

JEFFREY C. KING

Professional Preparation

New Mexico Institute of Mining and Technology, Environmental Engineering, B.S., 1994
University of New Mexico, Nuclear Engineering, M.S., 2000
University of New Mexico, Nuclear Engineering, Ph.D., 2006

Appointments

Assistant Professor, *Nuclear Science and Engineering Program, Metallurgical and Materials Engineering Dept., Colorado School of Mines*, August 2009-present
Research Assistant Professor, *Mining and Nuclear Engineering Dept., Missouri University of Science and Technology*, August 2009-present
Research Assistant Professor, *Metallurgical and Materials Engineering Dept., Colorado School of Mines*, January-August 2009
Assistant Professor, *Mining and Nuclear Engineering Dept., Missouri University of Science and Technology*, 2006-2009
Facility Representative, *ITP Facility, Savannah River Operations Office*, 1996-1998
Engineer, *Mixed/Hazardous Waste Team, Savannah River Operations Office*, 1994-1996

Areas Of Expertise

- Microstructural finite element analysis of metallic dispersion-type reactor fuels
- Design of innovative nuclear reactors
- Thermal, structural, and performance analysis of nuclear power systems
- Design and analysis of nuclear power systems for space and terrestrial use
- Integration of different modeling capabilities (neutronics, finite element, computational fluid dynamics) into dynamic models of complex systems
- Multiple general and nuclear engineering software packages, including MCNP, MCNPX, DANTSYS, OOF, NJOY, ALGOR, ANSYS, SolidWorks, CosmosWorks, Cosmos FloWorks, and MatLab/Simulink
- General engineering drawing and design principles
- Advanced user of both UNIX and Windows operating environments, including massively parallel systems
- Fluent in Fortran, C++, Scheme, and variants
- Teaching and instruction, including seminars, workshops, and classroom experience
- Excellent public/technical speaker with experience in presenting to diverse audiences

Publications

Craft, A.E. and King, J.C., "Radiation Shielding Options for the Affordable Fission Surface Power System," *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF-2009)*, AIP Conference Proceedings, American Institute of Physics, Melville, New York, 2009.

Craft, A.E. and King, J.C., "Reactivity Control Schemes for Fast Spectrum Space Nuclear Reactors," *Proceedings of the Space Technology and Applications International Forum (STAIIF-2008)*, edited by M.S. El-Genk, AIP Conference Proceedings 969, American Institute of Physics, Melville, New York, 2008.

King, J.C. and El-Genk, M.S., "Thermal-hydraulic and neutronic analyses of the submersion-subcritical, safe space (S⁴) reactor," *Nuclear Engineering and Design*, 2009, in press.

King, J.C. and El-Genk, M.S., "Thermal-Hydraulic Analyses of the Submersion-Subcritical Safe Space (S⁴) Reactor," *Proceedings of the Space Technology and Applications International*

Forum (STAIF-2007), edited by M.S. El-Genk, AIP Conference Proceedings 880, American Institute of Physics, Melville, New York, 2007 pp. 261-270.

King, J.C. and El-Genk, M.S., "Temperature and burnup reactivities and operational lifetime for the submersion-subcritical, safe space (S⁴) reactor," *Nuclear Engineering and Design*, 2007, vol. 237, no 5, pp. 552-564.

King, J.C. and El-Genk, M.S., "Submersion-subcritical safe space (S⁴) reactor," *Nuclear Engineering and Design*, 2006, vol. 236, no. 17, pp. 1759-1777.

King, J.C. and El-Genk, M.S., "Submersion criticality safety of fast spectrum space reactors: Potential spectral shift absorbers," *Nuclear Engineering and Design*, 2006, vol. 236, no. 3, pp. 238-254.

King, J.C. and El-Genk, M.S., "Effects of Gadolinium and Europium on the Design and Submersion Criticality of a Fast Spectrum Space Reactor," *Proceedings of the Space Technology and Applications International Forum (STAIF-2005)*, edited by M.S. El-Genk, AIP Conference Proceedings 746, American Institute of Physics, Melville, New York, 2005, pp. 461-472.

King, J.C. and El-Genk, M.S., "Stress and Buckling Analyses of Multitube, Vapor Anode Nb-1Zr/C-103 AMTEC Cells," *J. Propulsion and Power*, 2001, vol. 17, no. 3, pp. 557-565.

El-Genk, M.S. and King, J.C., "Performance Analyses of an Nb-1Zr/C-103, Vapor Anode Multi-Tube Alkali-Metal Thermal-to-Electric Conversion Cell," *J. Energy Conversion and Management*, 2001, vol. 42, pp. 721-739.

King, J.C. and El-Genk, M.S., "Review of Refractory Materials for Alkali Metal Thermal-to-Electric Conversion Cells," *J. Propulsion and Power*, 2001, vol. 17, no. 3, pp.547-556.

Synergistic Activities

- Team Leader – 2009 Missouri S&T/Colorado School of Mines Advanced Test Reactor Faculty/Student Research Team
- Faculty Advisor – Colorado School of Mines chapter of the American Nuclear Society
- Faculty-Member-in-Residence – Washington Internships for Students of Engineering (WISE-2008)
- Developing pedagogical methods to help young engineers understand the role of public policy in their careers and how they can be involved in the public policy process
- Provided comment at state-level legislative hearings related to nuclear engineering issues and discussed nuclear engineering issues with national legislative staff