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| Open Access  | All  | <p><b>In-situ formation of oriented perovskite nanosheets with tailored optical dipoles enabling &gt;30% EQE in pure-red LEDs</b></p> <p>In situ quasi-2D perovskite nanosheet films and high-performance LEDs.</p> <p>Shaowei Liu, Dezhong Zhang ... Chuanjiang Qin</p>   |  |
| Open Access  | All  | <p><b>LightIN: a versatile silicon-integrated photonic field programmable gate array with an intelligent configuration framework for next-generation AI clusters</b></p> <p>We demonstrate a programmable silicon photonic chip with an intelligent configuration framework, enabling on-chip computing, signal processing, switching, and encryption.</p> <p>Ying Zhu, Yifan Liu ... Shaohua Yu</p>   |  |
| Open Access  | All  | <p><b>Making UV light visible by exciting polarization-gate phototransistor to achieve energy transfer into GaN-based blue emission</b></p> <p>We integrate polarization-gated UV phototransistor and blue InGaN/GaN mini-LED. The photon-generated electrons in the UV phototransistor make the mini-LED generate blue emission. This makes UV light "visible" to naked eyes.</p> <p>Chunshuang Chu, Yao Jiang ... Zi-Hui Zhang</p>                         |  |
| Open Access  | All  | <p><b>Over 1.65 GW cm<sup>-2</sup> sr<sup>-1</sup> brightness 590 nm yellow second-harmonic generation in MOCVD-grown high-strain InGaAs/GaAs quantum well VECSEL</b></p> <p></p> <p>Zhicheng Zhang, Wenbo Zhan ... Jun Wang</p>   |  |
| Open Access  | All  | <p><b>Highly efficient and ultrahigh-resolution quantum dot light-emitting diodes via photoisomeric transformation</b></p> <p>We reveal the suppression of non-radiative energy transfer between QDs and the photoisomeric merocyanine for greatly improved luminescence after patterning, achieving a record efficiency (24.5%) and resolution (15,800 PPI) among direct photopatterning approaches.</p> <p>Chenglong Wu, Chengzao Luo ... Yu Chen</p>      |  |
| Open Access  | All  | <p><b>Upconversion optical entropy encoding for infrared complex-amplitude imaging</b></p> <p>We demonstrate upconversion optical entropy encoding for infrared complex-amplitude imaging by leveraging the synergistic interaction between light scattering in disordered photonic structures and lanthanide upconversion photoluminescence.</p> <p>Sheng-ke Zhu, Tuqiang Pan ... Jin-hui Chen</p>  |  |
| Open Access  | All  | <p><b>High-dimensional multiplexing through vortex electromagnetic wave manipulation by space-time-coding metasurfaces</b></p> <p>A programmable metasurface enables direct information modulation and high-dimensional communications by multiplexing OAM, polarization, and frequency.</p> <p>Chenfeng Yang, Si Ran Wang ... Geng-Bo Wu</p>  |  |
| Open Access  | All  | <p><b>Deterministic quantum light emitters in DNA origami-engineered molecule-MoS<sub>2</sub> hybrids</b></p> <p>DNA origami-based molecular patterning enables the deterministic fabrication of stable, high-yield single-photon-emitter arrays in atomically thin MoS<sub>2</sub>.</p> <p>Zhijie Li, Shen Zhao ... Irina V. Martynenko</p>   |  |
| Open Access  | All  | <p><b>Coherent control of electron-ion entanglement in multiphoton ionization</b></p> <p></p> <p>Yi-Jia Mao, Zhao-Han Zhang ... Feng He</p>  |  |
| Open Access  | All  | <p><b>Integrated photonic 3D tensor processing engine</b></p> <p>An integrated photonic 3D tensor processing engine enables 3D tensor computation, caching, and synchronization with tunable clock frequencies, experimentally achieving operation from 10 GHz to 30 GHz and 97.06% LIDAR point-cloud classification accuracy.</p> <p>Yue Wu, Ziheng Ni ... Linjie Zhou</p>  |  |
| Open Access  | All  | <p><b>Dual-mode 0D/2D spatial asymmetry optoelectronic device enabled by in situ microzone femtosecond laser deposition</b></p> <p>We introduce a novel in situ microzone femtosecond laser deposition process for construction of dual-mode 0D/2D spatial asymmetry optoelectronic device, which features for convenient and high precision.</p> <p>Zehua Li, Guisheng Zou ... Lei Liu</p>  |  |
| Open Access  | All  | <p><b>Ion-pair pinning on perovskite quantum dots for high-efficiency air-processed light-emitting diodes with Rec. 2020 compliance</b></p> <p>An ion-pair pinning strategy is proposed for air-processed FAPbBr<sub>3</sub> quantum dot light-emitting diodes with Rec. 2020 compliance, eliminating inert gas dependence for low-cost scalable manufacturing.</p> <p>Yuhang Cui, Danlei Zhu ... Dongxin Ma</p>   |  |
