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## **INTRODUCTION TO NUCLEAR FISSION: PROCESS, PRESENT STATE OF THE ART AND THE RMB PROJECT IN BRAZIL,**

*Saturday, 2 September 2023 11:30 (40 minutes)*

### **Abstract:**

The Brazilian Nuclear Energy Commission (CNEN) decided to construct a new research reactor, named RMB (Brazilian Multipurpose Reactor). This reactor will be part of a new nuclear research center, to be built on a site about 100 kilometers from São Paulo city, in the southeast part of Brazil. It is a 30 MW open pool-type research reactor using low enriched uranium fuel, and several associated facilities and laboratories: to produce radioisotopes for medical and industrial use; to use thermal and cold neutron beams in scientific and technological research; to perform neutron activation analysis; and to perform materials and fuel irradiation tests.

This presentation will cover details of the RMB Project and its implementation. The reactor core design for the multipurpose utilization will be explored, emphasizing the technical aspects of the in core and out of core experiments.

To be noted: The school attendants will have the possibility to deepen their knowledge on this topic, thanks to the hands-on Lab prepared by Dr. F. Genezini and colleagues at the reactor at IPEN-CNEN(see INFIERI2023-Labs Booklett).

Lecturer: Dr Jose Parrotta is a Civil Engineer, MSc in Nuclear Engineering, DSc in Nuclear Technology, working in nuclear technology area since 1978. Joined the Institute of Energy and Nuclear Research (IPEN) of the Brazilian Nuclear Energy National Commission (CNEN) in 1983 where retired in June 2022 receiving the title of Emeritus Researcher. Have performed several technical, management and coordination functions, among the main ones: Head of the Nuclear Reactor Core Engineering Division (IPEN); Head of the Nuclear Engineering Center (IPEN); Coordinator of the Fuel Cell and Hydrogen Program (IPEN); Director of Special Projects (IPEN); Director of Research and Development (CNEN); Member of the IPEN High-Level Council; Advisor to the CNEN Presidency; and Technical Coordinator of the Brazilian Multipurpose Reactor Enterprise (RMB – CNEN) (Text informed by the Lecturer).

**Presenter:** Dr PERROTTA, Jose (IPEN-CNEN, BR)

**Session Classification:** NEW ENERGIES DAY