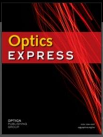

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### ☐ Fourier Optics, Image and Signal Processing

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**High-quality phase-only Fourier hologram generation with camera-in-the-loop**
Han-Ju Yeom, Keehoon Hong, and Minsik Park
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**Integrating thermal and anatomical imaging for thyroid 3D modeling**
Mauren Abreu de Souza, Santiago Felipe Luna Romero, Beatriz Luci Fernandes, Izabelly Mucholowski Ribeiro, Alice Blazquez Barberio, and Ionildo José Sanches
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### ☐ Holography, Gratings, and Diffraction

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**Objective quality assessment on angular spectrum for holographic fringe pattern**
Younghun Kim, Hoonjong Kang, and Nam Kim
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**Asymmetric point-spread function in the tilted plane**
Fan Wang, David Blinder, Pin Wang, Yaping Zhang, Tomoyoshi Ito, and Tomoyoshi Shimobaba
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### ☐ Imaging Systems, Microscopy, and Displays

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**Robustness of lensless single random phase encoding systems to image sensor pixel size**
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### ☐ Medical Optics and Biotechnology

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**3DChoroidSwin: advancing 3D choroid segmentation in OCT images through Swin Transformer and morphological guidance**
Takayuki Okamoto, Shingo Tamachi, Takehito Iwase, Tomohiro Niizawa, Yuto Kawamata, Hirotaka Yokouchi, Takayuki Baba, and Hideaki Haneishi
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## ADVANCED SOLID-STATE LASERS 2024

### ☐ Lasers, Optical Amplifiers, and Laser Optics

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**Femtosecond Bessel laser beam generated directly from a mode-locked solid-state oscillator with axicon output couplers**
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**Diode-pumped mode-locked Yb:$YScO_3$ laser**
Longxin Liu, Jian Liu, Zhiyong Liang, Zhengxin Jiang, Chuang Yang, Chong Xu, Jie Ma, Xu Xiaodong, Kheirreddine Lebbou, Hai-Yu Nie, Ge Zhang, Weidong Chen, and Jun Xu
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**Purity and composite petal-like mode laser emission with tunable topological charge from 1 to 35**
Haiyong Zhu, Zihan Zhang, Jie Liu, Yongchang Zhang, Xinxin Jin, Zhihong Li, Lifen Yan, and Yanmin Duan
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**High-peak-power nanosecond pulsed red laser at 657 nm based on the Nd:YLF dual-crystal scheme**
Hui Zhao, Shibo Dai, Yisen Wang, Keyin Li, Yongyao Li, Zhen Li, and Zhenqiang Chen
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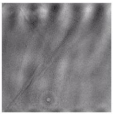

This visualization shows a 3D video of ~10 μm silica particles launched from an array of custom MEMS devices. See Khorshad et al., Fig. 4(c) for details.

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## ☐ Optical Materials

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**Diode-pumped microchip laser from neodymium doped calcium borosilicate glass**
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**Spectroscopy and laser operation of $Er^{3+}$ doped $Y_xSc_{1-x}O_3$ sesquioxide crystals at 2.8 µm**
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## ☐ Nanophotonics for Energy Applications

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**Numerical study of high-temperature, disk-based tungsten and molybdenum thermophotovoltaic selective thermal emitters**
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**Trap-loss fluorescence spectroscopy of cesium magneto-optical trap with single-photon Rydberg excitation and the background electric field measurement and regulation**
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**Enhancement of spectral performance in gadolinium-based BEUV sources by supplying pre-formed plasma with cavity-confined targets**
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**Enhanced photonic spin Hall shift and scattering efficiency through chiral nanoparticles**
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## ☐ Fourier Optics, Image and Signal Processing