| Open Access  | All  | <p><b>Microfiber knot resonator with 10<sup>7</sup> Q-factor record</b></p> <p>We constructed a silica microfiber knot resonator fabrication model and achieved a record high Q-factor of 3.9 × 10<sup>7</sup> for this intriguing all-fiber soft resonator scheme, paving the path for more precision and efficient microfiber guiding-wave photonics.</p> <p>Xinxin Zhou, Zixuan Ding &amp; Fei Xu</p>   |  |
| Open Access  | All  | <p><b>Coherent control of (non-)Hermitian mode coupling: tunable chirality and exceptional point dynamics in photonic microresonators</b></p> <p>We experimentally and theoretically validate a reconfigurable passive photonic device enabling spectral tuning, backscattering suppression, chirality control, and Hermitian-non-Hermitian operation without permanent geometric modification.</p> <p>Bülent Aslan, Riccardo Franchi ... Lorenzo Pavesi</p> |  |
| Open Access  | All  | <p><b>Quantitative determination of in-plane optical anisotropy by surface plasmon resonance holographic microscopy</b></p> <p>Utilizing near-field light-matter interactions between material samples and surface plasmon waves oscillating along various in-plane directions, the in-plane optical anisotropy of ultrathin samples down to atomic-layer can be precisely determined.</p> <p>Jiwei Zhang, Wenzhi Li ... Jianlin Zhao</p>                    |  |
| Open Access  | All  | <p><b>Balancing positive and negative luminescence for thermoradiative signatureless communications</b></p> <p>We demonstrate covert transmission of data by rapidly modulating mid-infrared photodiodes, balancing forward and reverse bias luminescence. Only fast detectors resolve the signal; slow observers observe no evidence of communication.</p> <p>Michael P. Nielsen, Stefan A. Maier ... Nicholas J. Ekins-Daukes</p>                          |  |
| Open Access  | All  | <p><b>Single-view neural illumination estimation and editing for dynamic light field display</b></p> <p>Single-view neural illumination estimation enables interactive lighting editing and perceptual consistency for immersive dynamic light field displays.</p> <p>Xuyang Hong, Jie Xie ... Cheng Wu</p>  |  |
| Open Access  | All  | <p><b>Microcomb-enabled parallel self-calibration optical convolution streaming processor</b></p> <p>Parallel optical convolution streaming processor: we demonstrate the parallel optical convolution streaming processor, incorporating microcomb-enabled wavelength-division-multiplexing technology, achieving a parallel convolution computing speed of up to 4 trillion operations per second.</p> <p>Jijia Wang, Xingyuan Xu ... Kun Xu</p>           |  |
| Open Access  | All  | <p><b>The hidden limit in light: intrinsic noise reshaping Brillouin metrology</b></p> <p></p> <p>Leonardo Rossi &amp; Gabriele Bolognini</p>  |  |

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| <p><b>Article</b><br/>Open Access<br/>03 Mar 2026</p>          | <p><b>Large zoom ratio and adaptive aberration correction microscope using 4DPSF-aware Physical Degradation-guided Network</b></p> <p>A continuous optical zoom microscope based on an end-to-end joint optimization framework with large zoom ratio and adaptive aberration correction is proposed.</p> <p>Dong-Xu Yu, Zhao Jiang ... Qiong-Hua Wang</p>  |  |
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| <p><b>Article</b><br/>Open Access<br/>03 Mar 2026</p>          | <p><b>Three-dimensional nanophotonics with spatially modulated optical properties</b></p> <p>We combine hydrogel photopatterning with nanoparticle growth to form silver-enhanced features that isotropically shrink 1000 × in volume to realize nanoscale 3D structures with tunable optical properties.</p> <p>Yannick Salamin, Gaojie Yang ... Marin Soljačić</p>   |  |
| <p><b>Article</b><br/>Open Access<br/>03 Mar 2026</p>          | <p><b>Super-resolution functional photoacoustic microscopy via label-free cell tracking</b></p> <p>This work introduces super-resolution functional photoacoustic microscopy (SR-IPAM), which enables label-free three-dimensional imaging of microvascular structure, blood oxygenation, and blood flow at single-cell spatial resolution.</p> <p>Fenghe Zhong, Zhuoying Wang ... Song Hu</p>   |  |
