544 (2024).

DOI: [10.1021/acs.langmuir.4c00164](https://doi.org/10.1021/acs.langmuir.4c00164)

"Room Temperature Thermal Rectification in Suspended Asymmetric Graphene Ribbon"

Mohammad Razzakul Islam, Liu Yongzheng, Afsal Kareekunnan, Hiroshi Mizuta

Nanotechnology 35, 365401 (7 pages) (2024).

DOI: [10.1088/1361-6528/ad555d](https://doi.org/10.1088/1361-6528/ad555d)

"Cooperative dynamic polaronic picture of diamond color centers"

Takuto Ichikawa, Junjie Guo, Paul Fons, Dwi Prananto, Toshu An, Muneaki Hase

Nat. Commun. 15, 7174 (8 pages) (2024).

DOI: [10.1038/s41467-024-51366-x](https://doi.org/10.1038/s41467-024-51366-x)

"Fluorescent antenna based on Förster resonance energy transfer (FRET) for optical wireless communications"

Cuiwei He, Steve Collins, Hideyuki Murata

Opt. Express 32, 17152 (13 pages) (2024).

DOI: [10.1364/OE.523128](https://doi.org/10.1364/OE.523128)

"Incremental Analysis of Magnetic Domains in Multiple Types of Ferromagnetic CoFe Nanolayer Patterns"

Shinjiro Hara, Wei Dai, Ryoma Horiguchi, Wataru Kanetsuka, Masashi Akabori

Phys. Status Solidi B 261, 2300529 (7 pages) (2024).

DOI: [10.1002/pssb.202300529](https://doi.org/10.1002/pssb.202300529)

2023

“Optogenetic Calcium Ion Influx in Myoblasts and Myotubes by Near-Infrared Light Using Upconversion Nanoparticles”

Daisuke Maemura, The Son Le, Mari. Takahashi, Kazuaki Matsumura, Shinya Maenosono

ACS Appl. Mater. Interfaces 15, 42196-42208 (2023).

DOI: [10.1021/acsami.3c07028](https://doi.org/10.1021/acsami.3c07028)

“Extreme Fast Charging Capability in Graphite Anode via a Lithium Borate Type Biobased Polymer as Aqueous Polyelectrolyte Binder”

Anusha Pradhan, Rajashekar Badam, Ryoya Miyairi, Noriyuki Takamori, Noriyoshi Matsumi

ACS Mater. Lett. 5, 413-420 (2023).

DOI: [10.1021/acsmaterialslett.2c00999](https://doi.org/10.1021/acsmaterialslett.2c00999)

“Lyotropic Liquid Crystalline Property and Organized Structure in High Proton-Conductive Sulfonated Semialicyclic Oligoimide Thin Films”

Yuze Yao, Hayato Watanabe, Mitsuo Hara, Shusaku Nagano, Yuki Nagao

ACS Omega 8, 7470-7478 (2023).

DOI: [10.1021/acsomega.2c06398](https://doi.org/10.1021/acsomega.2c06398)

“Macroscale Collagen-Actomyosin Hybrid Actuator Built from Bioderived Materials”

Koki Yoshida, Kenjiro Kohno, Yuichi Hiratsuka, Hiroaki Onoe

Adv. Funct. Mater. 33, 2307766 (9 pages) (2023).

DOI: [10.1002/adfm.202307766](https://doi.org/10.1002/adfm.202307766)

“Polyampholyte-Based Polymer Hydrogels for the Long-Term Storage, Protection and Delivery of Therapeutic Proteins”

Robin Rajan, Nishant Kumar, Dandan Zhao, Xianda Dai, Keiko Kawamoto, Kazuaki Matsumura

Adv. Healthcare Mater. 12, 2203253 (10 pages) (2023).

DOI: [10.1002/adhm.202203253](https://doi.org/10.1002/adhm.202203253)

“Recognition of Spatial Finiteness in Meniscus Splitting Based on Evaporative Interface Fluctuations”

Leijie Wu, Isamu Saito, Kenta Hongo, Kosuke Okeyoshi

Adv. Mater. Interfaces 10, 2300510 (8 pages) (2023).

DOI: [10.1002/admi.202300510](https://doi.org/10.1002/admi.202300510)

“Facile Fabrication of Oxygen-Enriched MXene-Based Sensor and Their Ammonia Gas-Sensing Enhancement”

Linh Chi T. Cao, Meng-Huan Zhou, Pakorn Opaprakasit, Paiboon Sreearunothai, Yuki Nagao, Sakoolkan Boonruang, Hoorieh Fallah, Shih-Feng Tseng, Shu-Han Hsu

Adv. Mater. Interfaces. 10, 200166 (13 pages) (2023).

DOI: [10.1002/admi.202300166](https://doi.org/10.1002/admi.202300166)

“Photochromism and Long Persistent Luminescence in Pr³⁺-Doped Garnet Transparent Ceramic via UV or Blue Light Up-Conversion Charging”

Qiping Du, Jumpei Ueda, Ruilin Zheng, Setsuhisa Tanabe

Adv. Opt. Mater. 11, 2202612 (12 pages) (2023).

DOI: [10.1002/adom.202202612](https://doi.org/10.1002/adom.202202612)

“Berry curvature induced valley Hall effect in non-encapsulated hBN/Bilayer graphene heterostructure aligned with near-zero twist angle”

Tepei Shintaku, Afsal Kareekunnan, Masashi Akabori, Kenji Watanabe, Takashi Taniguchi, Hiroshi Mizuta

Adv. Phys. Research 3, 2300064 (6 pages) (2023).

DOI: [10.1002/apxr.202300064](https://doi.org/10.1002/apxr.202300064)

“Stiffer Bonding of Armchair Edge in Single-Layer Molybdenum Disulfide Nanoribbons”

Chunmeng Liu, Kenta Hongo, Ryo Maezono, Jiaqi Zhang, Yoshifumi Oshima

Adv. Sci. 10, 2303477 (9 pages) (2023).

DOI: [10.1002/advs.202303477](https://doi.org/10.1002/advs.202303477)

“Discovery of Intratumoral Oncolytic Bacteria Toward Targeted Anticancer Theranostics”

Yamato Goto, Seigo Iwata, Mikako Miyahara, Eijiro Miyako

Adv. Sci. 10, 2301679 (14 pages) (2023).

DOI: [10.1002/advs.202301679](https://doi.org/10.1002/advs.202301679)

“NMR Analyses of Carbohydrate-Water and Water-Water Interactions in Water/DMSO Mixed Solvents, Highlighting Various Hydration Behaviors of Monosaccharides Glucose, Galactose and Mannose”

Hiroaki Tatsuoka, Takumi Yamaguchi

Bull. Chem. Soc. Jpn. 96, 168-174 (2023).

DOI: [10.1246/bcsj.20220290](https://doi.org/10.1246/bcsj.20220290)

“Dynamic nuclear polarization – nuclear magnetic resonance for analyzing surface functional groups on carbonaceous materials”

Hideka Ando, Katsuaki Suzuki, Hironori Kaji, Takashi Kambe, Yuta Nishina, Chiyu Nakano, Kazuma Gotoh

Carbon 206, 84-93 (2023).

DOI: [10.1016/j.carbon.2023.02.010](https://doi.org/10.1016/j.carbon.2023.02.010)

“Enhancement of cryopreservation with intracellularly permeable zwitterionic polymers”

Ryota Yamasaki, Robin Rajan, Kazuaki Matsumura

Chem. Commun. 59, 14001-14004 (2023).