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**Model-based autofocus for near-field phase retrieval**
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**Demodulation algorithm for temperature and pressure sensing in side-hole fiber Bragg gratings using a CNN-LSTM network**
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**Joint loss function design in diffractive optical neural network classifiers for high power efficiency**
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**LED array positional misalignment correction method based on superimposed images for Fourier ptychography**
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**End-to-end physics-informed multi-branch GAN for enhanced DoFP polarization image reconstruction**
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**Usage of time multiplexing super resolution for imaging through scattering medium**
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**Dynamically reconfigurable 2D polarization-agnostic image edge-detection using nonvolatile phase-change metasurfaces**
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**High-performance, ultra-broadband silicon polarization beam splitter utilizing mode conversion Bragg gratings**
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**Observation of dynamics of harmonic order self-adaptation in optoacoustically mode-locked fiber laser**
X. Wang, B. Wang, W. He, X. Zhang, Q. Huang, H. Lin, Z. Huang, X. Jiang, and M. Pang
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**Generation of 431 fs, 321 μJ femtosecond pulses from chirped-pulse Yb-fiber and Yb:YAG hybrid amplifiers by using FBG spectral shaping technique**
Meng Su, Xianghao Meng, Xianglong Zhao, Zhaoqing Gong, Dun Mao, Xiaoyang Guo, Boyin Tai, Yutao Huang, Guoxin Zhang, and Pingxue Li
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Editors' Pick

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**Characterization of a multi-kW, large-aperture gas-cooled Faraday rotator**
František Batysta, Jakub Novák, Emily Erdman, Emily Sistrunk, Anthony Vella, Thomas Galvin, Michael Torrance, Joseph Mambourg, David Scerbak, Conor Byrne, Bedřich Rus, Andy Bayramian, Kathleen Schaffers, Chuck Heinbockel, Paul Rosso, David Gibson, Katherine Velas, and Thomas Spinka
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**Quad-color dark-bright pulse trapping in a fiber laser**
Boqiang Zhang, Chao Zeng, Ruixue Si, Jincheng Hu, Ding Luo, Yueqing Du, Dong Mao, and Jianlin Zhao
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Xuewen Chen, Wei Lin, Yang Yang, Zhaoheng Liang, Xu Hu, Wenlong Wang, Lin Ling, Yuankai Guo, Dongdan Chen, Xiaoming Wei, and Zhongmin Yang
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Luochen Qu, Qi Chu, Wenlu Wang, Zhiyong Jin, Fengqiao Gui, Feng He, Jiawei Wang, Yong Yao, Xiaochuan Xu, Cheng Wang, and Jianan Duan
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Yuto Yoneda, Srinivasa Rao Allam, Yasushi Fujimoto, and Takashige Omatsu
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**Research on solid-state lasers with adjustable pulse width based on the controllable release of the inverted population**
Zhiyan Zhang, Hongyang Wang, Zhuo Wu, Fanjiang Yan, Shusen Zhao, Liang Zhiyong, and Xuechun Lin
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**Demonstration of controlled spatial incoherence for beam smoothing**
C. Dorrer and M. A. Spilatro
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**High-power narrow-linewidth nanosecond Ti:sapphire laser with volume Bragg grating**
Xinchong Fang, Chen Cui, Kaihao Zhang, Xinchen Chen, and Shilie Pan
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**Near transform-limited nanosecond pulse generation in mode-locked fiber lasers**
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Qingqing Kong, Kerong Jiao, Yunhan Zheng, Hangyu Yue, Chaoyu Ning, Rihong Zhu, and Hua Shen
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**Mechanism of dual-wavelength line-width synchronous narrow-modulation Q-switched laser based on composite mode selection**
Shupeng Ge, Jinge Dong, Long Jin, Yushi Jin, Yuan Dong, Yongji Yu, and Guangyong Jin
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**375–395 nm UV generation in Zn-indiffused MgO-doped PPLN waveguides pumped by an Alexandrite laser**
Goronwy Tawy, Noelia Palomar Davidson, Rex H. Bannerman, Glenn Churchill, Peter G. R. Smith, James C. Gates, and Corin B. E. Gawith
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Zhenjiang Xu, Lei Wang, Ziying Niu, Yongqiang Wang, Zijie Xu, Shuhong Li, Yunlong Liu, and Wenjun Wang
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**Coherent emission of antimonide semiconductor laser arrays with a phase-locked Talbot cavity**
Jianmei Shi, Yihang Chen, Hongguang Yu, Juntian Cao, Zhengqi Geng, Zhiyuan Wang, Haoran Wen, Enquan Zhang, Hao Tan, Yu Zhang, Dongwei Jiang, Yingqiang Xu, Haiqiao Ni, Chengao Yang, and Zhichuan Niu

