

Abstract Submitted
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Efficiency of Accelerator Driven Thermal Thorium Nuclear Reactors M.A.K. LODHI, MIKE SHUBOV, Texas Tech University, Lubbock TX — We consider Accelerator Driven Thermal Thorium Reactors (ADTTNR) both for production of energy and isotopes This study indicates that such system can produce 2-15 times the energy, its accelerator consumes. The energy gain depends on the speed with which it burns fuel. A slow reactor, which burns 0.9% of thorium per year, and has a neutron loss of 4% would have an electrical efficiency 70-79%. (Neutron loss is the proportion of neutrons absorbed by reactor itself rather than material within it.) The wide range in reactor efficiency is due to the uncertainty in the number of neutrons produced per GeV accelerator energy. This system is expected also to be safer, then reactors currently in use.

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