DOI: [10.1039/D3CC04092E](https://doi.org/10.1039/D3CC04092E)

“Toward a New Era of SERS and TERS at the Nanometer Scale: From Fundamentals to Innovative Applications”

Tamitake Itoh, Marek Procházka, Zhen-Chao Dong, Wei Ji, Yuko S. Yamamoto, Yao Zhang, Yukihiro Ozaki

Chem. Rev. 123, 1552-634 (2023).

DOI: [10.1021/acs.chemrev.2c00316](https://doi.org/10.1021/acs.chemrev.2c00316)

“Viscoelastic properties of copolycarbonates comprising isosorbide and 1,4-cyclohexanedimethanol”

Ruiqi Han, Takumitsu Kida, Masayuki Yamaguchi

Colloid Polym. Sci. 301, 1231-1238 (2023).

DOI: [10.1007/s00396-023-05143-9](https://doi.org/10.1007/s00396-023-05143-9)

“Anharmonic and glass-like phonon transport in the Tetrahedrite-manner $\text{Ag}_6\text{Si}_6\text{Sn}_4\text{P}_{12}$ ”

Masanobu Miyata, Mikio Koyano

Comput. Mater. Sci. 227, 112258 (9 pages) (2023).

DOI: [10.1016/j.commatsci.2023.112258](https://doi.org/10.1016/j.commatsci.2023.112258)

“Acceleration of the Deamination of Cytosine through Photo-Crosslinking”

Siddhant Sethi, Yasuharu Takashima, Shigetaka Nakamura, Licheng Wan, Nozomi Honda, Kenzo

Fujimoto

Curr. Issues. Mol. Biol. 45, 4687-4700 (2023).

DOI: [10.3390/cimb45060298](https://doi.org/10.3390/cimb45060298)

“Demonstration of electromagnetic enhancement correlated to optical absorption of single plasmonic system coupled with molecular excitons using ultrafast surface-enhanced fluorescence”

Tamitake Itoh, Yuko S. Yamamoto

J. Chem. Phys. 159, 034709 (11 pages) (2023)

DOI: [10.1063/5.0156641](https://doi.org/10.1063/5.0156641)

“Correlated polarization dependences between surface-enhanced resonant Raman scattering and plasmon resonance elastic scattering showing spectral uncorrelation to each other”

Tamitake Itoh, Yuko S. Yamamoto

J. Phys. Chem. B 127, 4666-4675 (2023)

DOI: [10.1021/acs.jpcc.3c01878](https://doi.org/10.1021/acs.jpcc.3c01878)

“Characterization of local nonequilibrium phonons in bulk MoS₂ probed by temperature-dependent Raman scattering”

Ruian Liu, Masanobu Miyata, Mikio Koyano,

Jpn. J. Appl. Phys. 62, 062001 (5 pages) (2023).

DOI: [10.35848/1347-4065/acd497](https://doi.org/10.35848/1347-4065/acd497)

“Potential-induced degradation of encapsulant-less p-type crystalline Si photovoltaic modules”

Shuntaro Shimpō, Huynh Thi Cam Tu, Keisuke Ohdaira

Jpn. J. Appl. Phys. 62, SK1039 (4 pages) (2023).

DOI: [10.35848/1347-4065/acc9ce](https://doi.org/10.35848/1347-4065/acc9ce)

“Endocytosis-Like Vesicle Fission Mediated by a Membrane-Expanding Molecular Machine Enables Virus Encapsulation for In Vivo Delivery”

Noriyuki Uchida, Yunosuke Ryu, Yuichiro Takagi, Ken Yoshizawa, Kotono Suzuki, Yasutaka Anraku, Itsuki Ajioka, Naofumi Shimokawa, Masahiro Takagi, Norihisa Hoshino, Tomoyuki Akutagawa, Teruhiko Matsubara, Toshinori Sato, Yuji Higuchi, Hiroaki Ito, Masamune Morita, Takahiro Muraoka

J. Am. Chem. Soc. 145, 6210-6220 (2023).

DOI: [10.1021/jacs.2c12348](https://doi.org/10.1021/jacs.2c12348)

“In Operando XAFS on Local Structure and Electronic State of Tungsten Oxide Nanoparticles with Different Crystal Structure under Electrochromism”

Mari Takahashi, Yuki Kitazaki, Hiromi Oshima, Masafumi Harada, Shinya Maenosono

J. Phys. Chem. C 127, 8175-8185 (2023).

DOI: [10.1021/acs.jpcc.3c01449](https://doi.org/10.1021/acs.jpcc.3c01449)

"Physical Concept to Explain the Regulation of Lipid Membrane Phase Separation under Isothermal Conditions"

Naofumi Shimokawa, Tsutomu Hamada

Life 13, 1105 (15pages) (2023).

DOI: [10.3390/life13051105](https://doi.org/10.3390/life13051105)

“Symmetry Engineering in Twisted Bilayer WTe₂”

Yijin Zhang, Keisuke Kamiya, Takato Yamamoto, Masato Sakano, Xiaohan Yang, Satoru Masubuchi, Shota Okazaki, Keisuke Shinokita, Tongmin Chen, Kohei Aso, Yukiko Yamada-Takamura, Yoshifumi Oshima, Kenji Watanabe, Takashi Taniguchi, Kazunari Matsuda, Takao Sasakawa, Kyoko Ishizaka, Tomoki Machida

Nano Lett. 23, 9280-9286 (7 pages) (2023).

DOI: [10.1021/acs.nanolett.3c02327](https://doi.org/10.1021/acs.nanolett.3c02327)

“Spin Dynamics of a Solid-State Qubit in Proximity to a Superconductor”

Richard Monge, Tom Delord, Nicholas V. Proscia, Zav Shotan, Harishankar Jayakumar, Jacob Henshaw, Pablo R. Zangara, Artur Lozovoi, Daniela Pagliero, Pablo D. Esquinazi, Toshu An, Inti Sodemann, Vinod M. Menon, Carlos A. Meriles

Nano Lett. 23, 422-428 (2023).

DOI: [10.1021/acs.nanolett.2c03250](https://doi.org/10.1021/acs.nanolett.2c03250)

“Cancer immunotheranostics using bioactive nanocoated photosynthetic bacterial complexes”

Sheethal Reghu, Seigo Iwata, Satoru Komatsu, Takafumi Nakajo, Eijiro Miyako

Nano Today 52, 101966 (10 pages) (2023).

DOI: [10.1016/j.nantod.2023.101966](https://doi.org/10.1016/j.nantod.2023.101966)

"The value of negative results in data-driven catalysis research"

Toshiaki Taniike, Keisuke Takahashi

Nat. Catal. 6, 108–111 (2023).

DOI: [10.1038/s41929-023-00920-9](https://doi.org/10.1038/s41929-023-00920-9)

“Symmetry-breaking host–guest assembly in a hydrogen-bonded supramolecular system”

Shinnosuke Horiuchi, Takumi Yamaguchi, Jacopo Tessarolo, Hirotaka Tanaka, Eri Sakuda, Yasuhiro Arikawa, Eric Meggers, Guido H. Clever, Keisuke Umakoshi

Nat. Commun. 14, 155 (9 pages) (2023).

DOI: [10.1038/s41467-023-35850-4](https://doi.org/10.1038/s41467-023-35850-4)

“Capillary-based fluorescent antenna for visible light communications”

Cuiwei He, Steve Collins, Hideyuki Murata

Opt. Express 31, 17716 (15 pages) (2023).