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Bi-Wei Hu, Yang Shi, Zhong Dong, You-Ling Chen, Jin-Long Xiao, Yong-Zhen Huang, and Yue-De Yang
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Mengjiao Li, Xiaoshuai Zhang, Xiaoyi Ma, Jia Li, Jie Gong, Panlai Li, Xiaoyan Yu, Zixuan Wang, Chengrun Liu, Guodong Zhang, and Zhijun Wang
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Chenxi Gu, Yating Jin, Jiafang Li, Chang-Yin Ji, Shuguang Li, and Shanshan Chen
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**Photonic matrix multiplier makes a direction-finding sensor**
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**Electrically tunable Fano resonances in liquid crystal-based dynamic metasurface at telecommunication wavelengths**
Xin Chang, Mike Pivnenko, Weijie Wu, and Daping Chu
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Yiheng Wu, Haitao Chen, He Fu, Tingzhao Fu, Jianfa Zhang, Zhihong Zhu, and Shilong Jin
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Amin Ghahremani, Mohammad Neshat, and Zahra Shaterzadeh-Yazdi
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Supercontinuum generation in high-index doped silica photonic integrated circuits under diverse pumping settings
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Widely tunable dual-wavelength waveguide-based optical parametric oscillator
Maximilian Timmerkamp, Ming Gao, and Carsten Fallnich
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Localized surface plasmon resonance induced spatial self-phase modulation of $Cu_{2-x}S$ in the near-infrared region
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Single-frequency pump-enhanced monolithic MgO:PPLN optical parametric oscillator and vortex beam generation
Gang Zhao, Fei Wang, Chen Li, Jun Meng, Gaoyou Liu, and Zhaojun Liu
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Performance evaluation of free space optical communication terminal with local weather considerations
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Ultra-fast SOP rotation tracking and its enabled feedforward adaptive equalization based on superimposed chirp pilot
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MIMO equalization with adaptive intermodal interference cancellation for mitigating effect of mode-dependent loss in SDM transmission over coupled multi-core fiber
Manabu Arikawa and Kazunori Hayashi
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**Variable-focus flexible cylindrical lens based on near-infrared light-driven liquid crystal elastomers**
Shinian Liu, Dawei Zhang, Fei Wang, Sancan Han, Dechao Yu, and Fengting Li
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Peng Ji, Duo Li, Xing Su, Yuan Jin, and Bo Wang
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Luo Gu, Qiujie Yang, Xiang Wang, Yue Lin, Zhiyuan Mao, and Zhiping He
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Kewei Liu, Wenjie Zhu, Mao Ye, Zhe Wang, Zongtao Chen, Taige Liu, Haiwei Wang, and Xinyu Zhang
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Shahab Haidarian and Ulrike Wallrabe
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ZeLin Wan, Mei Qi, Yi Yan, ChenYue Lv, and BaoLe Lu
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**Single-polarization single-mode hollow-core anti-resonant fiber with nested stadium-shaped tubes**
Yiming Xiao, Shuai Ren, Houquan Liu, Yu Cheng, and Libo Yuan
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Azka Maula Iskandar Muda and Uğur Teğin
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Yue Wen, Dunke Lu, Shihong Huang, and Xiaohui Fang
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**Aluminum-related temperature dependence in erbium-doped fibers: optical loss, laser output power and the mechanism**
Gencheng Wang, Shengfei She, Yuting Zhang, Yan Zhang, Song Gao, Xiaoxia Cui, Zhe Li, Zhiyu Zhu, Chaoqi Hou, and Haitao Guo
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**Optimizing low-resolution spectral demodulation for long-period fiber gratings using residual convolutional neural networks**
Guanjun Wang, Jianxun Liu, Shengchao Chen, and Sufen Ren
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**Inverse design of discrete Raman amplifiers using an invertible neural network for ultra-wideband optical transmission based on hollow core fibers**
Zheyu Wu, Ran Gao, Fei Wang, Huan Chang, Zhipei Li, Dong Guo, Lei Zhu, Qi Zhang, Guangquan Wang, Shikui Shen, Yanbiao Chang, and Xiangjun Xin
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**Non-local effects in a Brillouin optical frequency-domain analysis system**
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Wentao Hou, Sascha Kalusniak, Stefan Püschel, Hiroki Tanaka, Jun Xu, Jun Tang, and Christian Kränkel
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Ying Wang, Yajie Li, Yingnan Guo, Shufang Wang, Guangsheng Fu, Yuriy I. Mazur, Morgan E. Ware, Gregory J. Salamo, and Baolai Liang
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**Distinctive molecular configuration of nanostructured silica deposited at a glancing angle**
Marcela Mireles, Brittany N. Hoffman, Sara MacNally, Christopher C. Smith, Amy L. Rigatti, and Stavros G. Demos
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**Fabrication and performance of high refractive index achromatic gradient index chalcogenide glass**
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**Laser-induced damage studies in the nanosecond regime on large-aperture anti-reflection coated ceramic Yb:YAG**
Mariastefania De Vido, Martin Divoky, Jan Pilar, Klaus Ertel, and Paul D. Mason
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Editors' Pick

