**2023年中国发明协会发明创业奖创新奖公示信息**

项目名称：复合纳米纤维薄膜批量制造关键技术及产业化应用

**一、完成人信息**

郑高峰： 厦门大学

李文望： 厦门理工学院

朱自明： 佛山轻子精密测控技术有限公司

姜佳昕： 厦门理工学院

王 翔： 厦门理工学院

邵尊桂： 厦门大学

**二、完成单位信息**

厦门大学、厦门理工学院、佛山轻子精密测控技术有限公司

**三、主要专利信息**

1. **郑高峰，邵尊桂**，肖钰洁，康国毅，陈华坛，**姜佳昕**，刘益芳，一种绒毛纳米纤维抗菌高效低阻空气过滤膜的制备方法，发明专利，2022.08.19，中国，ZL 202210548584.0
2. **郑高峰，姜佳昕，**庄明凤，郑建毅，柳娟，刘益芳，一种可快速多针尖定位的静电纺丝喷头，发明专利，2020.08.18，中国，ZL 201811314130.7
3. **郑高峰，姜佳昕，**柳娟，赵扬，一种耐高温复合纳米纤维过滤膜制备方法，发明专利，2020.05.29，中国，ZL 201711493588.9
4. **郑高峰，姜佳昕**，庄明凤，郑建毅，柳娟，刘益芳，一种带有鞘气约束的弧形阵列静电纺丝喷头，发明专利，2019.12.27，中国，ZL 201811315128.1
5. **李文望，王翔**，颜春华，罗志伟，静电纺丝装置及其静电纺丝方法，发明专利， 2017.08.11，中国， ZL 201510555301.5
6. **王翔，李文望，郑高峰**，一种三维立体纤维膜的制备方法，发明专利，2020.03.06，中国，ZL 201810177729.4
7. **王翔，李文望**，一种全喷印多喷嘴喷头的制备方法，发明专利，2019.02.22，中国， ZL 201610808320.9
8. **朱自明**，黄泽峰，梅晨，温尊伟，王新力，一种圆柱面螺旋线阵列分布方式的静电纺丝喷嘴，发明专利，2016.6.27，中国，ZL 201610498709.8
9. **朱自明**，黄泽峰，夏远祥，温尊伟，梅晨，黄深能，江传玉，黄冠成，王圣，王新力，一种带尖齿的直线型电极静电纺丝装置，发明专利，2015.10.10，中国，ZL 201510652865.0
10. **朱自明，**黄泽峰，夏远祥，梅晨，黄深能，江传玉，黄冠成，王圣，王新力，一种尖齿笼状电极静电纺丝装置，发明专利，2017.9.26，中国，ZL 201510763768.9

**四、主要论文信息**

1. **Zungui Shao**, Ying Chen, **Jiaxin Jiang**, Yujie Xiao, Guoyi Kang, **Xiang Wang, Wenwang Li**, **Gaofeng Zheng**\*. Multistage–Split Ultrafine Fluffy Nanofibrous Membrane for High–Efficiency Antibacterial Air Filtration [J]. ACS Applied Materials & Interfaces, 2022, 14(16): 18989–19001
2. **Gaofeng Zheng\***, **Jiaxin Jiang**, **Xiang Wang**, **Wenwang Li**, Juan Liu, Gang Fu, Liwei Lin\*. Nanofiber membranes by multi-jet electrospinning arranged as arc-array with sheath gas for electrodialysis applications [J]. Materials & Design, 2020, 189: 108504.
3. **Gaofeng Zheng\***, **Zungui Shao**, Junyu Chen, **Jiaxin Jiang**, Ping Zhu, **Xiang Wang**, **Wenwang Li**, Yifang Liu\*. Self-Supporting Three-dimensional Electrospun Nanofibrous Membrane for Highly Efficient Air Filtration [J]. Nanomaterials, 2021, 11: 2567.
4. J**iaxin Jiang, Zungui Shao, Xiang Wang**, Ping Zhu, Shiqing Deng, **Wenwang Li,** **Gaofeng Zheng**\*. Three-dimensional composite electrospun nanofibrous membrane by multi-jet electrospinning with sheath gas for high-efficiency antibiosis air filtration [J]. Nanotechnology, 2021, 32: 245707.
5. **Zungui Shao,** Guoyi Kang, Huatan Chen, **Jiaxin Jiang, Xiang Wang, Wenwang Li**, Yifang Liu, **Gaofeng Zheng**\*. Preparation, Characterization, and Air Filtration Property of Electrospun Bimodal Fibrous Membrane Based on Low Conductivity Blended Polymers Solution [J]. Materials Today Communications, 2022, 34: 105014.
6. . **Xiang Wan**g, Jiahui Zhang, J**iaxin Jiang**, **Gaofeng Zheng**\*, **Wenwang Li**\*. Preparation of bead-like PAN/ZIF-8 nanofiber membrane for methyl blue adsorption by one-step electrospinning [J]. Materials Letters, 2023, 338: 134057.
7. **Gaofeng Zheng**\*, **Jiaxin Jiang**, **Xiang Wang,** **Wenwang Li**, Weizheng Zhong, Shumin Guo. Self-cleaning threaded rod spinneret for high-efficiency needleless electrospinning [J]. Applied Physics A: Materials Science and Processing, 2018, 124(6): 473.
8. **Gaofeng Zheng\***, Jiaxin Jiang, Dongyang Chen, Juan Liu, Yifang Liu, Jianyi Zheng, Xiang Wang, Wenwang Li. Multinozzle high efficiency electrospinning with the constraint of sheath gas [J]. Journal of Applied Polymer Science, 2019, 136: 47574.
9. **Ziming Zhu**, **Gaofeng Zheng**\*, Rongguang Zhang, Guojie Xu, Jun Zeng, Rui Guo, Xue Wei, Han Wang. Nanofibrous membrane through multi-needle electrospinning with multi-physical field coupling [J]. Materials Research Express. 2021, 8: 075012.
10. **郑高峰**，**姜佳昕**，邓世卿，陈隽毓，刘益芳\*. 纳米纤维膜三维重构与过滤行为分析系统 [J]. 光学精密工程, 2022, 30(9): 1071-1079.