DOI: [10.1364/OE.489648](https://doi.org/10.1364/OE.489648)

“Atomically thin metallic Si and Ge allotropes with high Fermi velocities”

Chin-En Hsu, Yung-Ting Lee, Chieh-Chun Wang, Chang-Yu Lin, Yukiko Yamada-Takamura, Taisuke Ozaki, Chi-Cheng Lee

Phys. Rev. B. 107, 115410 (6 pages) (2023).

DOI: [10.1103/PhysRevB.107.115410](https://doi.org/10.1103/PhysRevB.107.115410)

“Modification of melt memory effect by addition of poly(butylene terephthalate) to thermoplastic polyester elastomer”

Takumi Yamada, Takumitsu Kida, Masayuki Yamaguchi

Polymer 285, 126330 (9 pages) (2023).

DOI: [10.1016/j.polymer.2023.126330](https://doi.org/10.1016/j.polymer.2023.126330)

“Mechanical properties of isotactic polypropylene with nodular or spherulite morphologies”

Yuta Fukuda, Takumitsu Kida, Masayuki Yamaguchi

Polym. Eng. Sci. 63, 4043-4050 (2023).

DOI: [10.1002/pen.26504](https://doi.org/10.1002/pen.26504)

“Role of Shear Flow on Structure Development during Post-Processing Annealing for Poly(lactic acid)”

Hoang-Giang Dai Vo, Takumitsu Kida, Masayuki Yamaguchi

Polymers 15, 693 (13 pages) (2023).

DOI: [10.3390/polym15030693](https://doi.org/10.3390/polym15030693)

“Optimum processing conditions for the maximum crystallization rate of poly(3-

hydroxybutyrate-co-3-hydroxyhexanoate)”

Khunanya Janchai, Takumitsu Kida, Masayuki Yamaguchi, Takenobu Sunagawa, Tetsuo Okura
Sci. Rep. 13, 497 (11 pages) (2023).

DOI: [10.1038/s41598-023-27595-3](https://doi.org/10.1038/s41598-023-27595-3)

“Low-frequency noise in AlTiO/AlGaIn/GaN metal-insulator-semiconductor field-effect transistors with non-gate-recessed or partially-gate-recessed structures”

Duong Dai Nguyen, Yuchen Deng, Toshi-kazu Suzuki
Semicond. Sci. Technol. 38, 095010 (5 pages) (2023).

DOI: [10.1088/1361-6641/acec64](https://doi.org/10.1088/1361-6641/acec64)

“Machine learning identification of atmospheric gases by mapping the graphene-molecule van der waals complex bonding evolution”

Osazuwa G. Agbonlahor, Manoharan Muruganathan, Amit Banerjee, Hiroshi Mizuta
Sens. Actuators. B 380, 133383 (10 pages) (2023).

DOI: [10.1016/j.snb.2023.133383](https://doi.org/10.1016/j.snb.2023.133383)

“Synthesis and Direct Observation of Macromolecule of Two-Dimensional Polymers: With High Molecular Weights, Large Areas, Small Micropores, Solubility, Membrane Forming Ability, and High Oxygen Permselectivity”

Kehan Cheng, Ken-ichi Shinohara, Osamu Notoya, Masahiro Teraguchi, Takashi Kaneko, and Toshiki Aoki
Small 20, 2308050 (2023).

DOI: [10.1002/smll.202308050](https://doi.org/10.1002/smll.202308050)

“Potential-induced degradation of n-type front-emitter crystalline silicon photovoltaic modules — Comparison between indoor and outdoor test results”

Keisuke Ohdaira, Minoru Akitomi, Yasuo Chiba, Atsushi Masuda
Sol. Energy Mater. Sol. Cells 249, 112038 (6 pages) (2023).

DOI: [10.1016/j.solmat.2022.112038](https://doi.org/10.1016/j.solmat.2022.112038)

“Hole Detrapping-Type Persistent Phosphors of RE₂O₂S (RE = La, Gd, Y, Lu) Doped with Eu³⁺–Pr³⁺ and Eu³⁺–Tb³⁺”

Atsunori Hashimoto, Jumpei Ueda, Yasushi Aoki, Pieter Dorenbos, Setsuhisa Tanabe
The J. Phys. Chem. C 127, 15611-15619 (2023).

DOI: [10.1021/acs.jpcc.3c03251](https://doi.org/10.1021/acs.jpcc.3c03251)

2022

“Heavy-Duty Performance from Silicon Anodes Using Poly(BIAN)/Poly(acrylic acid)-Based Self-Healing Composite Binder in Lithium-Ion Secondary Batteries”

Agman Gupta, Rajashekar Badam, Noriyoshi Matsumi

ACS Appl. Energy Mater. 5, 7977-7987 (2022).

DOI: [10.1021/acsaem.2c00278](https://doi.org/10.1021/acsaem.2c00278)

“Quick and Mild Isolation of Intact Lysosomes Using Magnetic-Plasmonic Hybrid Nanoparticles”

The Son Le, Mari Takahashi, Noriyoshi Iozumi, Akio Miyazato, Yuichi Hiratsuka, Kazuaki Matsumura, Tomohiko Taguchi, Shinya Maenosono

ACS Nano 16, 885-896 (2022).

DOI: [10.1021/acsnano.1c08474](https://doi.org/10.1021/acsnano.1c08474)

“Sub 0.5 Volt Graphene-hBN van der Waals Nanoelectromechanical Switches”

Manoharan Muruganathan, Ngoc Huynh Van, Marek E. Schmidt, Hiroshi Mizuta

Adv. Funct. Mater. 32, 2209151 (7 pages) (2022).

DOI: [10.1002/adfm.202209151](https://doi.org/10.1002/adfm.202209151)

“Fabrication and Characterizations of Axial View Liquid Electrode Plasma Atomic Emission Spectrometry for the Sensitive Determination of Trace Zinc, Cadmium, and Lead”

Yueh Han Huang, Daisuke Hirose, Jun Minami, Meng Jiy Wang, Yuzuru Takamura

Anal. Chem. 94, 8209-8216 (2022).

DOI: [10.1021/acs.analchem.2c00122](https://doi.org/10.1021/acs.analchem.2c00122)

“Automated Paper-Based Femtogram Sensing Device for Competitive Enzyme-Linked Immunosorbent Assay of Aflatoxin B₁ Using Submicroliter Samples”

Sumamal Charernchai, Miyuki Chikae, Tue Trong Phan, Wanida Wonsawat, Daisuke Hirose, Yuzuru Takamura

Anal. Chem. 94, 5099-5105 (2022).

DOI: [10.1021/acs.analchem.1c05401](https://doi.org/10.1021/acs.analchem.1c05401)

“Cell-Free Synthesis of Human Endothelin Receptors and Its Application to Ribosome Display”

Hiroki Nakai, Kinuka Isshiki, Masato Hattori, Hiromasa Maehira, Tatsumi Yamaguchi, Keiko Masuda, Yoshihiro Shimizu, Takayoshi Watanabe, Takahiro Hohsaka, Wataru Shihoya, Osamu Nureki, Yasuhiko Kato, Hajime Watanabe, and Tomoaki Matsuura

Anal. Chem. 94, 3831-3839 (2022).

DOI: [10.1021/acs.analchem.1c04714](https://doi.org/10.1021/acs.analchem.1c04714)

“Variable-area capacitors controlled by HfO₂-based ferroelectric-gate field-effect-transistors”

Takaaki Miyasako, Shingo Yoneda, Tadasu Hosokura, Masahiko Kimura, Eisuke Tokumitsu

Appl. Phys. Lett. 120, 262901 (6 pages) (2022).

