

Carolyn Fink
Assistant Professor, Welding Engineering Program
Department of Materials Science and Engineering, The Ohio State University
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Education and Training

Otto-von-Guericke University	Magdeburg, Germany	Mechanical Engineering/ Business Administration	Diploma, 2009
Otto-von-Guericke University	Magdeburg, Germany	Mechanical Engineering/ Welding Engineering	Dr.-Ing., 2016 (equiv. Ph.D.)
The Ohio State University	Columbus (OH), USA	Welding Engineering	Postdoc, 2015-2016

Research and Professional Experience

Assistant Professor Welding Engineering Program Dept. of Materials Science and Engineering The Ohio State University, Columbus (OH), USA	01/2017- present
Postdoctoral Research Associate Dept. of Materials Science and Engineering The Ohio State University, Columbus (OH), USA, Advisor: John C. Lippold	08/2015 - 12/2016
Graduate Research Associate Institute of Materials and Joining Technology, Otto-von-Guericke University Magdeburg, Germany	04/2010 - 06/2015

Professional Expertise and Research Interests

Welding metallurgy and weldability of metallic alloys
Weld degradation, cracking phenomena and weld defect formation
Rapid solidification and non-equilibrium microstructural evolution in dissimilar materials joining and additive manufacturing
Computational materials modeling of weld metal and heat affected zone microstructures

Professional Service

American Welding Society (AWS) Member of the Technical Paper Committee (TPC)	2019 - present
<i>Welding in the World Journal</i> Editorial Board Member and Principal Reviewer	2013 - present
International Institute of Welding (IIW) Observer and (Vice-)Delegate in Commission II and IX	2011 - 2016

Awards

Henry Granjon Award, Category B: Materials Behavior and Weldability International Institute of Welding (IIW)	2016
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Publications (selected)

1. A. C. Martin, J. P. Oliveira and **C. Fink**, *Elemental Effects on Weld Cracking Susceptibility in $Al_xCoCrCu_yFeNi$ High Entropy Alloy*, Metallurgical and Materials Transactions A, 51 (2), pp. 778-787, 2020. <https://doi.org/10.1007/s11661-019-05564-8>
2. Y. Lu, D. Sage, **C. Fink** and W. Zhang, *Dissimilar Metal Joining of Aluminium to Zinc-Coated Steel by Ultrasonic plus Resistance Spot Welding - Microstructure and Mechanical Properties*, Science and Technology of Welding and Joining, 2019. <https://doi.org/10.1080/13621718.2019.1667051>
3. A. C. Martin and **C. Fink**, *Initial Weldability Study on $Al_{0.5}CrCoCu_{0.1}FeNi$ High Entropy Alloy*, Welding in the World, 63(3), pp. 739-750, 2019. <http://doi.org/10.1007/s40194-019-00702-7>
4. M. Orr, **C. Fink**, J. C. Lippold and F. Argentine, *Effect of Nitrogen on Solidification Cracking in $ERNiCr-3$ Weld Metal*, Welding Journal, 97(08), pp 243-s-252-s, 2018. <https://doi.org/10.29391/2018.97.021>
5. C.-H. Li, M. Shao, **C. Fink**, J. C. Lippold, and J. Jinschek, *TEM Investigation on Eutectic Phase Formation in $Ni-30Cr$ Filler Metal 52XL*, Volume 24, Supplement S1 (Proceedings of Microscopy & Microanalysis 2018) August 2018, pp. 42-43, 2018. <https://doi.org/10.1017/S1431927618000703>
6. **C. Fink** and B. Alexandrov, *Effect of Post Weld Heat-Treatment on Fusion Boundary Microstructure in Dissimilar Metal Welds for Subsea Service*, Materials Testing, 59 (6), pp. 547-554, 2017. <https://doi.org/10.3139/120.111039>
7. **C. Fink**, *An Investigation on Ductility-Dip Cracking in the Base Metal Heat-Affected Zone of Wrought Nickel Base Alloys - Part I: Metallurgical Effects and Cracking Mechanism*, Welding in the World, 60 (5), pp. 939-950, 2016. <https://doi.org/10.1007/s40194-016-0370-4>
8. **C. Fink**, M. Zinke and S. Jüttner, *An Investigation on Ductility-Dip Cracking in the Base Metal Heat-Affected Zone of Wrought Nickel Base Alloys - Part II: Correlation of PVR and STF Results*, Welding in the World, 60 (5), pp. 951-961, 2016. <https://doi.org/10.1007/s40194-016-0352-6>
9. **C. Fink** and M. Zinke, *Welding of Nickel-Based Alloy 617 using Modified Dip Arc Processes*, Welding in the World, 57 (3), pp. 323-333, 2013. <https://doi.org/10.1007/s40194-013-0034-6>
10. **C. Fink**, D. Keil and M. Zinke, *Evaluation of Hot Cracking Susceptibility of Nickel-Based Alloys by the PVR Test*, Welding in the World, 56 (7/8), pp. 37-43, 2012. <https://doi.org/10.1007/BF03321363>