

CURRICULUM VITAE OF DANIEL P. KRAMER

Division Head, Metals & Ceramics
University of Dayton Research Institute, Dayton, OH

EDUCATION

- Ph.D.**, Ceramic Science, Rutgers University, New Brunswick, NJ
M.S., Ceramic Science, Rutgers University, New Brunswick, NJ
M.S., *Ceramics, Massachusetts Institute of Technology, Cambridge, MA*
B.S., Ceramic Science, Rutgers University, New Brunswick, NJ
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PROFESSIONAL EXPERIENCE

University of Dayton Research Institute (UDRI), Division Head/Metals & Ceramics, Dayton, OH

- Responsible for leading the Metals & Ceramics Division at UDRI that is composed of non-exempt and exempt employees who conduct cutting edge sponsored material based R&D.
- Performing R&D on a number of materials based energy projects (RTG's, Nuclear, Fuel Cells, etc.) for various sponsors including DOE/DOD/NASA laboratories/facilities and industrial partners.
 - Materials technical advisor to the U.S. Department of Energy in support of their efforts in the development and production of plutonium238 powered RTG's (Radioisotope Thermoelectric Generators) power systems.

The Edison Materials Technology Center (EMTEC), Senior Science Fellow, Dayton, OH

- Responsible for facilitating the development and commercialization of materials and processes associated with all aspects of fuel cell technology. EMTEC is a non-profit materials technology center focused on improving the industrial competitiveness of Ohio companies.
- Program Manager on various research and development programs focused on the development of cost-effective processes for the production of novel ceramic-based anode, cathode, and electrolyte powders for fuel cell applications.
 - Senior technical liaison between EMTEC and Federal laboratories, NASA technical centers, State of Ohio development agencies, universities, and industrial partners.

Mound Laboratories, U.S DOE GOCO, Science Fellow, Miamisburg, OH

Directed advanced materials research/development/processing efforts at Mound Laboratories associated with the development/manufacture of components for the nuclear weapons stockpile and plutonium238 based Radioisotope Thermoelectric Generators (RTG) for outer planet space missions (i.e. Cassini/Saturn).

- Materials science advisor to the Advanced Conversion Technology Review Panel (1997-2000) sponsored by Jet Propulsion Laboratory (NASA) and the U.S. Department of Energy tasked with the selection of an advanced radioisotope power system to be employed on the next generation of outer planet missions.
- Senior materials technical liaison between Mound and various DOE laboratories (ORNL, LANL, SNLA, etc.), NASA technical centers, DOD facilities, universities, and industrial contractors.
 - Program manager of major multi-year research and development programs resulting in the development and fabrication of highly reliable components for application in various nuclear defense related endeavors.
- Directed various development and research programs that required the selection and application of a broad range of materials including high temperature niobium/tantalum/molybdenum/tungsten refractory alloys, various cobalt/nickel-based superalloys, glass/ceramics, oxide/nitride/carbide ceramics, and explosives.
- Developed innovative processing techniques that resulted in the development of a new class of laser-ignited devices in support of a U.S. Navy aircrew escape system.
- Managed Materials Engineering/Surface Modification Research and Development Group composed of non-exempt and exempt employees, including Ph.D. level scientists.
- Developed novel "dry" glass formulation process that was incorporated by Los Alamos/Sandia National Laboratories in the production of a new family of components for the nuclear stockpile.

Daniel P. Kramer, Ph.D.

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PROFESSIONAL AND ACADEMIC HONORS

Outstanding Poster Award:	National Space Materials and Missiles Symposium – Space Exploration Air Force Research Laboratory
Outstanding Achievement Award:	United States Department of Energy
Award of Excellence:	Director of Military Applications, U.S. Department of Defense
Certificate of Appreciation:	Los Alamos National Laboratory/Sandia National Laboratory
Cassini Recognition Award:	National Aeronautics and Space Administration
Group Achievement Award:	Cassini Program/RTG/RHU Team, NASA
Small Business of the Year:	Mound Laser & Photonics Center, Inc., Partner Dayton Area Chamber of Commerce
Best Paper Awards:	Eighth and Twentieth Annual Mini-Symposium on Aerospace Science and Technology, American Institute of Aeronautics and Astronautics
Ceramographic Exhibit Award:	The American Ceramic Society

SELECTED PUBLICATIONS AND PATENTS (Over ninety publications and twelve issued U.S. Patents)

D.P. Kramer, D.A. Jaworske, J.R. McDougal, R.G. Miller, R.A. Booher, D.C. McNeil and E.I. Howell, "Thermal Emittance Measurements on Candidate Refractory Materials for Application in Nuclear Space Power Systems," Proceedings of Space Technology and Applications

International Forum (STAIF-2001), American Institute of Physics Conference Proceedings 522, Albuquerque, NM, February 2001, pp. 979-984.

D.P. Kramer, J.D. Ruhkamp, J.R. McDougal, D.C. McNeil, R.A. Booher, and E.I. Howell, "Investigation of the Niobium/Hafnium Alloy C-103 as Cell Wall Material in an AMTEC Based Thermal to Electrical Converter," Proceedings of the 36th Intersociety Energy Conversion Engineering Conference (IECEC), American Society of Mechanical Engineers, Savannah, GA, July 2001, IECEC2001-CT-24, pp. 507-512.

D.P. Kramer, R.G. Miller, E.I. Howell, D.A. Jaworske, and K.E. Wilkes, "Comparison of Measurement Techniques for Determining the Thermal Emittance of Coupons at Elevated Temperatures," Proceedings of the Space Technology and Applications International Forum (STAIF-2003), American Institute of Physics Conference Proceedings 654, Albuquerque, NM, February 2003, pp. 715-721.

D.P. Kramer, Niobium in Chemistry: Foundations and Applications, ISBN: 0-02-865721-7, Macmillan Reference USA, 2004 (contribution).

C.D. Barklay, D.P. Kramer, and J.D. Ruhkamp, "Analysis of the Effect of Time, Temperature, and Fuel Age on Helium Release from ²³⁸Plutonium Dioxide Fuel," Proceedings of the Space Technology and Applications International Forum (STAIF-2005), American Institute of Physics Conference Proceedings 746, Albuquerque, NM, Feb 2005, pp. 820-826.

C. D. Barklay, Daniel P. Kramer, and Roger G. Miller, "The Effect of the Presence of 2 wt% Hafnium in T-111," Proceedings of the Space Technology and Applications International Forum (STAIF-2006), American Institute of Physics Conference Proceedings 813, Albuquerque, NM, February 2006, pp. 751- 756.

W.E. Moddeman, C.D. Barklay, J.C. Birkbeck, R.G. Miller, L.F. Allard, and D.P. Kramer, "Thermodynamic Prediction of Compositional Phases by Transmission Electron Microscopy on Tantalum-Based Alloy Weldments," Proceedings of Space Technology and Applications International Forum (STAIF-2007), American Institute of Physics Conference Proceedings 880, Albuquerque, NM, February 2007, pp. 229-233.

D.P. Kramer, C.D. Barklay, and J. Talnagi, "Neutron Irradiation of Refractory Tantalum Alloys (T-111 and Ta/10W) for Radioisotope Space Power System Applications," Proceedings of the 2007 National Space & Missile Materials Symposium, Keystone, Colorado, June, 2007.

C.D. Barklay, J.Y. Howe, and D.P. Kramer, "Investigation of Stress Rupture Tested Neutron Irradiated Tantalum Alloys," to be published in the Proceeding of Space Technology and Applications International Forum (STAIF-2008), to be published in American Institute of Physics Conference Proceedings xxx, Albuquerque, NM, February 2008, pp. xxx