



孙泽

所属学院 资源与环境工程学院

学科领域 环境科学与工程、化学工程与技术

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个人简介

2012.09- 今：副教授，资源与环境工程学院，硕导、博导

2018.08- 今：资源与环境工程学院，资源工程系主任

2009.06-2012.8：讲师，资源与环境工程学院

2016.12-2017.12：青海盐湖工业股份有限公司，研发中心副主任

2016.02-2016.03：国际合作交流，University of Birmingham, University of Nottingham 等

2012.11-2013.11：访问学者，University of Leeds, UK

教学情况：

本科生课程：工程流体力学（上海市重点课程）

学术兼职：

中国无机盐协会熔盐储能专业委员会 副秘书长

中国有色金属学会熔盐化学与技术专业委员会 委员

海西州环境科学研究所 客座教授

研究方向

1. 太阳能清洁能源利用，熔盐储能储热

2. 化工过程数值模拟研究，多物理场耦合数值分析

研究成果及主要发表文章

科技获奖：

2019 年，中国有色金属工业科学技术进步一等奖，“高比能电池专用金属锂负极及核心原料成套制备技术与产业化”

2011 年，国家科学技术进步二等奖，“盐湖钾镁资源高效与可持续开发利用关键技术”

2010 年，上海市科学技术进步一等奖，“西部盐湖钾镁资源高效利用关键工程技术与装备”

2013 年，上海市技术发明三等奖，“工业氯化钾多相流分离新技术与装备研究”

其他荣誉：

2019 年，上海市教卫党委“优秀共产党员”

2019 年，华东理工大学“优秀研究生指导教师”

2018 年，华东理工大学第四届青年英才校长奖

2018 年，华东理工大学 2016-2018 学年“优秀共产党员”

2017 年，青海省第十二批自然科学与工程学科带头人

2017 年，华东理工大学第三届“校园新星”- 科研新星

2017 年，来青服务优秀博士（青海省委组织部、共青团青海省委）

2015 年，资环学院“优秀青年教师”

2011 年，华东理工大学优秀博士论文

承担课题：

(1) 国家重点研发计划课题，360 万，主持，在研

(2) 国家自然科学基金，60 万，主持，在研

(3) 国家自然科学基金，60 万，主持，结题

(4) 国家自然科学基金，25 万，主持，结题

(5) 教育部博士学科点专项科研基金，4 万，主持，结题

(6) 国家“863”项目子课题，35 万，主持，结题

(7) 中央高效基本科研业务费，12 万，主持，结题

(8) 国家“863”项目子课题，160 万，主持，结题

代表性论文：

1. Haiou Ni, Jie Wu, Ze Sun*, Guimin Lu*, Jianguo Yu. Insight into the viscosity enhancement ability of $\text{Ca}(\text{NO}_3)_2$ on the binary molten nitrate salt: A molecular dynamics simulation study. Chemical Engineering Journal. Just accepted. doi.org/10.1016/j.cej.2018.09.190

2. Haiou Ni, Jie Wu, Ze Sun*, Guimin Lu*, Jianguo Yu. Molecular simulation of the structure and physical properties of alkali nitrate salts for thermal energy storage. Renewable Energy 2019, 136: 955-967

3. Hang Chen, Ze Sun*, Xingfu Song, and Jianguo Yu*. Equilibrium Characteristics of KH_2PO_4 Production by Liquid, Liquid Extraction with a Trialkyl Amine-Based Solvent Mixture: A Case Study. Journal of Chemical & Engineering Data. 2018, 63: 4024-4031

4. Ze Sun*, Chongjing Hu, Haiou Ni, Guimin Lu, Xingfu Song, Jianguo Yu*. Influence of Impurity SO_4^{2-} on the Thermal Performance of Molten Nitrates used for Thermal Energy Storage. Energy Technology. 2018, 6(10): 2065-2073

5. Ze Sun*, Liwei Cai, Haiou Ni, Guimin Lu, Xingfu Song, Jianguo Yu*. Investigation of the local structures and transport properties of quaternary molten alkali chloride systems by MD simulations for liquid metal batteries. Journal of Applied Electrochemistry. 2018, 48:1175-1187

6. Ze Sun*, Liwei Cai, Haiou Ni, Gui-Min Lu and Jian-Guo Yu. Coupled electro-thermal field in a high current electrolysis cell or liquid metal batteries. Royal Society Open Science.2018, 5: 171309

7. Ze Sun*, Liwei Cai, Chenglin Liu, Guimin Lu and Jianguo Yu*. Analysis for Effects of Electrolyte Level on Energy Consumption in Magnesium Electrolysis by Finite Element Method. The Canadian Journal of Chemical Engineering. 2017,95(4): 648-655

