

Jin Zhang

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Affiliations:

1. School of Mechanical and Electrical Engineering, Suqian University, Suqian 223800, China
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Education:

2022.01-now School of mechanical and electrical engineering, Suqian University, Lecturer
2017.09-2022.01: Northeast University, Iron and steel metallurgy, PHD
2009.09-2011.07: Northeast University, Material processing engineering, Master
2005.09-2009.07: Northeast University, Material forming and control engineering, Bachelor

Research Interests:

- Process metallurgy
- Welding metallurgy
- Chemical composition control
- Chemical thermodynamic modeling
- Thermodynamics and kinetics of reactions
- High-temperature thermophysical properties of flux or slag
- High-temperature materials processing optimization for energy and environment
- Computer coupling of phase diagrams and thermochemistry

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- National Natural Science Foundation of China (No. 50474085)
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Representative papers:

1. **Zhang, J.**; Wang, C.; Coetsee, T. Assessment of Weld Metal Compositional Prediction Models Geared Towards Submerged Arc Welding: Case Studies Involving $\text{CaF}_2\text{-SiO}_2\text{-MnO}$ and $\text{CaO-SiO}_2\text{-MnO}$ Fluxes. *Metallurgical and Materials Transactions B* **2021**, *52*, 2404-2415. (JCR Q2)
2. Zhang, D.; **Zhang, J.***; Yang, S.; Shao, G.; Liu, Z. Element Transfer Behavior for $\text{CaF}_2\text{-Na}_2\text{O-SiO}_2$ Agglomerated Flux Subject in Submerged Arc Welding Process. *Processes* **2022**, *10*, 1847. (JCR Q2)
3. **Zhang, J.**; Coetsee, T.; Wang, C. Element Transfer Behaviors of Fused $\text{CaF}_2\text{-SiO}_2$ Fluxes Subject to High Heat Input Submerged Arc Welding. *Metallurgical and Materials Transactions B* **2020**, *51*, 16-21. (JCR Q2)
4. **Zhang, J.**; Coetsee, T.; Dong, H.; Wang, C. Element Transfer Behaviors of Fused $\text{CaF}_2\text{-SiO}_2\text{-MnO}$ Fluxes Under High Heat Input Submerged Arc Welding. *Metallurgical and Materials Transactions B* **2020**, *51*, 885-890. (JCR Q2)
5. **Zhang, J.**; Coetsee, T.; Dong, H.; Wang, C. Element Transfer Behaviors of Fused $\text{CaF}_2\text{-TiO}_2$ Fluxes in EH36 Shipbuilding Steel During High Heat Input Submerged Arc Welding. *Metallurgical and Materials Transactions B* **2020**, *51*, 1953-195. (JCR Q2)
6. **Zhang, J.**; Coetsee, T.; Dong, H.; Wang, C. Elucidating the Roles of SiO_2 and MnO upon Decarburization During Submerged Arc Welding: A Thermodynamic Study into EH36

- Shipbuilding Steel. *Metallurgical and Materials Transactions B* **2020**, *51*, 1805-1812. (JCR Q2)
7. Shao, G.; Liu, Z.; Fan, J.; Guo, Y.; Xu, Q.; **Zhang, J.***. Evaluation of Flux Basicity Concept Geared toward Estimation for Oxygen Content in Submerged Arc Welded Metal. *Metals* **2022**, *12*, 1530. (JCR Q2)
 8. **Zhang, J.**; Shao, G.; Guo, Y.; Xu, Q.; Liu, Z. Facilitating flux design process geared towards submerged arc welding via thermodynamic approach: Case study into CaF₂-SiO₂-Na₂O-Al₂O₃-TiO₂ agglomerated flux. *Calphad* **2022**, *79*, 102483. (JCR Q2)
 9. **Zhang, J.**; Coetsee, T.; Dong, H.; Wang, C. Fine-Tuned Element Transfer Strategies for Ternary CaF₂-SiO₂-CaO Fluxes in Submerged Arc Welding: An Environmentally Friendly Approach. *Metallurgical and Materials Transactions B* **2020**, *51*, 1350-1354. (JCR Q2)
 10. **Zhang, J.**; Coetsee, T.; Basu, S.; Wang, C. Impact of gas formation on the transfer of Ti and O from TiO₂-bearing basic-fluoride fluxes to submerged arc welded metals: A thermodynamic approach. *Calphad* **2020**, *71*, 102195. (JCR Q2)
 11. Zhang, D.; Shao, G.; **Zhang, J.***; Liu, Z. On the Moving of Neutral Point for Mn Subject to Submerged Arc Welding under Various Heat Inputs: Case Study into CaF₂-SiO₂-Na₂O-MnO Agglomerated Fluxes. *Processes* **2022**, *10*, 1888. (JCR Q2)
 12. **Zhang, J.**; Peng, L.; Zhou, L.; Chen, Y. On the Si content prediction for submerged arc welded metal via Calphad technique: a brief discussion. *Journal of Materials Research and Technology* **2022**, *21*, 1856-1862. (JCR Q1)
 13. **Zhang, J.**; Xu, Q. Probing Element Transfer Behavior during the Submerged Arc Welding Process for CaF₂-SiO₂-Na₂O-Cr₂O₃ Agglomerated Fluxes: A Thermodynamic Approach. *Processes* **2022**, *10*, 1900. (JCR Q2)
 14. **Zhang, J.**; Wang, C.; Coetsee, T. Thermodynamic Evaluation of Element Transfer Behaviors for Fused CaO-SiO₂-MnO Fluxes Subjected to High Heat Input Submerged Arc Welding. *Metallurgical and Materials Transactions B* **2021**, *52*, 1937-1944. (JCR Q2)
 15. **Zhang, J.**; Leng, J.; Wang, C. Tuning Weld Metal Mechanical Responses via Welding Flux Optimization of TiO₂ Content: Application into EH36 Shipbuilding Steel. *Metallurgical and Materials Transactions B* **2019**, *50*, 2083-2087. (JCR Q2)
 16. **Zhang, J.**; Wang, L. Upgrading the prediction model for Mn content in submerged arc welded metal via CALPHAD technology: Case study into typical acidic and basic fluxes. *Ceramics International* **2022**. (JCR Q1)
 17. **Zhang, J.**; Shao, G.; Fan, J.; Wang, L.; Zhang, D. A Review on Parallel Development of Flux Design and Thermodynamics Subject to Submerged Arc Welding. *Processes* **2022**, *10*, 2305. (JCR Q2)