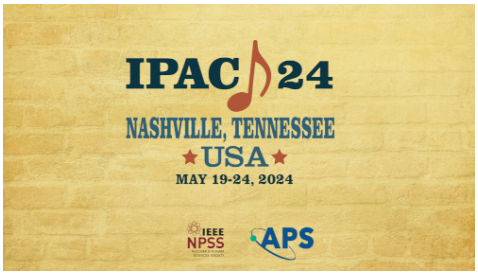

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Uranium spallation target chemistry for subcritical reactors

Thursday, 23 May 2024 16:00 (2 hours)

Over the last 13 years, Muons has also worked with other companies (ADNA, Niowave) and institutions (Virginia Tech, Jefferson Lab, ORNL, INL, SRNL) on accelerator-driven subcritical reactors (ADSR), to take advantage of large advances in superconducting RF (SRF) accelerators. In the last decade, SRF proton accelerators have been demonstrated to have the power and efficiency to produce copious spallation neutrons needed to enable a Molten Salt (MS) fueled subcritical nuclear reactor. Our Mu*STAR is the ADSR concept that is best matched to new accelerator capabilities, allowing subcritical operation with unenriched fuels or used nuclear fuel (UNF). We believe that reduced regulatory burdens from large subcritical safety margins and the continuous removal of volatile radiotoxic isotopes from an operating MSR will make Mu*STAR the cost competitive choice for nuclear energy.

Footnotes

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