☐

**Fast-speed electrically tunable liquid crystal metasurface for 2π phase modulation at normal and oblique angles of incidence**
Wenhan Zhang, Mike Pivnenko, and Daping Chu
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Bo Yang, Zhipeng Liu, Shuna Yang, and Hao Chi
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**Ultrasensitive self-filtering visible-light phototransistor using InGaN/GaN single-carrier superlattices and polarization depletion**
Zesehng Lv, Haoming Xu, Zhuoya Peng, Tianzhi Peng, Gang Wang, and Hao Jiang
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Hannaneh Karimi, Daniel J. Herrera, Adam A. Dadey, Dongxia Wei, J. Andrew McArthur, Seth R. Bank, and Joe. C. Campbell
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**Fabry-Perot resonance cavity for ultra-thin GaAs negative electron affinity photocathodes**
Xincun Peng, Linlin Jiang, Yu Wang, Jijun Zou, and Wenjuan Deng
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**Photonic time-intensity integrator based on the polarization sensitivity and amplitude modulation characteristics of the Mach-Zehnder modulator**
Jinjian Feng, Yang Jiang, Jing Xu, Xiaohong Lan, Qianyou Long, and Yunkun Luo
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**Enhancing current spreading by designed P-electrode shapes for high efficiency and high modulation bandwidth micro-LEDs**
WenAn Guo, ShiBiao Liu, Zhening Zhang, MingHe Wan, Tingwei Lu, Taoming Liu, GuoLong Chen, Shaoher Pan, Hao-Chung Kuo, YiJun Lu, Zhong Chen, and Tingzhu Wu
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**Photonic generation of frequency-doubled microwave waveforms based on time-domain processing**
Xiaohong Lan, Yang Jiang, Jing Xu, Yuejiao Zi, Guangfu Bai, Jing Tian, Shuangyi Linghu, Jiancheng Yu, Jinjian Feng, Qianyou Long, Yunkun Luo, Hui Zhang, and Tingyi Jiang
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**Controllable microwave pulse generation in actively mode-locked optoelectronic oscillator based on electro-optic dual-drive Mach-Zehnder modulator**
Zhen Zeng, Tian Xu, Yixuan Liu, Weiqiang Lyu, Ziwei Xu, Lingjie Zhang, Yaowen Zhang, Zhiyao Zhang, Heping Li, and Yong Liu
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**Propagation characteristics of the high-power partially-polarized partially-coherent beam in the atmosphere**
Zhiqiang Wang, Yingjian Wang, and Lu Lu
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**Topological structure synthesized by three-dimensional spin angular momentum of light**
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**Demonstrating the antinode loss effect as the operational mechanism of broadband multilayer film absorbers**
Zhenlong Xie, Jiayi Jiang, Fan Jiang, and Yihang Chen
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**On the localization of the high-intensity region of simultaneous space-time foci**
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**Exploring the upper limit of the number of vortices loaded onto a ring Airyprime vortex beam array to achieve the strongest auto-focusing ability**
Ziyuan Liu, Jian He, Jiahao Chen, Hongfei Gao, Fei Wang, Yimin Zhou, Yangjian Cai, Ruipin Chen, and Guoquan Zhou
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Yang Gao, Wenqiang Luo, Qiang Yang, Jiawei Liu, Zhiwei Zheng, and Hailu Luo
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**Stimuli-driven control of self-assembled radial-lying hierarchical superstructures of chiral nematics by using acoustic waves**
Pravinraj Selvaraj, Fang-Tzu Lin, Chi-Tang Huang, Pi-Hui Tuan, and Ko-Ting Cheng
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Weilin Cao, Xie Bin, Dawei Zhang, Songlin Zhuang, and Jianlang Li
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## ☐ Plasmonics

☐
**Titanium nitride nanoparticles as plasmonic nanothermometers**
Julio Aurelio Sarabia-Alonso, Emmanuel Vidales Pasos, Aishwarya Belamkar, Brandon Wagner, and Lorenzo Mangolini
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☐
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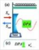
☐ 
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