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| <p><b>Light People</b><br/>Open Access<br/>02 Mar 2026</p>     | <p><b>Illuminating innovations: a conversation with René-Jean Essiambre on the frontiers of optical communication</b></p> <p>Yating Wan &amp; Chunxun Zang</p>   |  |
| <p><b>Article</b><br/>Open Access<br/>02 Mar 2026</p>          | <p><b>Breaking the mid-infrared interconnection barrier: a robust bonding for high-power optics based on liquid-like chalcogenide glass</b></p> <p>Liquid-like chalcogenide adhesive enables robust mid-IR fiber bonding, eliminating refractive index mismatch and organic absorption, achieving efficient 11.7 W laser power delivery at 4.7 μm with record performance.</p> <p>Xiang Wang, Feng Xiao ... Barry Luther-Davies</p>  |  |
| <p><b>Article</b><br/>Open Access<br/>02 Mar 2026</p>          | <p><b>Optically programmable dual-band perovskite single-pixel detector for color image encryption</b></p> <p>Owing to different outputs between single-pixel imaging and point-scan imaging, an optically programmable dual-band perovskite photodetector enables a high-security detector-dependent color image encryption scheme by integrating imaging and decryption processes.</p> <p>Ali Fu, Zhi-Hong Zhang ... Hong-Chao Liu</p>   |  |
| <p><b>Article</b><br/>Open Access<br/>28 Feb 2026</p>          | <p><b>Multifunctional ligand engineering enables high-performance CsPb(Br/Cl)<sub>3</sub> nanocrystals toward efficient and stable pure-blue perovskite LEDs</b></p> <p>Multifunctional fluorinated phosphonic acid passivates CsPb(Br/Cl)<sub>3</sub> perovskite nanocrystals via phosphonate-Pb<sup>2+</sup> coordination and hydrogen bond formation, achieving spectrally stable pure-blue LEDs with 14.8% EQE and 13-fold enhanced stability.</p> <p>Maimaitizi Hujiabudula, Hans Ågren &amp; Guanying Chen</p> |  |
| <p><b>Article</b><br/>Open Access<br/>28 Feb 2026</p>          | <p><b>Synchronization of complex spatio-temporal dynamics with lasers</b></p> <p>Jules Mercadier, Stefan Bittner &amp; Marc Sciamanna</p>  |  |
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| <p><b>Article</b><br/>Open Access<br/>28 Feb 2026</p>          | <p><b>Sub-1-volt, reconfigurable Gires-Tournois resonators for full-coloured monapixel array</b></p> <p>Electrically reconfigurable r-GT resonator integrated with PANI enable sub-1 V, ultralow-power, full-colour monapixel modulation with individually addressable monapixel array, enabling scalable, memory-in-pixel reflective displays with high pixel density.</p> <p>Joo Hwan Ko, Hyo Eun Jeong ... Young Min Song</p>   |  |
| <p><b>Article</b><br/>Open Access<br/>27 Feb 2026</p>          | <p><b>Interferometric Image Scanning Microscopy for label-free imaging at 120 nm lateral resolution inside live cells</b></p> <p>We introduce interferometric Image Scanning Microscopy (iISM). By combining principles of Image Scanning Microscopy with interferometric detection, iISM pushes the boundaries of spatial resolution, contrast and sensitivity in label-free microscopy.</p> <p>Michelle Küppers &amp; W. E. Moerner</p>  |  |
| <p><b>Article</b><br/>Open Access<br/>27 Feb 2026</p>          | <p><b>Femto-joule threshold reconfigurable all-optical nonlinear activators for picosecond pulsed optical neural networks</b></p> <p>We developed a graphene-silicon integrated photonic crystal cavity-based all-optical activator (ultralow threshold, fast, compact, reconfigurable) enabling picosecond optical neural network chips with high-efficiency computing.</p> <p>Ruizhe Liu, Zijia Wang ... Hongtao Lin</p>   |  |
| <p><b>Article</b><br/>Open Access<br/>26 Feb 2026</p>          | <p><b>Multifunctional movable-type coding metasurface enabling reconfigurable diffractive neural networks</b></p> <p>Inspired by movable-type printing, we propose movable-type coding metasurfaces for reconfigurable DNN in computing, holography, and sensing.</p> <p>Zhicai Yu, Xinyu Li ... Tie Jun Cui</p>   |  |
| <p><b>Article</b><br/>Open Access<br/>25 Feb 2026</p>          | <p><b>Time-bin encoded quantum key distribution over 120 km with a telecom quantum dot source</b></p> <p>Time-bin-encoded quantum key distribution using actively encoded single photons from a telecom-band quantum dot, achieving transmission over 120 km.</p> <p>Jipeng Wang, Joscha Hänel ... Fei Ding</p>  |  |

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