Nano-Micro Fabrication (2022-2025)

Browse in the web

Laser Process

1. **Laser-Induced Nanowire Percolation Interlocking for Ultrarobust Soft Electronics (Article)**
   Yeongju Jung, Kyung Rok Pyun, Sejong Yu, Jiyong Ahn, Jinsol Kim, Jung Jae Park, Min Jae Lee, Byunghong Lee, Daeyeon Won, Junhyuk Bang & Seung Hwan Ko
   Nano-Micro Lett. 17, 127 (2025). https://doi.org/10.1007/s40820-024-01627-7
2. **Green Vertical-Cavity Surface-Emitting Lasers Based on InGaN Quantum Dots and Short Cavity (Article)**
   Tao Yang, Yan-Hui Chen, Ya-Chao Wang, Wei Ou, Lei-Ying Ying, Yang Mei, Ai-Qin Tian, Jian-Ping Liu, Hao-Chung Guo & Bao-Ping Zhang
   Nano-Micro Lett. 15, 223 (2023). https://doi.org/10.1007/s40820-023-01189-0
3. **MOF-Like 3D Graphene-Based Catalytic Membrane Fabricated by One-Step Laser Scribing for Robust Water Purification and Green Energy Production (Article)**
   Xinyu Huang, Liheng Li, Shuaifei Zhao, Lei Tong, Zheng Li, Zhuiri Peng, Runfeng Lin, Li Zhou, Chang Peng, Kan-Hao Xue, Lijuan Chen, Gary J. Cheng, Zhu Xiong & Lei Ye
   Nano-Micro Lett. 14, 174 (2022). https://doi.org/10.1007/s40820-022-00923-4
4. **High-Density Nanowells Formation in Ultrafast Laser-Irradiated Thin Film Metallic Glass (Article)**
   Mathilde Prudent, Djafar Iabbaden, Florent Bourquard, Stéphanie Reynaud, Yaya Lefkir, Alejandro Borroto, Jean-François Pierson, Florence Garrelie & Jean-Philippe Colombier
   Nano-Micro Lett. 14, 103 (2022). https://doi.org/10.1007/s40820-022-00850-4
5. **Femtosecond Laser Thermal Accumulation-Triggered Micro-/Nanostructures with Patternable and Controllable Wettability Towards Liquid Manipulating (Article)**
   Kai Yin, Lingxiao Wang, Qinwen Deng, Qiaoqiao Huang, Jie Jiang, Guoqiang Li & Jun He
   Nano-Micro Lett. 14, 97 (2022). https://doi.org/10.1007/s40820-022-00840-6
6. **Laser-Derived Interfacial Confinement Enables Planar Growth of 2D SnS_2 on Graphene for High-Flux Electron/Ion Bridging in Sodium Storage (Article)**
   Xiaosa Xu, Fei Xu, Xiuhai Zhang, Changzhen Qu, Jinbo Zhang, Yuqian Qiu, Rong Zhuang & Hongqiang Wang
   Nano-Micro Lett. 14, 91 (2022). https://doi.org/10.1007/s40820-022-00829-1
7. **Multi-Bandgap Monolithic Metal Nanowire Percolation Network Sensor Integration by Reversible Selective Laser-Induced Redox (Article)**
   Junhyuk Bang, Yeongju Jung, Hyungjun Kim, Dongkwan Kim, Maenghyo Cho & Seung Hwan Ko
   Nano-Micro Lett. 14, 49 (2022). https://doi.org/10.1007/s40820-021-00786-1

MEMS

1. **Semi-Implantable Bioelectronics (Review)**
   Jiaru Fang, Shuang Huang, Fanmao Liu, Gen He, Xiangling Li, Xinshuo Huang, Hui-jiuan Chen & Xi Xie
   Nano-Micro Lett. 14, 125 (2022). https://doi.org/10.1007/s40820-022-00818-4

