# Jason M. Harp, Ph.D.

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**EDUCATION AND TRAINING:**

| Degree | Year | Area/Major | Institution |
|---|---|---|---|
| Ph.D | 2010 | Nuclear Engineering | North Carolina State University, Raleigh, NC |
| MS | 2007 | Nuclear Engineering | North Carolina State University, Raleigh, NC |
| BS | 2005 | Nuclear Engineering | Texas A&M University, College Station, TX |

**RESEARCH AND PROFESSIONAL EXPERIENCES:**

**Research and Development Staff, June 2019 to present**
**Nuclear Fuel Materials Group**
**Oak Ridge National Laboratory, Oak Ridge, TN**
Collect and supervise the collection of postirradiation examination data to better understand nuclear fuel performance.

**Research and Development Engineer, September 2010 to May 2019**
**Advanced Characterization and Post Irradiation Examination**
**Idaho National Laboratory, Idaho Falls, ID**
Collect and supervision of the collection of data from various postirradiation examination campaigns, interpret this data, and report this data through technical reports and peer reviewed journal articles. Provide feedback for irradiation testing, manage project scope and budget, and supervise junior research staff, post-docs, and students.
Research Areas:
Post Irradiation Examination Principle Investigator for DOE's Advanced Fuels Campaign (Fast Reactor Fuels, LWR Accident Tolerant Fuels)
Post Irradiation Examination of TRISO fuel irradiation experiments, specifically non-destructive burn-up analysis with gamma-ray spectrometry.
Fabrication of uranium silicide for LWR applications in cooperation with Westinghouse

**RELEVANT PUBLICATIONS FROM PEER REVIEWED JOURNALS: SCOPUS H-INDEX 8**

F. Cappia, J.M. Harp, Postirradiation examinations of low burnup U3Si2 fuel for light water reactor applications, J. Nucl. Mater. 518 (2019) 62–79. https://doi.org/10.1016/J.JNUCMAT.2019.02.047.

F. Cappia, J.M. Harp, K. McCoy, Post-irradiation examinations of UO2 composites as part of the Accident Tolerant Fuels Campaign, J. Nucl. Mater. 517 (2019) 97–105. https://doi.org/10.1016/J.JNUCMAT.2019.01.050.

J.M. Harp, L. Capriotti, H.J.M. Chichester, Postirradiation Examination of FUTURIX-FTA metallic alloy experiments, J. Nucl. Mater. 515 (2019) 420–433. https://doi.org/10.1016/J.JNUCMAT.2018.12.051.

Jason M. Harp, Heather J.M. Chichester, Luca Capriotti, "Postirradiation examination results of several metallic fuel alloys and forms from low burnup AFC irradiations,"Journal of Nuclear Materials,2018, https://doi.org/10.1016/j.jnucmat.2018.07.003.

He L, Harp JM, Wagner AR, Hoggan RE, Tolman KR. Hydrothermal synthesis of silicon oxide clad uranium oxide nanowires. J Am Ceram Soc. 2018;101:1004–1008. https://doi.org/10.1111/jace.15295

Jason M. Harp, Paul A. Demkowicz, John D. Stempien, "Fission product inventory and burnup evaluation of the AGR-2 irradiation by gamma spectrometry," Nuclear Engineering and Design, 2018, https://doi.org/10.1016/j.nucengdes.2017.08.005.

Y. Miao, J. Harp, K. Mo, S. Zhu, T. Yao, J. Lian, A.M. Yacout, Bubble morphology in U3Si2 implanted by high-energy Xe ions at 300 °C, J. Nucl. Mater. 495 (2017) 146–153. https://doi.org/10.1016/J.JNUCMAT.2017.07.066.

Y. Miao, J. Harp, K. Mo, S. Bhattacharya, P. Baldo, A.M. Yacout, Short Communication on "In-situ TEM ion irradiation investigations on U3Si2 at LWR temperatures," J. Nucl. Mater. 484 (2017) 168–173. https://doi.org/10.1016/J.JNUCMAT.2016.11.020.

Jason M. Harp, Douglas L. Porter, Brandon D. Miller, Tammy L. Trowbridge, William J. Carmack, "Scanning electron microscopy examination of a Fast Flux Test Facility irradiated U-10Zr fuel cross section clad with HT-9," Journal of Nuclear Materials, 2017, http://dx.doi.org/10.1016/j.jnucmat.2017.07.040.

Lingfeng He, Jason M. Harp, Rita E. Hoggan, Adrian R. Wagner, Microstructure studies of interdiffusion behavior of USi/Zircaloy-4 at 800 and 1000 °C, Journal of Nuclear Materials, 2017, http://dx.doi.org/10.1016/j.jnucmat.2017.01.035.

John D. Hunn, Charles A. Baldwin, Tyler J. Gerczak, Fred C. Montgomery, Robert N. Morris, Chinthaka M. Silva, Paul A. Demkowicz, Jason M. Harp, Scott A. Ploger, Detection and analysis of particles with failed SiC in AGR-1 fuel compacts, Nuclear Engineering and Design, 2016, http://dx.doi.org/10.1016/j.nucengdes.2015.12.011

Paul A. Demkowicz, et al, Irradiation performance of AGR-1 high temperature reactor fuel, Nuclear Engineering and Design, 2016, http://dx.doi.org/10.1016/j.nucengdes.2015.09.011

Jason M. Harp, Paul A. Lessing, Rita E. Hoggan, "Uranium silicide pellet fabrication by powder metallurgy for accident tolerant fuel evaluation and irradiation," Journal of Nuclear Materials, 2015, http://dx.doi.org/10.1016/j.jnucmat.2015.06.027

J.M. Harp, P.A. Demkowicz, P.L. Winston, J.W. Sterbentz, "An analysis of nuclear fuel burnup in the AGR-1 TRISO fuel experiment using gamma spectrometry, mass spectrometry, and computational simulation techniques," Nuclear Engineering and Design, 2014, http://dx.doi.org/10.1016/j.nucengdes.2014.07.041

D.M. Scates, J.K. Hartwell, J.B. Walter, M.W. Drigert, J.M. Harp, "Fission product monitoring of TRISO coated fuel for the advanced gas reactor-1 experiment," Nuclear Engineering and Design, 2010, https://doi.org/10.1016/j.nucengdes.2009.10.014

J.M. Harp, A.I. Hawari, M.A. Bourham, "Simulation of γ-ray spectrometry of failed TRISO fuel, Nuclear Inst. And Methods in Physics Research A, Vol. 579, 2007, https://doi.org/10.1016/j.nima.2007.04.065

**SYNERGISTIC ACTIVITIES AND AWARDS:**

2005 Advanced Fuel Cycle Initiative Fellow
2015-present Generation IV International Forum – Advanced Fuel Project, US Department of Energy Representative
2015-present US-Japan Civilian Nuclear Working Group Fuel Cycle Waste Management Advanced Fuels sub-working group member
2016 Best Paper PIE track HTR-2016 for "Fission Product Inventory and Burnup Evaluation of the AGR-2 Irradiation by Gamma Spectrometry,"
2016-present OECD-NEA Expert Group on Innovative Fuel - US Department of Energy Representative