DOI: [10.1063/5.0089049](https://doi.org/10.1063/5.0089049)

“Mechanism of low-temperature-annealed Ohmic contacts to AlGa_N/Ga_N heterostructures: A study via formation and removal of Ta-based Ohmic-metals”

Kazuya Uryu, Shota Kiuchi, Taku Sato, Toshi-kazu Suzuki

Appl. Phys. Lett. 120, 052104 (7 pages) (2022).

DOI: [10.1063/5.0080265](https://doi.org/10.1063/5.0080265)

“Chemical Synthesis and Cell-Free Expression of Thiazoline Ring-Bridged Cyclic Peptides and Their Properties on Biomembrane Permeability”

Takashi Tamura, Masaaki Inoue, Yuji Yoshimitsu, Ichihiko Hashimoto, Noriyuki Ohashi,

Kyosuke Tsumura, Koo Suzuki, Takayoshi Watanabe, Takahiro Hohsaka

Bull. Chem. Soc. Jpn. 95, 359-366 (2022).

DOI: [10.1246/bcsj.20210409](https://doi.org/10.1246/bcsj.20210409)

“Elucidating the degradation mechanism of a self-degradable dextran-based medical adhesive”

Woogi Hyon, Shuji Shibata, Etsuo Ozaki, Motoki Fujimura, Suong-Hyu Hyon, Kazuaki

Matsumura

Carbohydr. Polym. 278, 118949 (11 pages) (2022).

DOI: [10.1016/j.carbpol.2021.118949](https://doi.org/10.1016/j.carbpol.2021.118949)

“Synthesis of 5-Hydroxymethyl-2-furfurylamine via Reductive Amination of 5-Hydroxymethyl-2-furaldehyde with Supported Ni-Co Bimetallic Catalysts”

Xinyue Li, Shun Nishimura

Catal. Lett. 154, 237-244 (2022).

DOI: [10.1007/s10562-022-04223-9](https://doi.org/10.1007/s10562-022-04223-9)

“High-Throughput Screening and Literature Data Driven Machine Learning Assisting Investigation of Multi-component La₂O₃-based Catalysts for Oxidative Coupling of Methane”

Shun Nishimura, Son Dinh Le, Itsuki Miyazato, Jun Fujima, Toshiaki Taniike, Junya Ohyama,

Keisuke Takahashi

Catal. Sci. Technol. 12, 2766-2774 (2022).

DOI: [10.1039/D1CY02206G](https://doi.org/10.1039/D1CY02206G)

“Adaptively evolved human oral actinomyces-sourced defensins show therapeutic potential”

Shunyi Zhu, Bin Gao, Yoshitaka Umetsu, Steve Peigneur, Ping Li, Shinya Ohki, Jan Tytgat

EMBO Mol. Med. 14, e14499 (21 pages) (2022).

DOI: [10.15252/emmm.202114499](https://doi.org/10.15252/emmm.202114499)

“Experimental and computational characterization of dynamic biomolecular interaction systems involving glycolipid glycans”

Koichi Kato, Takumi Yamaguchi, Maho Yagi-Utsumi

Glycoconjugate J. 39, 219-228 (2022).

DOI: [10.1007/s10719-022-10056-w](https://doi.org/10.1007/s10719-022-10056-w)

“Autonomous Motion Control Using Deep Reinforcement Learning for Exploration Robot on Rough Terrain”

Zijie Wang, Yonghoon Ji, Hiromitsu Fujii, Hitoshi Kono

2022 IEEE/SICE International Symposium on System Integration (SII) (2022).

DOI: [10.1109/SII52469.2022.9708814](https://doi.org/10.1109/SII52469.2022.9708814)

“Cat-CVD SiNx as a gas barrier for application to perovskite solar cells”

Huynh Thi Cam Tu, Ai Shimazaki, Ryuji Kaneko, Atsushi Wakamiya, Keisuke Ohdaira

Jpn. J. Appl. Phys. 61, 121002 (8 pages) (2022).

DOI: [10.35848/1347-4065/ac993e](https://doi.org/10.35848/1347-4065/ac993e)

“Crystallization of catalytic CVD hydrogenated n-a-Si films on textured glass substrates by flash lamp annealing”

Zheng Wang, Huynh Thi Cam Tu, Keisuke Ohdaira

Jpn. J. Appl. Phys. 61, SB1019 (8 pages) (2022).

DOI: [10.35848/1347-4065/ac290e](https://doi.org/10.35848/1347-4065/ac290e)

“Photoinduced aggregation of liposome modified with DNA containing ultrafast DNA photo-cross-linker”

Kenzo Fujimoto, Masakatsu Ichikawa, Shigetaka Nakamura

J. Chem. Technol. Biotechnol. 97, 295-298 (2022).

DOI: [10.1002/jctb.6941](https://doi.org/10.1002/jctb.6941)

“Black glasses grafted micron silicon: a resilient anode material for high-performance lithium-ion batteries”

Ravi Nandan, Noriyuki Takamori, Koichi Higashimine, Rajashekar Badam, Noriyoshi Matsumi
J. Mater. Chem. A 10, 15960-15974 (2022).

DOI: [10.1039/D2TA03068C](https://doi.org/10.1039/D2TA03068C)

“Zinc blende inspired rational design of a beta-SiC based resilient anode material for lithium-ion batteries”

Ravi Nandan, Noriyuki Takamori, Koichi Higashimine, Rajashekar Badam, Noriyoshi Matsumi
J. Mater. Chem. A 10, 5230-5243 (2022).

DOI: [10.1039/D1TA08516F](https://doi.org/10.1039/D1TA08516F)

“Bone marrow-targetable green tea catechin-based micellar nanocomplex for synergistic therapy of acute myeloid leukemia”

K. H. Bae, F. Lai, J. Mong, A. Niibori-Nambu, K. H. Chan, Z. Her, M. Osato, M. Tan, Q. Chen, M. Kurisawa

J. Nanobiotechnology 20, 481 (18 pages) (2022).

DOI: [10.1186/s12951-022-01683-4](https://doi.org/10.1186/s12951-022-01683-4)

“Suppression of Amyloid- β Adsorption on Endoplasmic Reticulum Stress-Mimicking Membranes by α -Tocopherol and α -Tocotrienol”

Yusuke Nakatani, Naofumi Shimokawa, Yasuomi Urano, Noriko Noguchi, Masahiro Takagi

J. Phys. Chem. Lett. 13, 11955-11960 (2022).

DOI: [10.1021/acs.jpcclett.2c03098](https://doi.org/10.1021/acs.jpcclett.2c03098)

“Single-Molecule Unidirectional Processive Movement along a Helical Polymer in Non-aqueous Medium”

Ken-ichi Shinohara, Yuu Makida, Takashi Oohashi, Ryoga Hori

Langmuir 38, 12173–12178 (2022).

DOI: [10.1021/acs.langmuir.2c01704](https://doi.org/10.1021/acs.langmuir.2c01704)

“Artificial Palmitoylation of Proteins Controls the Lipid Domain-Selective Anchoring on Biomembranes and the Raft-Dependent Cellular Internalization”

Kazuki Uchida, Hiroki Obayashi, Kosuke Minamihata, Rie Wakabayashi, Masahiro Goto,

Naofumi Shimokawa, Masahiro Takagi, Noriho Kamiya

Langmuir 38, 9640-9648 (2022).

DOI: [10.1021/acs.langmuir.2c01205](https://doi.org/10.1021/acs.langmuir.2c01205)

“Transport properties of binary phosphide AgP₂ denoting high Hall mobility and low lattice thermal conductivity”

Masanobu Miyata, Mikio Koyano

Mater. Res. Express. 9, 055901 (13 pages) (2022).

