Appendix B:

University of Illinois at Urbana-Champaign
Department of Nuclear, Plasma, and Radiological Engineering
THE FACULTY AND THEIR RESEARCH

Professors

R. A. Axford, Ph.D. Application of the Lie Theory of Local Transformation Groups to the solution of linear and nonlinear systems of differential equations that arise in engineering science, theoretical physics, applied mathematics, computational physics of nuclear energy systems

B. G. Jones, Ph.D. Thermal-hydraulics, reactor safety, multiphase flow, boiling heat transfer, turbulence measurement and modeling, flow-induced vibrations and hydroacoustics, human-machine interfaces for reactor control and simulation, food irradiation-safety

K. K. Kim, Ph.D. Fabrication of thin films and nanoparticles using charged nanodrops, radiation-resistant electronic devices based on group-III nitride semiconductors, controlled drug release based on precision microspheres and microcapsules, advanced flat panel displays, laser-fusion targets, electromagnetic railgun, plasma-material interaction, fusion reactor fueling

G. H. Miley, Ph.D. Fusion systems, plasma engineering, reactor kinetics and control, nuclear pumped lasers, direct energy conversion, hydrogen energy production, low-energy nuclear reactions in solids

D. N. Ruzic, Ph.D. Experimental fusion research, modeling of edge plasma atomic physics, atomic properties of potential first-wall materials, plasma-material interaction, plasma processing of semiconductors, extreme ultraviolet (EUV) sources for lithography, physical and chemical vapor deposition

C. E. Singer, Ph.D. Energy economics, energy and security, advanced propulsion systems, nuclear proliferation, South Asian nuclear programs

J. F. Stubbins, Ph.D. Development, analysis and application of materials, primarily for energy-related applications; nuclear systems design and analysis; nuclear materials, nuclear fuels, irradiation damage and effects, mechanical properties, high temperature corrosion, electron microscopy

R. Uddin, Ph.D. Nuclear reactor theory, homogenization techniques, computational methods, reactor thermal hydraulics, virtual nuclear systems, nonlinear dynamical systems, computational biology

Associate Professor

B. J. Heuser, Ph.D. Hydrogen/metal systems, defects in materials, thin-film structures, numerical simulations of spallation source systems, neutron scattering techniques

M. H. Ragheb, Ph.D. Computational methods, reactor theory, Monte Carlo methods, radiation protection and shielding, fusion systems, probabilistic risk assessment, probabilistic and possibilities decision making, applied artificial intelligence, supercomputing

Assistant Professor

L. J. Meng, Ph.D. Ultra-high resolution imaging systems for biomedical/molecular imaging applications; novel imaging sensor based on room temperature semiconductor detectors.

Affiliate Faculty

In addition to the full-time faculty members, UIUC professors in a broad range of engineering disciplines are formally affiliated with NPRE. They provide a breadth of expertise that broadens opportunities for research activities.

I. Baianu, Department of Food Science and Human Nutrition

C. W. Bullard, Department of Mechanical and Industrial Engineering

S. Larson, Department of Civil and Environmental Engineering

W. O’Brien, Department of Electrical and Computer Engineering

W. Roy, National Research & Environmental Science

B. G. Thomas, Department of Mechanical and Industrial Engineering

Emeritus Faculty

D. F. Hang, Department of Nuclear, Plasma, and Radiological Engineering

Adjunct Faculty

Several adjunct faculty members are also interacting directly with NPRE, providing an even broader range of opportunities for research.

M. Aref, M.D., Resident, Department of Internal Medicine, University of Illinois College of Medicine at Urbana-Champaign

T. J. Dolan, Nuclear, Plasma, and Radiological Engineering, University of Illinois at Urbana-Champaign, Illinois

M. Garada, Regional Medical Physicist, Provena Covenant Cancer Center, Urbana, Illinois

B. E. Jurczyk, Starfire Industries, LLC., Champaign, Illinois


D. Miller, Information System on Occupational Exposure, North American Technical Center, UIUC

R. F. Nelson, Radiation Oncology Department, Provena Covenant Medical Center, Urbana, Illinois

S. L. Rohde, Department of Mechanical Engineering –University of Nebraska-Lincoln, Nebraska

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