3D Print

1. **3D Printing of Tough Hydrogel Scaffolds with Functional Surface Structures for Tissue Regeneration (Article)**
   Ke Yao, Gaoying Hong, Ximin Yuan, Weicheng Kong, Pengcheng Xia, Yuanrong Li, Yuewei Chen, Nian Liu, Jing He, Jue Shi, Zihe Hu, Yanyan Zhou, Zhijian Xie & Yong He
   Nano-Micro Lett. 17, 27 (2025). https://doi.org/10.1007/s40820-024-01524-z
2. **3D Printing of Periodic Porous Metamaterials for Tunable Electromagnetic Shielding Across Broad Frequencies (Article)**
   Qinniu Lv, Zilin Peng, Haoran Pei, Xinxing Zhang, Yinghong Chen, Huarong Zhang, Xu Zhu & Shulong Wu
   Nano-Micro Lett. 16, 279 (2024). https://doi.org/10.1007/s40820-024-01502-5
3. **3D-Printed MOF Monoliths: Fabrication Strategies and Environmental Applications (Review)**
   Hossein Molavi, Kamyar Mirzaei, Mahdi Barjasteh, Seyed Yahya Rahnamaee, Somayeh Saeedi, Aliakbar Hassanpouryouzband & Mashallah Rezakazemi
   Nano-Micro Lett. 16, 272 (2024). https://doi.org/10.1007/s40820-024-01487-1
4. **Challenges and Opportunities in Preserving Key Structural Features of 3D-Printed Metal/Covalent Organic Framework (Review)**
   Ximeng Liu, Dan Zhao & John Wang
   Nano-Micro Lett. 16, 157 (2024). https://doi.org/10.1007/s40820-024-01373-w
5. **3D-Printed Carbon-Based Conformal Electromagnetic Interference Shielding Module for Integrated Electronics (Article)**
   Shaohong Shi, Yuheng Jiang, Hao Ren, Siwen Deng, Jianping Sun, Fangchao Cheng, Jingjing Jing & Yinghong Chen
   Nano-Micro Lett. 16, 85 (2024). https://doi.org/10.1007/s40820-023-01317-w
6. **Engineering Nano/Microscale Chiral Self-Assembly in 3D Printed Constructs (Article)**
   Mohsen Esmaeili, Ehsan Akbari, Kyle George, Gelareh Rezvan, Nader Taheri-Qazvini & Monirosadat Sadati
   Nano-Micro Lett. 16, 54 (2024). https://doi.org/10.1007/s40820-023-01286-0
7. **A Generalized Polymer Precursor Ink Design for 3D Printing of Functional Metal Oxides (Article)**

Hehao Chen, Jizhe Wang, Siying Peng, Dongna Liu, Wei Yan, Xinggang Shang, Boyu Zhang, Yuan Yao, Yue Hui & Nanjia Zhou

Nano-Micro Lett. 15, 180 (2023). https://doi.org/10.1007/s40820-023-01147-w

8. **3D Printed Integrated Gradient-Conductive MXene/CNT/Polyimide Aerogel Frames for Electromagnetic Interference Shielding with Ultra-Low Reflection (Article)**

   Tiantian Xue, Yi Yang, Dingyi Yu, Qamar Wali, Zhenyu Wang, Xuesong Cao, Wei Fan & Tianxi Liu

   Nano-Micro Lett. 15, 45 (2023). https://doi.org/10.1007/s40820-023-01017-5

9. **Digital Light Processing 3D-Printed Ceramic Metamaterials for Electromagnetic Wave Absorption (Article)**

   Rui Zhou, Yansong Wang, Ziyu Liu, Yongqiang Pang, Jianxin Chen & Jie Kong

   Nano-Micro Lett. 14, 122 (2022). https://doi.org/10.1007/s40820-022-00865-x

10. **“Toolbox” for the Processing of Functional Polymer Composites (Review)**

    Yun Wei, Hongju Zhou, Hua Deng, Wenjing Ji, Ke Tian, Zhuyu Ma, Kaiyi Zhang & Qiang Fu

    Nano-Micro Lett. 14, 35 (2022). https://doi.org/10.1007/s40820-021-00774-5

11. **Sorting Gold and Sand (Silica) Using Atomic Force Microscope-Based Dielectrophoresis (Article)**

    Chungman Kim, Sunghoon Hong, Dongha Shin, Sangmin An, Xingcai Zhang & Wonho Jhe

    Nano-Micro Lett. 14, 13 (2022). https://doi.org/10.1007/s40820-021-00760-x

Lithography

1. **Photolithographic Microfabrication of Microbatteries for On-Chip Energy Storag (Review)**