DOI: [10.1088/2053-1591/ac6ccc](https://doi.org/10.1088/2053-1591/ac6ccc)

“Surface Effect on Young’s Modulus of Sub-Two-Nanometer Gold [111] Nanocontacts”

Jiaqi Zhang, Masahiko Tomitori, Toyoko Arai, Yoshifumi Oshima

Phys. Rev. Lett. 128,146101 (7 pages) (2022).

DOI: [10.1103/PhysRevLett.128.146101](https://doi.org/10.1103/PhysRevLett.128.146101)

"Tailoring Magnetic Domains and Magnetization Switching in CoFe Nanolayer Patterns with Their Thickness and Aspect Ratio on GaAs (001) Substrate"

Keigo Teramoto, Ryoma Horiguchi, Wei Dai, Yusuke Adachi, Masashi Akabori, Shinjiro Hara

Phys. Status Solidi B 259, 2100519 (9 pages) (2022).

DOI: [10.1002/pssb.202100519](https://doi.org/10.1002/pssb.202100519)

“In situ integrated microrobots driven by artificial muscles built from biomolecular motors”

Yingzhe Wang, Takahiro Nitta, Yuichi Hiratsuka, Keisuke Morishima

Sci. Rob. 7, eaba8212 (12 pages) (2022).

DOI: [10.1126/scirobotics.aba8212](https://doi.org/10.1126/scirobotics.aba8212)

"Domain dynamics of phase-separated lipid membranes under shear flow"

Tsutomu Hamada, Shino Mizuno and Hiroyuki Kitahata

Soft Matter 18, 9069-9075 (2022).

DOI: [10.1039/D2SM00825D](https://doi.org/10.1039/D2SM00825D)

“Structural and functional studies of LaIT₂, an antimicrobial and insecticidal peptide from *Liocheles australasiae*”

Maiki Tamura, Chiharu Tatsushiro, Eugene Hayato Morita, Shinya Ohki

Toxicon 214, 8-17 (2022).

DOI: [10.1016/j.toxicon.2022.04.015](https://doi.org/10.1016/j.toxicon.2022.04.015)

2021

“Adatom-induced dislocation annihilation in epitaxial silicene”

A. Fleurence, Y. Yamada-Takamura

2D Mater. 8, 045011 (17 pages) (2021).

DOI: [10.1088/2053-1583/ac15da](https://doi.org/10.1088/2053-1583/ac15da)

“Subpercent Local Strains Due to the Shapes of Gold Nanorods Revealed by Data-Driven Analysis”

Kohei Aso, Jens Maebe, Xuan Quy Tran, Tomokazu Yamamoto, Yoshifumi Oshima, Syo Matsumura

ACS Nano 15, 12077-12085 (9 pages) (2021).

DOI: [10.1021/acsnano.1c03413](https://doi.org/10.1021/acsnano.1c03413)

“Clarification of the ordering of intercalated Fe atoms in Fe_xTiS_2 and its effect on the magnetic properties”

Yi Ling Chiew, Masanobu Miyata, Mikio Koyano, Yoshifumi Oshima,

Acta Cryst. 77, 441(8 pages) (2021).

DOI: [10.1107/S205252062100456X](https://doi.org/10.1107/S205252062100456X)

“Boltzmann Thermometry in Cr^{3+} -Doped Ga_2O_3 Polymorphs: The Structure Matters!”

Michele Back, Jumpei Ueda, Hiroshi Nambu, Masami Fujita, Akira Yamamoto, Hisao Yoshida, Hiromitsu Tanaka, Mikhail G. Brik, Setsuhisa Tanabe

Adv. Opt. Mater. 9, 2100033 (2021).

DOI: [10.1002/adom.202100033](https://doi.org/10.1002/adom.202100033)

“CycleGAN-based realistic image dataset generation for forward-looking sonar”

Dingyu Liu, Yusheng Wang, Yonghoon Ji, Hiroshi Tsuchiya, Atsushi Yamashita, Hajime Asama

Adv. Robotics 35, 242-254 (2021).

DOI: [10.1080/01691864.2021.1873845](https://doi.org/10.1080/01691864.2021.1873845)

“MgO-Template Synthesis of Extremely High Capacity Hard Carbon for Na-Ion Battery”

Azusa Kamiyama, Kei Kubota, Daisuke Igarashi, Yong Youn, Yoshitaka Tateyama, Hideka Ando,

Kazuma Gotoh, Shinichi Komaba
Angew. Chem. Int. Ed. 60, 5114-5120 (2021).
DOI: [10.1002/anie.202013951](https://doi.org/10.1002/anie.202013951)

“Electrical characterization of AlGa_N/Ga_N heterostructures under Ohmic metals by using multi-probe Hall devices”

Kazuya Uryu, Shota Kiuchi, Toshi-kazu Suzuki
Appl. Phys. Lett. 119, 023505 (6 pages) (2021).
DOI: [10.1063/5.0054553](https://doi.org/10.1063/5.0054553)

“Local heat emission due to unidirectional spin-wave heat conveyer effect observed by lock-in thermography”

Yuta Kainuma, Ryo Iguchi, Dwi Prananto, Vitaliy I. Vasyuchka, Burkard Hillebrands, Toshu An, Ken-ichi Uchida
Appl. Phys. Lett. 118, 222404 (5 pages) (2021).
DOI: [10.1063/5.0049491](https://doi.org/10.1063/5.0049491)

“²³Na Solid-State NMR Analyses for Na-Ion Batteries and Materials”

Kazuma Gotoh
Batteries and Supercaps 4, 1267-1278 (2021).
DOI: [10.1002/batt.202000295](https://doi.org/10.1002/batt.202000295)

“Design of an Ice Recrystallization-Inhibiting Polyampholyte-Containing Graft Polymer for Inhibition of Protein Aggregation”

Robin Rajan, Nishant Kumar, Kazuaki Matsumura
Biomacromolecules 23, 487-496 (2021).
DOI: [10.1021/acs.biomac.1c01126](https://doi.org/10.1021/acs.biomac.1c01126)

“How to design and analyze persistent phosphors?”

Jumpei Ueda
Bull. Chem. Soc. Jpn. 94, 2807-2821 (2021).
DOI: [10.1246/bcsj.20210255](https://doi.org/10.1246/bcsj.20210255)

“Selective hydrogenation of succinic acid to gamma-butyrolactone with PVP-capped CuPd catal”

Son Dinh Le, Shun Nishimura

Catal. Sci. Technol. 12, 1060-1069 (2021).

DOI: [10.1039/D1CY01735G](https://doi.org/10.1039/D1CY01735G)

“OH⁻ Conductive Properties and Water Uptake of Anion Exchange Thin Films”

Fangfang Wang, Dongjin Wang, Yuki Nagao

ChemSusChem 14, 2694-2697 (2021).

DOI: [10.1002/cssc.202100711](https://doi.org/10.1002/cssc.202100711)

“High-Pressure Photoluminescence Properties of Cr³⁺-Doped LaGaO₃ Perovskites Modulated by Pressure-Induced Phase Transition”

Hansen Hua, Jumpei Ueda, Jian Xu, Michele Back, Setsuhisa Tanabe

Inorg. Chem. 60, 19253-19262 (2021).

DOI: [10.1021/acs.inorgchem.1c03074](https://doi.org/10.1021/acs.inorgchem.1c03074)

“Impact of reduced pressure crystallization on ferroelectric properties in hafnium-zirconium dioxide films deposited by sputtering”

Yuki Hara, Mohit, Tatsuya Murakami, Shinji Migita, Hiroyuki Ota, Yukinori Morita, Eisuke Tokumitsu

Jpn. J. Appl. Phys. 60, SFFB05 (7 pages) (2021).

