

Why Thorium?

- # **Thorium can address issues that have remained unresolved with Uranium based nuclear energy.**
 - * **Thorium leads to some natural advantages in achieving greater safety and virtual elimination of adverse impact in public domain through the use of innovative configuration of present and future technologies.**
 - * **Disposal of spent fuel, potential elimination of long lived radioactive waste and recovery of fuller energy potential.**
 - * **Considerably reduced proliferation concerns through adoption of Thorium fuel cycle and appropriate reactor configuration.**

- # **Thorium is a better fertile host as compared to Uranium in the context of present day fuel technologies that can lead to high burn ups, is more abundant and constitutes sufficiently large energy resource to meet global energy needs in a more or less sustainable manner.**

OPPORTUNITIES FOR USE OF THORIUM

- **In present day water reactors for better utilization of uranium.**
- **For nuclear energy as a high temperature primary energy source**
- **In molten salt reactors**
- **In Accelerator Driven Sub critical reactor Systems**

POSSIBLE AREAS OF CO-OPERATION

- **Assessments to explore specific opportunities with existing reactor systems**
- **Nuclear as well as thermo-physical data for different aspects of Thorium utilization**
- **Co-ordinated development of core technologies involved in high temperature, molten salt and accelerator driven sub-critical reactor systems**
 - a. **Coated particle based fuel structures (pebbles, rods etc.)**
 - b. **Technology for molten salts as coolant, fuel carrier etc. and compatible structural materials**
 - c. **Technology for liquid heavy metals as coolant, spallation targets etc. and compatible structural materials**
 - d. **High power proton accelerators, spallation targets and coupling arrangements**
 - e. **Online/offline reprocessing of fuel to recycle fissile and fertile materials and transmute long lived waste products**

ORGANISATION FOR DRIVING CO-OPERATION

- **Need a host**
- **Need willing participants**
- **Need an agreed program**
 - At the level of studies**
 - At the level of core technologies**
 - At the level of an agreed system**
- **Funding arrangements**