

6. 研究成果リスト

原著論文

1. Ultrafast electron microscopy: Reinventing femtosecond atomic-scale imaging
Jinfeng Yang
Research OUTREACH 112, 26-29 (2020)
2. The conceptual design of 1-ps time resolution neutron detector for fusion reaction history measurement at OMEGA and the National Ignition Facility
Yasunobu Arikawa, Masato Ota, Makoto Nakajima, Tomoki Shimizu, Sadashi Segawa, Thanh Nhat Khoa Phan, Youichi Sakawa, Yuki Abe, Alessio Morace, Seyed Reza Mirfayzi, Akifumi Yogo, Shinsuke Fujioka, Mitsuo Nakai, Hiroyuki Shiraga, Hiroshi Azechi, Ryosuke Kodama, Koichi Kan, Johan Frenje, Maria Gatu Johnson, Arijit Bose, Neel V. Kabadi, Graeme D. Sutcliffe, Patrick Adrian, Chikang Li, Fredrick H. Seguin, Richard Petrasso
3. Concept model of atomic hydrogen dry developing process for photolithographic patterning
Yuki Takemori, Masao Gohdo, Yuta Koda, Hideo Horibe
AIP Advances 10, 105223 (2020)
4. Analytical model of the streaking process in a single split-ring resonator for sub-ps electron pulse
Yifang Song, Cheng-Ying Tsai, Kuanjun Fan, Yang Xu, Jinfeng Yang
Nuclear Instrument and Methods in Physics Research, A 987 164861 (2020)
5. Longitudinal and transverse spatial beam profile measurement of relativistic electron bunch by electro-optic sampling
Masato Ota, Koichi Kan, Soichiro Komada, Yasunobu Arikawa, Tomoki Shimizu, Valynn Katrine Mag-usara, Youichi Sakawa, Tatsunosuke Matsui, Makoto Nakajima
Applied Physics Express 14, 026503 (2021)
6. Optimization of a B₄C/graphite composite energy degrader and its shielding for a proton therapy facility

Zhiyuan Mei, Kuanjun Fan, Zhikai Liang, Jinfeng Yang, Mingwu Fan
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7. In vitro and in vivo anti-herpes simplex virus activity of monogalactosyl diacylglyceride from *Coccomyxa* sp. KJ (IPOD FERM BP-22254), a green microalga,
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Kazuki Azumagawa and Takahiro KOZAWA,
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9. Lamellar Orientation of a Block Copolymer via an Electron-Beam Induced Polarity Switch in a Nitrophenyl Self-Assembled Monolayer or Si Etching Treatments,
Hiroki Yamamoto, Guy Dawson, Takahiro Kozawa and Alex P. G. Robinson,
Quantum Beam Sci. (2020) 4, 19.
10. Resist thickness dependence of line width roughness of chemically amplified resists used for electron beam lithography,
Naoki Maeda, Akihiro Konda, Kazumasa Okamoto, Takahiro Kozawa and Takao Tamura,
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11. Heating effect of the radiation chemistry of polyhydroxystyrene-type chemically amplified resists,
Yuta Ikari, Kazumasa Okamoto, Akihiro Konda, Takahiro Kozawa and Takao Tamura,
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12. Regression analysis of photodecomposable quencher concentration effects on chemical gradient in chemically amplified extreme ultraviolet resist processes,
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- Jpn. J. Appl. Phys. (2020) 59, 116505.
13. Formation of intramolecular dimer radical ions of diphenyl sulfones,
Kazumasa Okamoto, Shunpei Kawai & Takahiro Kozawa,
Sci. Rep. (2020) 10, 19823.
 14. Changes in molecular weight distribution caused by main-chain scission of electron
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Ayako Nakajima, Manabu Hoshino and Takahiro Kozawa,
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 18. Functional and structural characterization of a flavoprotein monooxygenase
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21. Shallow trap state-enhanced photocatalytic hydrogen evolution over thermal-decomposed graphitic carbon nitride
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K. Tashiro, T. Murafuji, M. Sumimoto, M. Fujitsuka, S. Yamazaki
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26. Synthesis of B₁₂-BODIPY dyad for B₁₂-inspired photochemical transformations of trichloromethylated organic compound
Y. Anai, K. Shichijo, M. Fujitsuka, Y. Hisaeda, H. Shimakoshi