DOI: [10.35848/1347-4065/ac1250](https://doi.org/10.35848/1347-4065/ac1250)

“Indium oxide and indium-tin-oxide channel ferroelectric gate thin film transistors with yttrium doped hafnium-zirconium dioxide gate insulator prepared by chemical solution process”

Mohit, Takaaki Miyasako, Eisuke Tokumitsu

Jpn. J. Appl. Phys. 60, SBBM02 (10 pages) (2021).

DOI: [10.35848/1347-4065/abd6da](https://doi.org/10.35848/1347-4065/abd6da)

“Scanning diamond NV center magnetometer probe fabricated by laser cutting and focused ion beam milling”

Yuta Kainuma, Kunitaka Hayashi, Chiyaka Tachioka, Mayumi Ito, Toshihara Makino, Norikazu Mizuochi, Toshu. An

J. Appl. Phys. 130, 243903 (7 pages) (2021).

DOI: [10.1063/5.0072973](https://doi.org/10.1063/5.0072973)

“Normally-off operations in partially-gate-recessed AlTiO/AlGaN/GaN field-effect transistors

based on interface charge engineering”

Duong Dai Nguyen, Takehiro Isoda, Yuchen Deng, Toshi-kazu Suzuki

J. Appl. Phys. 130, 014503 (8 pages) (2021).

DOI: [10.1063/5.0054045](https://doi.org/10.1063/5.0054045)

“Fungal effector SIB1 of *Colletotrichum orbiculare* has unique structural features and can suppress plant immunity in *Nicotiana benthamiana*”

Ru Zhang, Noriyoshi Isozumi, Masashi Mori, Ryuta Okuta, Suthitar Singkaravanit-Ogawa, Tomohiro Imamura, Jun-Ichi Kurita, Pamela Gan, Ken Shirasu, Shinya Ohki, Yoshitaka Takano

J. Biol. Chem. 297, 101370 (14 pages) (2021).

DOI: [10.1016/j.jbc.2021.101370](https://doi.org/10.1016/j.jbc.2021.101370)

“Self-catalyst growth and characterization of wurtzite GaAs/InAs core/shell nanowires”

Dat Q. Tran, Md. Earul Islam, Koichi Higashimine, Masashi Akabori

J. Crystal Growth 564, 126126 (7 pages) (2021).

DOI: [10.1016/j.jcrysgro.2021.126126](https://doi.org/10.1016/j.jcrysgro.2021.126126)

“Three-Phase Coexistence in Binary Charged Lipid Membranes in a Hypotonic Solution”

Jingyu Guo, Hiroaki Ito, Yuji Higuchi, Klemen Bohinc, Naofumi Shimokawa, Masahiro Takagi

Langmuir 37, 9683-9693 (2021).

DOI: [10.1021/acs.langmuir.1c00967](https://doi.org/10.1021/acs.langmuir.1c00967)

“Peculiar Atomic Bond Nature in Platinum Monatomic Chains”

Jiaqi Zhang, Keisuke Ishizuka, Masahiko Tomitori, Toyoko Arai, Kenta Hongo, Ryo Maezono, Erio Tosatti, Yoshifumi Oshima

Nano Lett. 21, 3922-3928 (7 pages) (2021).

DOI: [10.1021/acs.nanolett.1c00564](https://doi.org/10.1021/acs.nanolett.1c00564)

“Optically activatable photosynthetic bacteria-based highly tumor specific immunotheranostics”

Xi Yang, Satoru Komatsu, Sheethal Reghu, Eijiro Miyako

Nano Today 37, 101100 (14 pages) (2021).

DOI: [10.1016/j.nantod.2021.101100](https://doi.org/10.1016/j.nantod.2021.101100)

“A printable active network actuator built from an engineered biomolecular motor”

Takahiro Nitta, Yingzhe Wang, Zhao Du, Keisuke Morishima, Yuichi Hiratsuka

Nat. Mater. 20, 1149-1155 (2021).

DOI: [10.1038/s41563-021-00969-6](https://doi.org/10.1038/s41563-021-00969-6)

“Photocrosslinking of DNA using 4-methylpyranocarbazole nucleoside with thymine base selectivity”

Jun-Ichi Mihara, Kenzo Fujimoto

Org. Biomol. Chem. 19, 9860-9866 (2021).

DOI: [10.1039/D1OB01621K](https://doi.org/10.1039/D1OB01621K)

“Comprehensive characterization of oligosaccharide conformational ensembles with conformer classification by free-energy landscape via reproductive kernel Hilbert space”

Tokio Watanabe, Hirokazu Yagi, Saeko Yanaka, Takumi Yamaguchi, Koichi Kato

Phys. Chem. Chem. Phys. 23, 9753-9760 (2021).

DOI: [10.1039/D0CP06448C](https://doi.org/10.1039/D0CP06448C)

“Probing Thermal Magnon Current Mediated by Coherent Magnon via Nitrogen-Vacancy Centers in Diamond”

Dwi Prananto, Yuta Kainuma, Kunitaka Hayashi, Norikazu Mizuochi, Ken-ichi Uchida, Toshi An

Phys. Rev. Appl. 16, 064058 (9 pages) (2021).

DOI: [10.1103/PhysRevApplied.16.064058](https://doi.org/10.1103/PhysRevApplied.16.064058)

"Anomalous Hall effect in MnAs: Intrinsic contribution due to Berry curvature"

C. Helman, A. Camjayi, E. Islam, M. Akabori, L. Thevenard, C. Gourdon, M. Tortarolo

Phys. Rev. B 103, 134408 (6 pages) (2021).

DOI: [10.1103/PhysRevB.103.134408](https://doi.org/10.1103/PhysRevB.103.134408)

“Band engineering in an epitaxial two-dimensional honeycomb Si₆-xGe_x alloy”

A. Fleurence, Y. Awatani, C. Huet, F. B. Wiggers, S. M. Wallace, T. Yonezawa, Y. Yamada-Takamura

Phys. Rev. Mater. 5, L011001 (5 pages) (2021).

DOI: [10.1103/PhysRevMaterials.5.L011001](https://doi.org/10.1103/PhysRevMaterials.5.L011001)

“Development of robust isothermal RNA amplification assay for lab-free testing of RNA viruses”

Radhika Biyani, Kirti Sharma, Kenji Kojima, Madhu Biyani, Vishnu Sharma, Tarun Kumawat, Kevin Maafu Juma, Itaru Yanagihara, Shinsuke Fujiwara, Eiichi Kodama, Yuzuru Takamura, Masahiro Takagi, Kiyoshi Yasukawa, Manish Biyani

Sci. Rep. 11, 15997 (13 pages) (2021).

DOI: [10.1038/s41598-021-95411-x](https://doi.org/10.1038/s41598-021-95411-x)

“Structure and antimicrobial activity of NCR169, a nodule-specific cysteine-rich peptide of *Medicago truncatula*”

Noriyoshi Isozumi, Yuya Masubuchi, Tomohiro Imamura, Masashi Mori, Hironori Koga, Shinya Ohki

Sci. Rep. 11, 9923 (12 pages) (2021).

DOI: [10.1038/s41598-021-89485-w](https://doi.org/10.1038/s41598-021-89485-w)

“Evolution of the Ionization Energy in Two- and Three-Dimensional Thin Films of Pentacene Grown on Silicon Oxide Surfaces”

Keitaro Eguchi, Hideyuki Murata

The J. Phys. Chem. Lett. 12, 9407-9412 (2021).

