GSRA and Post-doc Opportunities at RPI

Graduate student research assistant (GSRA) openings are available for students to pursue Ph.D. degree at Prof. Jie Lian’ group (NanoNuclear and Energy Materials Group) at the Department of Mechanical, Aerospace and Nuclear Engineering, Rensselaer Polytechnic Institute. A postdoc research fellow is also available immediately.

The potential Ph.D. students and post-doc research fellow will work under a multidiscipline team consisted of the scientists from RPI, multiple universities, national laboratories (INL, LANL, Argonne) and industry in developing advanced materials for nuclear application with the emphasis of the correlation in materials processing-structure-properties. Specific research topics focus on the synthesis and fabrication of advanced nuclear fuels with well controlled microstructure by spark plasma sintering (SPS); fuel properties characterization and performance evaluation on thermo-mechanical properties, oxidation and corrosion resistance; obtaining critical experimental data for validating the multiscale multi-physics MARMOT modeling for fuel performance; radiation damage and microstructure evolution characterization; and developing crystalline ceramic materials as potential nuclear waste forms and fundamental understanding of the degradation behavior. Detailed information on the potential research topics can be found in Lian’s group website: [http://homepages.rpi.edu/~lianj/portfolio_2.html](http://homepages.rpi.edu/~lianj/portfolio_2.html)

Education backgrounds and research experiences in Materials Science & Engineering, Chemical Engineering, Condensed Matter Physics or Nuclear Engineering are required. Hands-on experiences on the microstructural characterization using TEM, materials synthesis and analysis (e.g., sol-gel, hydrothermal, sparking plasma sintering, solvent extraction) are preferred. It is particularly desirable for the applicants to have the experience in using spark plasma sintering (SPS) for synthesizing and designing advanced materials with enhanced performance, radiation damage study and microstructure analysis by TEM, or experience in performing leaching or corrosion testing to evaluate long term performance of materials. The duties of the post-doc research fellows include: (1) performing independent research under the scope of advanced materials for energy applications; (2) preparing proposals for funding; (3) training graduate students and (4) disseminating the knowledge through scientific publications or reports.

Letters of application can be submitted electronically to Dr. Jie Lian at lianj@rpi.edu, and the application should include a brief statement of research interests, a curriculum vitae, and the names and contact information of three professional references.