Glenn T. Seaborg Center Special Seminar

Overview of Radiochemical Activities at the Shanghai Institute for Applied Physics

Yu Gong

Shanghai Institute of Applied Physics, Chinese Academy of Sciences Research Institute, Shanghai Shi, China

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4:00 pm – 5:00 pm
Bldg. 70A, Room 3377

Molten Salt Reactor (MSR) is one of the candidate reactors that can be operated based on thorium uranium fuel cycle, in which fertile 232Th can be converted to fissile 233U mediated by 233Pa. However, formation and accumulation of neutron poisons such as 233Pa and fission products require reprocessing of the fuel such that the neutron economy of reactor core can be maintained. Due to the poor solubility and high radioactivity of liquid used fluoride fuels, pyroprocessing is more appropriate for the reprocessing of the liquid fuels from MSR. In this talk, the R&D of several pyroprocessing techniques in Shanghai Institute of Applied Physics (SINAP) in recent years including fluoride volatility, low pressure distillation and fluoride based electrolysis will be presented. A flowsheet aiming at recycling UF4, ThF4 and fluoride molten salt by using pyroprocessing techniques is proposed as well.