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ESI Hot Papers in January 2024

1. Optical meta-waveguides for integrated photonics and beyond

   Yuan Meng, Yizhen Chen, Longhui Lu, Yimin Ding, Andrea Cusano, Jonathan A. Fan, Qiaomu Hu, Kaiyuan Wang, Zhenwei Xie, Zhoutian Liu, Yuanmu Yang, Qiang Liu, Mali Gong, Qirong Xiao, Shulin Sun, Minming Zhang, Xiaocong Yuan & Xingjie Ni

   Light Sci Appl **10**, 235 (2021). DOI: 10.1038/s41377-021-00655-x

2. Deep learning in optical metrology: a review

   Chao Zuo, Jiaming Qian, Shijie Feng, Wei Yin, Yixuan Li, Pengfei Fan, Jing Han, Kemao Qian & Qian Chen

   Light Sci Appl **11**, 39 (2022). DOI: 10.1038/s41377-022-00714-x

3. Compact ultrabroadband light-emitting diodes based on lanthanide-doped lead-free double perovskites

   Shilin Jin, Renfu Li, Hai Huang, Naizhong Jiang, Jidong Lin, Shaoxiong Wang, Yuanhui Zheng, Xueyuan Chen & Daqin Chen

   Light Sci Appl **11**, 52 (2022). DOI: 10.1038/s41377-022-00739-2

4. Chiral carbon dots: synthesis, optical properties, and emerging applications

   Aaron Döring, Elena Ushakova & Andrey L. Rogach

   Light Sci Appl **11**, 75 (2022). DOI: 10.1038/s41377-022-00764-1

5. Enabling robust and hour-level organic long persistent luminescence from carbon dots by covalent fixation

   Kai Jiang, Yuci Wang, Cunjian Lin, Licheng Zheng, Jiaren Du, Yixi Zhuang, Rongjun Xie, Zhongjun Li & Hengwei Lin

   Light Sci Appl **11**, 80 (2022). DOI: 10.1038/s41377-022-00767-y

6. Chip-integrated van der Waals PN heterojunction photodetector with low dark current and high responsivity

   Ruijuan Tian, Xuetao Gan, Chen Li, Xiaoqing Chen, Siqi Hu, Linpeng Gu, Dries Van Thourhout, Andres Castellanos-Gomez, Zhipei Sun & Jianlin Zhao

   Light Sci Appl **11**, 101 (2022). DOI: 10.1038/s41377-022-00784-x

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7. Blue LED-pumped intense short-wave infrared luminescence based on Cr^{3+}-Yb^{3+}-co-doped phosphors

   Yan Zhang, Shihai Miao, Yanjie Liang, Chao Liang, Dongxun Chen, Xihui Shan, Kangning Sun & Xiao-Jun Wang

   Light Sci Appl **11**, 136 (2022). DOI: 10.1038/s41377-022-00816-6

8. Electron-phonon coupling-assisted universal red luminescence of o-phenylenediamine-based carbon dots

   Boyang Wang, Zhihong Wei, Laizhi Sui, Jingkun Yu, Baowei Zhang, Xiaoyong Wang, Shengnan Feng, Haoqiang Song, Xue Yong, Yuxi Tian, Bai Yang & Siyu Lu

   Light Sci Appl **11**, 172 (2022). DOI: 10.1038/s41377-022-00865-x

9. Towards higher-dimensional structured light

   Chao He, Yijie Shen & Andrew Forbes

   Light Sci Appl **11**, 205 (2022). DOI: 10.1038/s41377-022-00897-3

10. Fundamentals and comprehensive insights on pulsed laser synthesis of advanced materials for diverse photo-and electrocatalytic applications

    Jayaraman Theerthagiri, K. Karuppasamy, Seung Jun Lee, R. Shwetharani, Hyun-Seok Kim, S. K. Khadheer Pasha, Muthupandian Ashokkumar & Myong Yong Choi

    Light Sci Appl **11**, 250 (2022). DOI: 10.1038/s41377-022-00904-7

11. Formation and fluorescent mechanism of red emissive carbon dots from *o*-phenylenediamine and catechol system

    Pengfei Li, Shanshan Xue, Lu Sun, Xupeng Zong, Li An, Dan Qu, Xiayan Wang & Zaicheng Sun

    Light Sci Appl **11**, 298 (2022). DOI: 10.1038/s41377-022-00984-5

12. Phase-controlled van der Waals growth of wafer-scale 2D $MoTe_2$ layers for integrated high-sensitivity broadband infrared photodetection

    Di Wu, Chenguang Guo, Longhui Zeng, Xiaoyan Ren, Zhifeng Shi, Long Wen, Qin Chen, Meng Zhang, Xin Jian Li, Chong-Xin Shan & Jiansheng Jie

    Light Sci Appl **12**, 5 (2023). DOI: 10.1038/s41377-022-01047-5