IDENTIFYING INFORMATION:

NAME: Unocic, Kinga Angelika

POSITION TITLE: Associate Professor

PRIMARY ORGANIZATION AND LOCATION: North Carolina State University, Raleigh, North Carolina, United States

Professional Preparation:

ORGANIZATION AND LOCATION	DEGREE (if applicable)	RECEIPT DATE	FIELD OF STUDY
The Ohio State University, Columbus, Ohio, United States	PHD	08/2008	Materials Science and Engineering
The Ohio State University, Columbus, Ohio, United States	MS	06/2006	Materials Science and Engineering
AGH University of Science and Technology (5 year program BS+MS), Krakow, Not Applicable, N/A, Poland	MS	09/2002	Metallurgical Engineering

Appointments and Positions

2024 - present Associate Professor, North Carolina State University, Raleigh, North Carolina, United States

2021 - 2024 Senior R&D Staff Scientist, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States

2014 - 2021 R&D Staff Scientist, Oak Ridge National Laboratory, Oak Ridge, TN, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States

2009 - 2014 R&D Associate, Oak Ridge National Laboratory, Oak Ridge, TN, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States

2008 - 2009 Postdoctoral Researcher, The Ohio State University, Columbus, Ohio, United States

2003 - 2008 Graduate Research Associate, The Ohio State University, Columbus, Ohio, United States

2002 - 2002 Visiting Research Scientist, Lehigh University, Lehigh, Pennsylvania, United States

Products

Products Most Closely Related to the Proposed Project

1. Lach TG, Gussev MN, Unocic KA, Zhong W, Godfrey A, McClintock DA. Multimodal Characterization of Stored Energy and Gas-Filled Cavities in FCC Alloys Irradiated with Spallation Neutrons and High-Energy Protons. Microscopy and Microanalysis. 2023 August; 29:1538. Available from: https://doi.org/10.1093/micmic/ozad067.792 DOI: 10.1093/micmic/ozad067.792

2. McClintock DA, Gussev MN, Campbell C, Mao K, Lach TG, Lu W, Hachtel JA, Unocic KA. Observations of radiation-enhanced ductility in irradiated Inconel 718: Tensile properties, deformation behavior, and microstructure. Acta Materialia. 2022; 231:117889. Available from: https://doi.org/10.1016/j.actamat.2022.117889 DOI: 10.1016/j.actamat.2022.117889
3. Guo Q, Kirka M, Lin L, Shin D, Peng J, Unocic KA. In situ transmission electron microscopy deformation and mechanical responses of additively manufactured Ni-based superalloy. Scripta Materiali. 2020; 186:57. Available from: https://doi.org/10.1016/j.scriptamat.2020.04.012. DOI: 10.1016/j.scriptamat.2020.04.012.
4. Pint BA, Unocic KA. Steam Oxidation Evaluation of Fe-Cr Alloys for Accident Tolerant Nuclear Fuel Cladding. Oxidation of Metals. 2017; 87(3-4):515. Available from: https://doi.org/10.1007/s11085-017-9754-0 DOI: 10.1007/s11085-017-9754-0
5. Lach TG, Unocic KA, Gussev MN, Godfrey AJ, Zhong W, Wang H, Lu W, Dominguez-Ontiveros EE, McClintock DA. Microstructure, stored energy, and stability of H/He-filled nanocavities in low temperature irradiated Inconel 718. Materials Science and Engineering: A. 2025 May; 929:148111. Available from: https://doi.org/10.1016/j.msea.2025.148111

Other Significant Products, Whether or Not Related to the Proposed Project

1. Parish CM, Unocic KA, Tan L, Zinkle SJ, Kondo S, Snead LL, Hoelzer DT, Katoh Y. Helium sequestration at nanoparticle-matrix interfaces in helium þ heavy ion irradiated nanostructured ferritic alloys. Journal of Nuclear Materials. 2017; 483:21. Available from: https://doi.org/10.1016/j.jnucmat.2016.10.038 DOI: 10.1016/j.jnucmat.2016.10.038
2. Massey CP, Edmondson PD, Unocic KA, Yang Y, Dryepondt SN, Kini A, Gault B, Terrani KA, Zinkle SJ. The effect of Zr on precipitation in oxide dispersion strengthened FeCrAl alloys. Journal of Nuclear Materials. 2020; 533:152105. Available from: https://doi.org/10.1016/j.jnucmat.2020.152105 DOI: 10.1016/j.jnucmat.2020.152105
3. Barr CM, Vetterick GA, Unocic KA, Hattar K, Bai X, Taheri ML. Anisotropic radiation-induced segregation in 316L austenitic stainless steel with grain boundary character. Acta Materialia. 2014; 67:145. Available from: https://doi.org/10.1016/j.actamat.2013.11.060 DOI: 10.1016/j.actamat.2013.11.060
4. Unocic KA, Pint BA. Alloying and coating strategies for improved Pb–Li compatibility in DEMO-type fusion reactors. Journal of Nuclear Materials. 2014; 455:330. Available from: https://doi.org/10.1016/j.jnucmat.2014.06.058 DOI: 10.1016/j.jnucmat.2014.06.058
5. Mao KS, Massey CP, Yamamoto Y, Unocic KA, Gussev MN, Zhang D, Briggs SA, Karakoc O, Nelson AT, Field KG, Edmondson PD. Improved irradiation resistance of accident-tolerant high-strength FeCrAl alloys with heterogeneous structures. Acta Materialia. 2022; 231:17843. Available from: https://doi.org/10.1016/j.actamat.2022.117843. DOI: 10.1016/j.actamat.2022.117843.

Certification:

I certify that the information provided is current, accurate, and complete. This includes but is not limited to current, pending, and other support (both foreign and domestic) as defined in 42 U.S.C. § 6605.

I also certify that, at the time of submission, I am not a party to a malign foreign talent recruitment program.

Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§ 287, 1001, 1031 and 31 U.S.C. §§ 3729-3733 and 3802.

Certified by Unocic, Kinga Angelika in SciENcv on 2025-04-15 14:48:11