DOI: [10.1021/acs.jpcelett.1c02723](https://doi.org/10.1021/acs.jpcelett.1c02723)

2020

“Effect of Gallium Substitution in $\text{Cu}_3\text{Al}_{1-x}\text{Ga}_x\text{SnS}_5$ Nanobulk Materials on Thermoelectric Properties”

Pratibha Dwivedi, Masanobu Miyata, Koichi Higashimine, Mari Takahashi, Wei Zhou, Michihiro Ohta, Shinya Maenosono

ACS Appl. Energy Mater. 3, 5784-5791 (2020).

DOI: [10.1021/acsaem.0c00730](https://doi.org/10.1021/acsaem.0c00730)

"High-Throughput Experimentation and Catalyst Informatics for Oxidative Coupling of Methane"

Thanh Nhat Nguyen, Thuy Phuong Nhat Tran, Ken Takimoto, Ashutosh Thakur, Shun Nishimura, Junya Ohyama, Itsuki Miyazato, Lauren Takahashi, Jun Fujima, Keisuke Takahashi, Toshiaki Taniike

ACS Catal. 10, 921-932 (2020).

DOI: [10.1021/acscatal.9b04293](https://doi.org/10.1021/acscatal.9b04293)

“Synthesis and Permselectivity of a Soluble Two-Dimensional Macromolecular Sheet by Solid-Solid Interfacial Polycondensation followed by Chemical Exfoliation”

Yanqing Qu, Xiaoyu Du, Kehan Cheng, Yu Zang, Liang Xu, Ken-ichi Shinohara, Masahiro Teraguchi, Takashi Kaneko, Toshiki Aoki

ACS Mater. Lett. 2, 1121–1128 (2020).

DOI: [10.1021/acsmaterialslett.0c00178](https://doi.org/10.1021/acsmaterialslett.0c00178)

“Aerobic Oxidation of 5-Hydroxymethylfurfural into 2,5-Furandicarboxylic Acid over Gold Stabilized on Zirconia-Based Supports”

Abdallah I.M. Rabee, Son Dinh Le, Koichi Higashimine, Shun Nishimura

ACS Sustainable Chem. Eng. 8, 7150-7161 (2020).

DOI: [10.1021/acssuschemeng.0c01619](https://doi.org/10.1021/acssuschemeng.0c01619)

“A facile solution-combustion-synthetic approach enabling low-temperature PZT thin-films”

Phan Trong Tue, Tatsuya Shimoda, Yuzuru Takamura

APL Mater. 8, 021112 (8 pages) (2020).

DOI: [10.1063/1.5143457](https://doi.org/10.1063/1.5143457)

“Effect of Support on the Formation of CuPd Alloy Nanoparticles for the Hydrogenation of Succinic Acid”

Son Dinh Le, Shun Nishimura

Appl. Catal. B 282, 119619 (10 pages) (2020).

DOI: [10.1016/j.apcatb.2020.119619](https://doi.org/10.1016/j.apcatb.2020.119619)

“Remodeling of the Oligosaccharide Conformational Space in the Prebound State To Improve Lectin-Binding Affinity”

Tatsuya Suzuki, Saeko Yanaka, Tokio Watanabe, Gengwei Yan, Tadashi Satoh, Hirokazu Yagi, Takumi Yamaguchi, Koichi Kato

Biochem. 34, 3180-3185 (2020).

DOI: [10.1021/acs.biochem.9b00594](https://doi.org/10.1021/acs.biochem.9b00594)

“Fluorescence In Situ Hybridization of 16S rRNA in Escherichia coli Using Multiple Photo-Cross-Linkable Probes”

Kenzo Fujimoto, Nanami Watanabe

ChemistrySelect 5, 14670-14676 (2020).

DOI: [10.1002/slct.202003343](https://doi.org/10.1002/slct.202003343)

“A novel WD40-repeat protein involved in formation of epidermal bladder cells in the halophyte

quinoa”

Tomohiro Imamura, Yasuo Yasui, Hironori Koga, Hiroki Takagi, Akira Abe, Kanako Nishizawa, Nobuyuki Mizuno, Shinya Ohki, Hiroharu Mizukoshi, Masashi Mori

Commun. Biol. 3, 513 (14 pages) (2020).

DOI: [10.1038/s42003-020-01249-w](https://doi.org/10.1038/s42003-020-01249-w)

“Acoustic Camera-Based Pose Graph SLAM for Dense 3-D Mapping in Underwater Environments”

Yusheng Wang, Yonghoon Ji, Hanwool Woo, Yusuke Tamura, Hiroshi Tsuchiya, Atsushi Yamashita, Hajime Asama

IEEE J. Ocean. Eng. 46, 829-847 (2020).

DOI: [10.1109/JOE.2020.3033036](https://doi.org/10.1109/JOE.2020.3033036)

“High-transconductance indium oxide transistors with a lanthanum-zirconium gate oxide characteristic of an electrolyte”

Jinwang Li, Hirokazu Tsukada, Takaaki Miyasako, Phan Trong Tue, Kazuhiro Akiyama, Hiromi Nakazawa, Yuzuru Takamura, Tadaoki Mitani, Tatsuya Shimoda

Jpn. J. Appl. Phys. 127, 064504 (11 pages) (2020).

DOI: [10.1063/1.5119210](https://doi.org/10.1063/1.5119210)

“Impact of annealing environment on electrical properties of yttrium-doped hafnium zirconium dioxide thin films prepared by the solution process”

Mohit, Tatsuya Murakami, Ken-ichi Haga, Eisuke Tokumitsu

Jpn. J. Appl. Phys. 59, SPPB03 (9 pages) (2020).

DOI: [10.35848/1347-4065/aba50b](https://doi.org/10.35848/1347-4065/aba50b)

“Electron transport properties of $\text{NiSi}_{3-x}\text{Ga}_x\text{P}_4$ with Ni-3d, P-3p hybridized orbital”

Masanobu Miyata, Takumi Fukushima, Mikio Koyano,

J. Appl. Phys. 128, 045702 (8 pages) (2020).

DOI: [10.1063/5.0012013](https://doi.org/10.1063/5.0012013)

“Degradation of fluorescent organic light emitting diodes caused by quenching of singlet and triplet excitons”

Duy Cong Le, Duong Dai Nguyen, Savanna Lloyd, Toshi Kazu Suzuki, Hideyuki Murata

J. Mater. Chem. C 8, 14873-14879 (2020).

DOI: [10.1039/D0TC02928A](https://doi.org/10.1039/D0TC02928A)

“Mechanisms for overcharging of carbon electrodes in lithium-ion/sodium-ion batteries analysed by operando solid-state NMR”

Kazuma Gotoh, Tomu Yamakami, Ishin Nishimura, Hina Kometani, Hideka Ando, Kenjiro Hashi, Tadashi Shimizu, Hiroyuki Ishida

J. Mater. Chem. A 8, 14472-14481 (2020).

DOI: [10.1039/D0TA04005C](https://doi.org/10.1039/D0TA04005C)

“Determination of alkali and alkaline earth elements in radioactive waste generated from reprocessing plant by liquid electrode plasma optical emission spectrometry”

Masahiko Yamamoto, Van-Khoai Do, Shigeo Taguchi, Takehiko Kuno, Yuzuru Takamura

J. Radioanal. Nucl. Chem. 327, 433-444 (2020).

DOI: [10.1007/s10967-020-07490-1](https://doi.org/10.1007/s10967-020-07490-1)

"Osmotic-Tension-Induced Membrane Lateral Organization"

Nichaporn Wongsirojkul, Naofumi Shimokawa, Pakorn Opaparakasit, Masahiro Takagi, Tsutomu Hamada

Langmuir 36, 2937-2945 (2020).

