

## 个人简介:

姓名: 阮艳莉                      出生年月: 1977.3  
技术职务: 教授                      专业及学历: 应用化学 博士  
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## 工作及教育经历:

2018/11-至今              天津工业大学化学工程与技术学院, 副院长, 教授, 博导  
2016/08-2017/08          美国劳伦斯伯克利国家实验室, 访问学者  
2008/12-2018/12          天津工业大学环境化工学院, 副教授, 硕士生导师  
2006/03-2008/12          天津工业大学材料化工学院, 讲师  
2003/02-2006/03          天津大学化工学院, 博士

## 研究方向:

### 1. 新能源材料与器件

具体包括锂、钠离子电池; 锂硫电池; 金属空气电池等体系新材料的设计、开发、合成及性能研究。

### 2. 功能膜材料

具体包括有机无机复合隔膜、固体电解质膜材料的制备及其催化及电化学性能研究。

### 3. 微/纳材料电催化

二维结构、MOF 等微纳尺度材料的电催化性能研究。

## 荣誉称号:

天津工业大学优秀教师

## 获奖与社会兼职:

1. 中国纺织工业协会科学技术进步二等奖;
2. 天津市青年教师基本功竞赛二等奖;
3. 天津工业大学优秀教学质量二等奖。

## 主持的科研项目：

1. 国家自然科学基金项目“基于三维大孔复合NASICON快离子导体的全固态钠离子对称电池的构筑及反应机制研究”，主持，完成
2. 天津市自然科学基金项目“三维固体电解质膜的构筑及钠离子输运机制研究”，主持，在研
2. 天津市科学技术委员会项目“高选择性太阳能吸收复合涂层的制备及性能研究”，主持，完成
3. 天津市教育委员会项目“燃料用冰磨助剂的剖析与合成研究”，主持，完成
4. 天津市高等学校科技发展基金项目“橄榄石型  $\text{LiFePO}_4$ 的合成及电化学性能研究”，主持，完成
5. 天津金创达科技发展有限公司“RO反渗透系统设计及构建”，主持，在研
6. 天津市城建学院“城市污水厂污泥脱水及再生水厂浓盐水脱盐研究”，主持，完成
7. 天津金大地能源工程技术有限公司项目“非清洁水换热装置的研究与开发”，主持，完成

## 代表性学术论文：

1. **Yanli Ruan\***, Xiangyun Song, Yanbao Fu, Chengyu Song, Vincent Battaglia\*, Structural evolution and capacity degradation mechanism of  $\text{LiNi}_{0.6}\text{Mn}_{0.2}\text{Co}_{0.2}\text{O}_2$  cathode materials, *Journal of Power Sources*, 400 (2018) 539-548
2. Shidong Song\*, Xuhui Qin, **Yanli Ruan\***, Wanjun Li, Yongqiang Xu, Dequan Zhang, Joykumar Thokchom\*, Enhanced performance of solid-state lithium-air batteries with continuous 3D garnet network added composite polymer electrolyte, *Journal of Power Sources*, 461 (2020) 228146
3. **Yanli Ruan\***, Jian Sun, Shidong Song\*, Limei Yu, Butian Chen, Wanjun Li, Xuhui Qin, A perfluorocarbon silicone oil oxygen selective membrane for ambient operation of aprotic Li-air batteries, *Electrochem. Commun.*, 96 (2018) 93-97
4. Shidong Song\*, Dequan Zhang, **Yanli Ruan\***, Limei Yu, Yongqiang Xu, Joykumar Thokchom, Donghai Mei\*, Quasi-solid-state Li-O<sub>2</sub> batteries performance enhancement using an integrated composite polymer-based architecture, *ACS Applied Energy Materials*, 4 (2021) 6221-6232.

5. **Yanli Ruan\***, Fang Guo, Jingjing Liu, Shidong Song, Ningyi Jiang, Bowen Cheng, Optimization of  $\text{Na}_3\text{Zr}_2\text{Si}_2\text{PO}_{12}$  ceramic electrolyte and interface for high performance solid-state sodium battery, *Ceramics International*, 2019, 45, 1770-1776
6. **Yanli Ruan**, Limei Yu, Shidong Song\*, Xuhui Qin, Sun Jian, Wanjun Li, Butian Chen, Ambient lithium-air battery enabled by a versatile oxygen electrode based on boron carbide supported ruthenium, *International Journal of Hydrogen Energy*, 2019, 44, 31153-31159.
7. **Yanli Ruan\***, Shidong Song, Jingjing Liu, Ping Liu, Bowen Cheng, Xiangyun Song, Vincent Battaglia, Improved structural stability and ionic conductivity of  $\text{Na}_3\text{Zr}_2\text{Si}_2\text{PO}_{12}$  solid electrolyte by rare earth metal substitutions, *Ceramics International*, 43 (2017) 7810-7815
8. Shidong Song\*, Yongqiang Xu, **Yanli Ruan\***, Hong Wang, Dequan Zhang, Joykumar Thokchom, Donghai Mei\*, Isomeric Li-La-Zr-O amorphous-crystalline composite thin-film electrolytes for all-solid-state lithium batteries, *ACS Applied Energy Materials*, 4 (2021) 8517-8528.
9. **Yanli Ruan\***, Kun Wang, Shidong Song, Xu Han, Bo-Wen Cheng, Graphene modified sodium vanadium fluorophosphate as a high voltage cathode material for sodium ion batteries, *Electrochimica Acta*, 160 (2015) 330-336
10. Shidong Song\*, Limei Yu, **Yanli Ruan\***, Jian Sun, Butian Chen, Wu Xu, Jiguang Zhang Highly efficient Ru/B<sub>4</sub>C multifunctional oxygen electrode for rechargeable Li-O<sub>2</sub> battery, *Journal of Power Sources*, 413 (2019) 11-194.
11. Shidong Song\*, Butian Chen, **Yanli Ruan\***, Jian Sun, Limei Yu, Yan Wang, Joykumar Thokchom, Gd-doped  $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$  garnet-type solid electrolytes for all-solid state Li-Ion batteries, *Electrochimica Acta*, 270 (2018) 501-5084.
12. Shidong Song\*, Yiwei He, **Yanli Ruan\***, Ningyi Jiang, Bowen Cheng, Loofah sponge as a high-loading 3D carbon matrix for lithium-sulfur batteries, *Materials Letters*, 247 (2019) 86-89
13. **Yanli Ruan\***, Jingjing Liu, Shidong Song, Ningyi Jiang, Vincent Battaglia, Multi-hierarchical nanosheet-assembled chrysanthemum-structured  $\text{Na}_3\text{V}_2(\text{PO}_4)_3/\text{C}$  as electrode materials for high-performance sodium-ion batteries, *Ionics* 24 (2018) 1663-1673.
14. Shidong Song\*, Wanjun Li, **Yanli Ruan\***, Xuhui Qin, Dequan Zhang, Yongqiang Xu, TiC-modified  $\alpha\text{-MnO}_2$  nanowires as highly efficient oxygen electrocatalyst for

rechargeable Zn-air batteries, *Journal of Alloys and Compounds*, 834 (2020) 155090.

15. **Yanli Ruan\***, Kun Wang, Shidong Song, Jingjing Liu, Xu Han, Improved structural stability and electrochemical performance of  $\text{Na}_3\text{V}_2(\text{PO}_4)_3$  cathode material by Cr doping, *Ionics* 23 (2017) 1097-1105.
16. **Yanli Ruan\***, Kun Wang, Pingping Qi, In suit polymerization of PANI/GO and its electrochemical performance, *Journal of Functional Materials*, 46 (2015) 02100-02104.