   Yuan Ma, Sen Wang & Zhong-Shuai Wu

   Nano-Micro Lett. 17, 105 (2025). https://doi.org/10.1007/s40820-024-01625-9

2. **Direct Photolithography of WOx Nanoparticles for High-Resolution Non-Emissive Displays (Article)**

   Chang Gu, Guojian Yang, Wenxuan Wang, Aiyan Shi, Wenjuan Fang, Lei Qian, Xiaofei Hu, Ting Zhang, Chaoyu Xiang & Yu-Mo Zhang

   Nano-Micro Lett. 17, 67 (2025). https://doi.org/10.1007/s40820-024-01563-6

3. **Fabrication of High-Density Out-of-Plane Microneedle Arrays with Various Heights and Diverse Cross-Sectional Shapes (Article)**

   Hyeonhee Roh, Young Jun Yoon, Jin Soo Park, Dong-Hyun Kang, Seung Min Kwak, Byung Chul Lee & Maesoon Im

   Nano-Micro Lett. 14, 24 (2022). https://doi.org/10.1007/s40820-021-00778-1

Preparation of Nano-Micro Materials and Devices

1. **Enhanced Conductivity of Multilayer Copper–Carbon Nanofilms via Plasma Immersion Deposition (Article)**

Haotian Weng, Xiwu Zhang, Xuan Liu, Yunhui Tang, Hewei Yuan, Yang Xu, Kun Li & Xiaolu Huang

Nano-Micro Lett. 17, 130 (2025). https://doi.org/10.1007/s40820-024-01628-6

2. **Precision-Engineered Construction of Proton-Conducting Metal–Organic Frameworks (Review)**

Liyu Zhu, Hongbin Yang, Ting Xu, Feng Shen & Chuanling Si

Nano-Micro Lett. 17, 87 (2025). https://doi.org/10.1007/s40820-024-01558-3

3. **Wafer-Scale Ag2S-Based Memristive Crossbar Arrays with Ultra-Low Switching-Energies Reaching Biological Synapses (Article)**

Yuan Zhu, Tomas Nyberg, Leif Nyholm, Daniel Primetzhofer, Xun Shi & Zhen Zhang

Nano-Micro Lett. 17, 69 (2025). https://doi.org/10.1007/s40820-024-01559-2

4. **An Efficient Boron Source Activation Strategy for the Low-Temperature Synthesis of Boron Nitride Nanotubes (Article)**

Ying Wang, Kai Zhang, Liping Ding, Liyun Wu, Songfeng E, Qian He, Nanyang Wang, Hui Zuo, Zhengyang Zhou, Feng Ding, Yue Hu, Jin Zhang & Yagang Yao

Nano-Micro Lett. 17, 25 (2025). https://doi.org/10.1007/s40820-024-01521-2

5. **Synthesis and Modulation of Low-Dimensional Transition Metal Chalcogenide Materials via Atomic Substitution (Review)**

Xuan Wang, Akang Chen, XinLei Wu, Jiatao Zhang, Jichen Dong & Leining Zhang

Nano-Micro Lett. 16, 163 (2024). https://doi.org/10.1007/s40820-024-01378-5

6. **p-Type Two-Dimensional Semiconductors: From Materials Preparation to Electronic Applications (Review)**

Lei Tang & Jingyun Zou

Nano-Micro Lett. 15, 230 (2023). https://doi.org/10.1007/s40820-023-01211-5

7. **Green Fabrication of Freestanding Piezoceramic Films for Energy Harvesting and Virus Detection (Article)**

Shiyuan Liu, Junchen Liao, Xin Huang, Zhuomin Zhang, Weijun Wang, Xuyang Wang, Yao Shan, Pengyu Li, Ying Hong, Zehua Peng, Xuemu Li, Bee Luan Khoo, Johnny C. Ho & Zhengbao Yang

Nano-Micro Lett. 15, 131 (2023). https://doi.org/10.1007/s40820-023-01105-6

8. **Monolayer MoS2 Fabricated by In Situ Construction of Interlayer Electrostatic Repulsion Enables Ultrafast Ion Transport in Lithium-Ion Batteries (Article)**