DOI: [10.1021/acs.langmuir.9b03893](https://doi.org/10.1021/acs.langmuir.9b03893)

“Photothermogenetic inhibition of cancer stemness by near-infrared-light-activatable nanocomplexes”

Yue Yu, Xi Yang, Sheethal Reghu, Sunil C. Kaul, Renu Wadhwa, Eijiro Miyako

Nat. Commun. 11, 4117 (14 pages) (2020).

DOI: [10.1038/s41467-020-17768-3](https://doi.org/10.1038/s41467-020-17768-3)

“Low switching voltage, high-stability organic phototransistor memory based on a photoactive dielectric and an electron trapping layer”

Toan Thanh Dao, Heisuke Sakai, Kei Ohkubo, Shunichi Fukuzumi, Hideyuki Murata

Org. Electron. 77, 105505 (6 pages) (2020).

DOI: [10.1016/j.orgel.2019.105505](https://doi.org/10.1016/j.orgel.2019.105505)

“First-principles study on the stability and electronic structure of monolayer GaSe with trigonal-antiprismatic structure”

Hirokazu Nitta, Takahiro Yonezawa, Antoine Fleurence, Yukiko Yamada-Takamura, Taisuke Ozaki

Phys. Rev. B. 102, 235407 (7 pages) (2020).

DOI: [10.1103/PhysRevB.102.235407](https://doi.org/10.1103/PhysRevB.102.235407)

“Emergence of nearly flat bands through a kagome lattice embedded in an epitaxial two-dimensional Ge layer with a bitriangular structure”

A. Fleurence, C-C Lee, R. Friedlein, Y. Fukaya, S. Yoshimoto, K. Mukai, H. Yamane, N. Kosugi, J. Yoshinobu, T. Ozaki, Y. Yamada-Takamura

Phys. Rev. B. 102, 201102 (6 pages) (2020).

DOI: [10.1103/PhysRevB.102.201102](https://doi.org/10.1103/PhysRevB.102.201102)

“DRY & WET: meniscus splitting from a mixture of polysaccharides and water”

Kosuke Okeyoshi

Polym. J. 52, 1185-1194 (2020).

DOI: [10.1038/s41428-020-0369-y](https://doi.org/10.1038/s41428-020-0369-y)

“Vapor-Sensitive Materials from Polysaccharide Fibers with Self-Assembling Twisted Microstructures”

Kulisara Budpud, Kosuke Okeyoshi, Maiko K Okajima, Tatsuo Kaneko

Small 16, 2001993 (7 pages) (2020).

DOI: [10.1002/sml.202001993](https://doi.org/10.1002/sml.202001993)

“Cross-correlated humidity-dependent structural evolution of Nafion thin films confined on a platinum substrate”

Udit N. Shrivastava, Kota Suetsugu, Shusaku Nagano, Helmut Fritzsche, Yuki Nagao, Kunal Karan

Soft Matter 16, 1190-1200 (2020).

DOI: [10.1039/C9SM01731C](https://doi.org/10.1039/C9SM01731C)

2019

“Carrier-enhanced anticancer efficacy of sunitinib-loaded green tea-based micellar nanocomplex beyond tumor-targeted delivery”

N. Yongvongsoontorn, J. E. Chung, S. J. Gao, K. H. Bae, M. H. Tan, J. Y. Ying, M. Kurisawa

ACS Nano 13, 7591-7602 (2019).

DOI: [10.1021/acsnano.9b00467](https://doi.org/10.1021/acsnano.9b00467)

“Highly effective removal of OH bonds in low-temperature silicon oxide films by annealing with ammonia gas at a low temperature of 175 °C”

Susumu Horita

Jpn. J. Appl. Phys. 58, 038002 (4 pages) (2019).

DOI: [10.7567/1347-4065/aafb64](https://doi.org/10.7567/1347-4065/aafb64)

2018

“Highly augmented drug loading and stability of micellar nanocomplexes composed of doxorubicin and poly(ethylene glycol)–green tea catechin conjugate for cancer therapy”

K. Liang, J. E. Chung, S. J. Gao, N. Yongvongsoontorn, M. Kurisawa

Adv. Mater. 30, 1706963 (8pages) (2018).

DOI: [10.1002/adma.201706963](https://doi.org/10.1002/adma.201706963)

“Dependences of deposition rate and OH content on concentration of added trichloroethylene in low-temperature silicon oxide films deposited using silicone oil and ozone gas”

Susumu Horita and Puneet Jain

Jpn. J. Appl. Phys. 57, 03DA02 (7 pages) (2018).

DOI: [10.7567/JJAP.57.03DA02](https://doi.org/10.7567/JJAP.57.03DA02)

2017

“Hyaluronic acid-green tea catechin micellar nanocomplex: Fail-safe cisplatin nanomedicine for the treatment of ovarian cancer without off-target toxicity”

K. H. Bae, S. Tan, A. Yamashita, W. X. Ang, S. Gao, S. Wang, J. E. Chung, M. Kurisawa

Biomaterials 148, 41-53 (2017).

DOI: [10.1016/j.biomaterials.2017.09.027](https://doi.org/10.1016/j.biomaterials.2017.09.027)

"Photo-induced fusion of lipid bilayer membranes"

Yui Suzuki, Ken H. Nagai, Anatoly Zinchenko, Tsutomu Hamada

Langmuir 33, 2671-2676 (2017).

DOI: [10.1021/acs.langmuir.7b00448](https://doi.org/10.1021/acs.langmuir.7b00448)

“Micrometer-sized molecular robot changes its shape in response to signal molecules”

Yusuke Sato, Yuichi Hiratsuka, Ibuki Kawamata, Satoshi Murata, Shin-ichiro M. Nomura
Sci. Rob. 2, eaal3735 (2017).

DOI: [10.1126/scirobotics.aal3735](https://doi.org/10.1126/scirobotics.aal3735)

2016

“Material properties of pulsed-laser crystallized Si thin films grown on yttria-stabilized zirconia crystallization-induction layers by two-step irradiation method”

Mai Thi Kieu Lien and Susumu Horita

Jpn. J. Appl. Phys. 55, 03CB02 (8 pages) (2016).

DOI: [10.7567/JJAP.55.03CB02](https://doi.org/10.7567/JJAP.55.03CB02)

2014

“Self-Assembled micellar nanocomplexes comprising green tea catechin derivatives and protein drugs for cancer therapy”

J. E. Chung, S. Tan, S. J. Gao, N. Yongvongsoontorn, S. H. Kim, J. H. Lee, H. S. Choi, H. Yano, L. Zhuo, M. Kurisawa, J. Y. Ying

Nat. Nanotechnol. 9, 907-912 (2014).

DOI: [10.1038/nnano.2014.208](https://doi.org/10.1038/nnano.2014.208)

2013

“Self-organized optical device driven by motor proteins”

Susumu Aoyama, Masahuko Shimoike, Yuichi Hiratsuka

PNAS. 110, 16408-16413 (2013).

DOI: [10.1073/pnas.1306281110](https://doi.org/10.1073/pnas.1306281110)

2009

“Disturb-Free Writing Operation for Ferroelectric Gate Field-Effect Transistor Memories with Intermediate Electrodes”

Susumu Horita, Bui Nguyen Quoc Trinh

IEEE Trans. on Electron Devices 56, 3090-3096 (2009).

DOI: [10.1109/TED.2009.2032744](https://doi.org/10.1109/TED.2009.2032744)