8. Ze Sun*, Chongjing Hu, Chenglin Liu, Guimin Lu and Jianguo Yu*. Optimization of Mixing Parameters for a Cold Model System by CFD for Aluminum Matrix Composites Synthesis process. The Canadian Journal of Chemical Engineering. 2017, 95(3):467-474

9. Hang Chen, Ze Sun*, Xingfu Song and Jianguo Yu*. Operating Regimes and Hydrodynamics of a Rotating-Disc Contactor. Chemical Engineering & Technology. 2017, 40(3): 498-505

10. Ze Sun*, Jia Wang, Wei Du, Guimin Lu, Ping Li, Xingfu Song and Jianguo Yu. Density functional theory study on the thermodynamics and mechanism of carbon dioxide capture by CaO and CaO regeneration. RSC Advances. 2016,6: 39460-39468

11. Hang Chen, Ze Sun*, Xingfu Song, Jianguo Yu*. A pseudo-3D model with 3D accuracy and 2D cost for the CFD-PBM simulation of a pilot-scale rotating disc contactor. Chemical Engineering Science. 2016, 139: 27-40

12. Hang Chen, Ze Sun*, Xingfu Song, and Jianguo Yu*. Efficient Extraction of Phosphoric Acid with a Trialkyl Amine-Based Solvent Mixture. Journal of Chemical & Engineering Data. 2016, 61 (1): 438-443

13. Ze Sun*, Chenglin Liu, Guimin Lu, Xingfu Song, Jianguo Yu. Effects of operational and structural parameters on cell voltage of industrial magnesium electrolysis cells. Frontiers of Chemical Science and Engineering. 2015, 9(4): 522-531

14. Ze Sun*, Haiou Ni, Hang Chen, Suzhen Li, Guimin Lu and Jianguo Yu. Designing and optimizing a stirring system for a cold model of lithium electrolysis cell based on CFD simulations and optical experiments. RSC Advances, 2015, 5, 84503 - 84516

15. Jia Wang, Jie Wu, Ze Sun*, Guimin Lu*, Jianguo Yu. Molecular dynamics study of the transport properties and local structures of molten binary systems $(\text{Li}, \text{Na})\text{Cl}$, $(\text{Li}, \text{K})\text{Cl}$ and $(\text{Na}, \text{K})\text{Cl}$. Journal of Molecular Liquids. 2015, 209: 498-507

16. Zhen Liu, Ze Sun* and Jian-Guo Yu*. Investigation of dodecylammonium adsorption on mica, albite and quartz surfaces by QM/MM simulation. Molecular Physics. 2015, 113(22): 3423-3430

17. Chenglin Liu, Ze Sun*, Guimin Lu, Xingfu Song, Jianguo Yu*. 3D and 2D experimental views on the flow field of gas-evolving electrode cold model for electrolysis magnesium. Flow Measurement and Instrumentation. 2015, 45: 415-420

18. Cheng-Lin Liu, Ze Sun*, Gui-Min Lu, Xing-Fu Song, and Jian-Guo Yu*. Experimental and numerical investigation of two-phase flow patterns in magnesium electrolysis cell with non-uniform current density distribution. The Canadian Journal of Chemical Engineering. 2015, 93(3): 565-579

19. Hang Chen, Ze Sun*, Xingfu Song, and Jianguo Yu*. Key parameters prediction and validation for a pilot-scale rotating disc contactor by CFD-PBM simulation. Industrial & Engineering Chemistry Research.2014, 53 (51), pp 20013-20023

20. Jia Wang, Ze Sun*, Guimin Lu*, and Jianguo Yu. Molecular Dynamics Simulations of the Local Structures and Transport Coefficients of Molten Alkali Chlorides. Journal of Physical Chemistry B. 2014, 118, 10196-10206

21. Chenglin Liu, Ze Sun*, Guimin Lu, Xingfu Song, Yulong Ding and Jianguo Yu. Scale-up design of a 300 kA magnesium electrolysis cell based on thermo-electric mathematical models. The Canadian Journal of Chemical Engineering. 2014, 92(7):1197-1206

授权专利：

1. 一种大电流无隔板镁电解槽 . 发明专利 . ZL 2012 1 0006071.3

2. 适合于含固体萃取操作的改进型转盘塔内构件 . 发明专利 . ZL 2014 1 0852325.2

3. 一种高电流效率双集镁室的镁电解槽 . 发明专利 . ZL 2014 1 0270112.9

4. 一种短流程高密度低电阻块状石墨阳极的制备方法 . 发明专利 . ZL 2010 1 0224181.8

5. 一种新型生产低电阻高密度石墨材料的添加剂 . 发明专利 . ZL 2011 1 0001977.1

6. 一种氯化钾生产工艺中的高效环保型旋流器 . 发明专利 . ZL 2013 2 0206558.6