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27. Aggregation-induced photocatalytic activity and efficient photocatalytic hydrogen evolution of amphiphilic rhodamines in water
H. Shigemitsu, Y. Tani, T. Tamemoto, T. Mori, X. Li, Y. Osakada, M. Fujitsuka, T. Kida
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29. Control of triplet blinking using cyclooctatetraene to access the dynamics of biomolecules at the single-molecule level
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30. Investigation of gamma-ray induced optical property changes in non-doped and Ce-doped lithium-rich oxide glass
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31. Titanium dioxide thin films as vacuum ultraviolet photoconductive detectors with enhanced photoconductivity by gamma-ray irradiation
M. Cadatal-Raduban, K. Yamanoi, J. Olejníček, M. Kohout, S. Katod, Y. Horiuchi, T. Kato, Y. Haoze, N. Sarukura, S. Ono
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32. Evidence for a critical dose above which damage to carbonate ester bonds in PADC appear after gamma ray and ultra soft X-ray exposures
Tamon Kusumoto, Shogo Okada, Hisaya Kurashige, Kazuo Kobayashi, Michel Fromm, Quentin Raffy, Nicolas Ludwig, Masato Kanasaki, Keiji Oda, Yoshihide

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33. Reconfiguration of magnetic domain structures of ErFeO₃ by intense terahertz free electron laser pulses
Takayuki Kurihara, Kazumasa Hirota, Hongsong Qiu, Khoa Thanh Nhat Phan,
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34. Propagation of THz irradiation energy through aqueous layers: Demolition of actin filaments in living cells
Shota Yamazaki, Masahiko Harata, Yuya Ueno, Masaaki Tsubouchi, Keiji Konagaya, Yuichi Ogawa, Goro Isoyama, Chiko Otani, Hiromichi Hoshina
SCIENTIFIC REPORTS(2020.6)
35. Plane photoacoustic wave generation in liquid water using irradiation of terahertz pulses
Masaaki Tsubouchi, Hiromichi Hoshina, Masaya Nagai, Goro Isoyama
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36. Extremely high-intensity operation of a THz free-electron laser using an electron beam with a higher bunch charge
Keigo Kawase, Masaki Nagai, Kazuya Furukawa, Masaki Fujimoto,
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37. Dissolution of a fibrous peptide by terahertz free electron laser
Takayasu Kawasaki, Koichi Tsukiyama, and Akinori Irizawa
Sci. Rep. **9**, 10636 (2019).
38. Infrared Laser Induced Amyloid Fibril Dissociation: A Joint Experimental/Theoretical Study on the GNNQQNY Peptide
Takayasu Kawasaki, Viet Hoang Man, Yasunobu Sugimoto, Nobuyuki Sugiyama,
Hiroko Yamamoto, Koichi Tsukiyama, Junmei Wang, Philippe Derreumaux, and
Phuong H. Nguyen

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39. Spatially Resolved Spectral Imaging by A THz-FEL
Akinori Irizawa, Masaki Fujimoto, Keigo Kawase, Ryukou Kato, Hidenori Fujiwara, Atsushi Higashiya, Salvatore Macis, Luca Tomarchio, Stefano Lupi, Augusto Marcelli and Shigemasa Suga, *Condens. Matter* 5(2) 38-1-14 (2020)
40. Angular Dependence of Copper Surface Damage Induced by an Intense Coherent THz Radiation Beam
Salvatore Macis, Luca Tomarchio, Silvia Tofani, S. Javad Rezvani, Luigi Faillace, Stefano Lupi, Akinori Irizawa, and Augusto Marcelli, *Condens. Matter* 5(1) 16-1-10 (2020)
41. Electron Beam Chirp Dexterity in Staging Laser Wakefield Acceleration
Naveen Pathak, Alexei Zhidkov, & Tomonao Hosokai, *Phys. Plasmas*, accepted (2021)

著書

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Reviews

1. ESRから調べるDNAの放射線傷害機構,
小林一雄,
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2. Reaction dynamics of excited radical ions revealed by ultrafast laser spectroscopy
M. Fujitsuka

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3. Single-molecule study of redox reaction kinetics by observing fluorescence blinking

K. Kawai, M. Fujitsuka, A. Maruyama

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5. Development of a Free-Electron Laser in the Terahertz Region

Goro Isoyama

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6. 赤外自由電子レーザーによる生体物質の構造制御

川崎 平康

J. Jpn. Soc. Infrared Science & Technology, **30**(1), 82-88 (2020).

解説

1. 「自由電子レーザーによる回折限界を超えた微細加工」

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2. 「大阪大学 遠赤外・テラヘルツ自由電子レーザーを用いた利用研究」

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