

University of Tennessee, Knoxville
in collaboration with **Research Centre / NRI Řež**
and the **Department of Nuclear Chemistry, CTU in Prague**
seek a student for the research topic

Experimental study of molten salts properties, in particular ${}^7\text{LiF}\cdot\text{BeF}_2$

In case of an agreement between the student and UTK / Řež, DNC will offer this research topic as a bachelor, diploma, or Ph.D. project for the academic year 2013/2014.

Abstract:

Fluoride salts, in particular ${}^7\text{LiF}\cdot\text{BeF}_2$ (FLiBe), are considered as promising coolants for a new class of high temperature reactors, the Fluoride-salt-cooled High-temperature Reactors (FHR), and fuel carriers for Gen-4 Molten Salt Reactors (MSR). Recently a Memorandum of Understanding between the Ministry of Industry and Trade of the Czech Republic and US – Department of Energy was signed. A container of FLiBe salt with highly enriched Lithium isotope 7 was transported from Oak Ridge National Laboratory (ORNL) to the Czech Republic (ÚJV and Centrum Výzkumu Řež) based on this memorandum. A collaborative research and development with this salt is performed in United States and in the Czech Republic. Participation in this R&D effort represents a unique opportunity for a motivated student at KJCH FJFI CVUT to become a valuable expert in the area of molten fluoride salts.

Scientists at ORNL, the University of Tennessee at Knoxville, and other US institutions involved in FHR/MSR development are interested in various studies and experimental measurements of the FLiBe salt properties, ranging from temperature dependence of optical transparency at various wave lengths to nuclear cross-section determination.

A student is expected to spend 6 to 12 months at ORNL and nearby Nuclear Engineering Department at the University of Tennessee at Knoxville (UTK NE) discussing details of the measurements to be carried out, preparing the work plan for the measurements, and acting as a connection between US and Czech scientists involved in the project. It is also expected that a student will cooperate with other Czech scientists from ÚJV and Centrum Výzkumu Řež.

The student could also be involved in the actual measurement of the properties of the salt, for example as a follow-up Master's dissertation. Multiple trips to the US are possible, depending on the project needs. The trips would be funded by IAEA. Ability to communicate in English in both verbal and written form is obligatory.

If you are interested, please contact me by email, and we will schedule an interview over Skype.

Contact person:

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