Meisheng Han, Yongbiao Mu, Jincong Guo, Lei Wei, Lin Zeng & Tianshou Zhao

Nano-Micro Lett. 15, 80 (2023). https://doi.org/10.1007/s40820-023-01042-4

9. **Circularly Polarized Light-Enabled Chiral Nanomaterials: From Fabrication to Application (Review)**

Changlong Hao, Gaoyang Wang, Chen Chen, Jun Xu, Chuanlai Xu, Hua Kuang & Liguang Xu

Nano-Micro Lett. 15, 39 (2023). https://doi.org/10.1007/s40820-022-01005-1

10. **Emerging MoS2 Wafer-Scale Technique for Integrated Circuits (Review)**

Zimeng Ye, Chao Tan, Xiaolei Huang, Yi Ouyang, Lei Yang, Zegao Wang & Mingdong Dong

Nano-Micro Lett. 15, 38 (2023). https://doi.org/10.1007/s40820-022-01010-4

11. **3D Artificial Array Interface Engineering Enabling Dendrite-Free Stable Zn Metal Anode (Article)**

Jianbin Ruan, Dingtao Ma, Kefeng Ouyang, Sicheng Shen, Ming Yang, Yanyi Wang, Jinlai Zhao, Hongwei Mi & Peixin Zhang

Nano-Micro Lett. 15, 37 (2023). https://doi.org/10.1007/s40820-022-01007-z

12. **Graphene Bridge Heterostructure Devices for Negative Differential Transconductance Circuit Applications (Article)**

Minjong Lee, Tae Wook Kim, Chang Yong Park, Kimoon Lee, Takashi Taniguchi, Kenji Watanabe, Min-gu Kim, Do Kyung Hwang & Young Tack Lee

Nano-Micro Lett. 15, 22 (2023). https://doi.org/10.1007/s40820-022-01001-5

13. **Chip-Based High-Dimensional Optical Neural Network (Article)**

Xinyu Wang, Peng Xie, Bohan Chen & Xingcai Zhang

Nano-Micro Lett. 14, 221 (2022). https://doi.org/10.1007/s40820-022-00957-8

14. **From 1D Nanofibers to 3D Nanofibrous Aerogels: A Marvellous Evolution of Electrospun SiO2 Nanofibers for Emerging Applications (Review)**

Cheng Liu, Sai Wang, Ni Wang, Jianyong Yu, Yi-Tao Liu & Bin Ding

Nano-Micro Lett. 14, 194 (2022). https://doi.org/10.1007/s40820-022-00937-y

15. **Growth of Tellurium Nanobelts on h-BN for p-type Transistors with Ultrahigh Hole Mobility (Article)**

Peng Yang, Jiajia Zha, Guoyun Gao, Long Zheng, Haoxin Huang, Yunpeng Xia, Songcen Xu, Tengfei Xiong, Zhuomin Zhang, Zhengbao Yang, Ye Chen, Dong-Keun Ki, Juin J. Liou, Wugang Liao & Chaoliang Tan

Nano-Micro Lett. 14, 109 (2022). https://doi.org/10.1007/s40820-022-00852-2

16. **Fabrication of High-Density Out-of-Plane Microneedle Arrays with Various Heights and Diverse Cross-Sectional Shapes (Article)**

Hyeonhee Roh, Young Jun Yoon, Jin Soo Park, Dong-Hyun Kang, Seung Min Kwak, Byung Chul Lee & Maesoon Im

Nano-Micro Lett. 14, 24 (2022). https://doi.org/10.1007/s40820-021-00778-1

17. **Precise Thermoplastic Processing of Graphene Oxide Layered Solid by Polymer Intercalation (Article)**

Zeshen Li, Fan Guo, Kai Pang, Jiahao Lin, Qiang Gao, Yance Chen, Dan Chang, Ya Wang, Senping Liu, Yi Han, Yingjun Liu, Zhen Xu & Chao Gao

Nano-Micro Lett. 14, 12 (2022). https://doi.org/10.1007/s40820-021-00755-8