

## 王彪-物理系主任 副教授

姓名： 王彪

学位职称： 博士/副教授

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主讲课程： 固体物理， 大学物理

科研方向： 固体氧化物电池电极和电解质材料的设计和  
优化



### 教育工作简历：

2000.09-2004.07， 鞍山师范学院 物理学 本科

2004.09-2007.07， 吉林大学 凝聚态物理 硕士研究生

2012.09-2017.07， 吉林大学 凝聚态物理 博士研究生

### 工作经历

2007.07-2009.07 辽宁科技大学 助教

2009.07-2020.10 辽宁科技大学 讲师

2020.11-至今 辽宁科技大学 副教授

### 学术成果：

#### 【获奖】

2020年，2021年辽宁省大学生物理竞赛优秀指导教师

#### 【代表性学术著作、论文】

1. Biao Wang, Yuan Ji\*, et al. Layered perovskite  $\text{PrBa}_{0.5}\text{Sr}_{0.5}\text{CoCuO}_{5+\delta}$  as a cathode for intermediate temperature solid oxide fuel cells, *Journal of alloys and compounds*, 606 (2014) 92-96.
2. Biao Wang, Yuan Ji\*, et al. Characterization of  $\text{SmBa}_{0.5}\text{Sr}_{0.5}\text{CoCuO}_{5+\delta}$  cathode based on LSGM and GDC electrolyte for intermediate temperature solid oxide fuel cells, *International Journal of hydrogen energy*, 41(31), 2016, 13603-13610
3. Biao Wang, Yuan Ji\*, et al. Synthesis and characterization of  $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.1}\text{Ni}_{0.1}\text{O}_{3-\delta}$  cathode for intermediate temperature solid oxide fuel cells, *International Journal of hydrogen energy*, 43 (13) 2018,6677-6685.
4. Biao Wang, Yuan Ji\*, et al. Layered perovskite  $\text{GdBa}_{0.5}\text{Sr}_{0.5}\text{CoCuO}_{5+\delta}$  as a cathode for

- intermediate temperature solid oxide fuel cells. *Material research innovations*, 2014, 1-4
5. Biao Wang\*, Yuan Ji\*, et al. Optimization electrochemical performance and thermal compatibility via  $\text{SmBa}_{0.5}\text{Sr}_{0.5}\text{CoCuO}_{5+\delta}$  and  $\text{Ce}_{0.9}\text{Gd}_{0.1}\text{O}_{1.95}$  composite cathodes for intermediate-temperature solid oxide fuel cells. *Journal of materials science-materials in electronics*, 31(17),2020,14614-14624.
  6. Jie Kang, Biao Wang\* Bingbing Niu\*, et al. Structure and performance of Pr, Sm, Y co-doped cerium-based electrolyte for intermediate temperature solid oxide fuel cells, *Materials Letters* 305 (2021) 130855.
  7. Jie Kang, Wenqiang Feng, Biao Wang\* Bingbing Niu, et al. Performance optimization of Ca and Y co-doped  $\text{CeO}_2$ -based electrolyte for intermediate-temperature solid oxide fuel cells,*Journal of alloys and compounds*,913,2022,165317
  8. Chengyi Wen<sup>1</sup>, Kai Chen<sup>1</sup>, Biao Wang, Bingbing Niu, High performance and stability of  $\text{PrBa}_{0.5}\text{Sr}_{0.5}\text{Fe}_2\text{O}_{5+\delta}$  symmetrical electrode for intermediate temperature solid oxide fuel cells, *Solid State Ionics*, 2022,
  9. Dong Guo , Chengyi Wen , Chunling Lu , Wenqiang Feng , Henan Wu , Shoushan Gao , Bingbing Niu \* , Biao Wang \* Preparation and characterization of highly active and stable  $\text{NdBaCo}_{0.8}\text{Fe}_{0.8}\text{Ni}_{0.4}\text{O}_{5+\delta}$  oxygen electrode for solid oxide fuel cells. *Electrochimica Acta*, 439(2023)114061.
  - 10.High activity and stability of cobalt-free  $\text{SmBa}_{0.5}\text{Sr}_{0.5}\text{Fe}_2\text{O}_{5+\delta}$  perovskite oxide as positive material for solid oxide fuel cells. *Ceramics International*, 49(2023)34277-34290
  11. Perovskite  $\text{SrCo}_{0.5}\text{Fe}_{0.25}\text{Cu}_{0.2}\text{Nb}_{0.05}\text{O}_{3-\delta}$  cathode for intermediate-temperature solid oxide fuel cells: Improved working stability and  $\text{CO}_2$  tolerance. *Solid State Ionics*, 400(2023)116341.

### 【主要科研项目】

1. 中低温固体氧化物燃料电池阴极性能与氧催化机理的研究，辽宁省科技厅，2018.06–2020.05，No. 20180550661，5万元，主持，结题。
2. 中低温固体氧化物燃料电池  $\text{CeO}_2$ 基电解质性能优化的研究，辽宁省教育厅，2021.06–2023.05，No. LJKZ0296，5万元，主持，在研。
3. 固体氧化物燃料电池阴极性能与器件组装优化的研究，辽宁科技大学校级创新团队，2018.11–2021.10，No. 2018TD，6万元，主持，结题。