



Module 3: Reactor Physics & Nuclear Power

Dr. Umashankari Kannan

ABOUT INSTRUCTOR:

Dr. Umasankari Kannan is heading the Reactor Physics Design Division of Bhabha Atomic Research Centre and has a vast experience spanning 35 years in the field of Reactor Physics. She is also a senior professor in Homi Bhabha National Institute (HBNI). She is responsible for the design of thorium fuelled Advanced Heavy Water Reactor (AHWR), Indian Pressurised water reactor (IPWR) and advanced thermal reactors such as High temperature reactors and Molten salt breeder reactors. She has many notable contributions to the physics design for AHWR and IPWR. She is also leading the team for experimental reactor physics activities and irradiation in reactors and other facilities. Her areas of specialisation include, thorium utilisation, Nuclear Data Physics for the thorium fuel cycle, fuel cycle studies for advanced systems. She has also contributed to irradiation experiments, analysis of existing reactors and providing reactor physics support to reactor safety.

Her research focus is in thorium fuelled reactor design, fuel cycle studies and development of new methods and codes. Her thesis on "Development of new nuclear databases for advanced reactor systems utilising thorium" brought out the influence of thorium and other isotopes on the physics safety parameters through a detailed sensitivity analysis. She has co-authored a book "Physics of Nuclear Reactors" which has been published by Elsevier recently. As a faculty at the HBNI, she is regularly engaged in teaching and is guiding many PhD students in the files of Reactor Physics and Nuclear Engineering. She has over 525 publications including 80 papers in peer reviewed Journals and International conferences, 86 papers in national conferences and 6 technical articles on thorium utilisation.

MODULE PLAN:

1. Reactor Physics & Nuclear Power - 6 Lectures