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Joint ICTP-IAEA Workshop on Physics of Radiation Effect and its Simulation for Non-Metallic Condensed Matter | (smr 2359)

Thursday 23 August 2012

Current R&D activities on ceramic fuel - Adriatico Guest House Giambiagi Lecture Hall (14:00-15:00)

In order to assess safety and performance of fuels for current or future types of nuclear power reactors it is essential to be able to measure relevant fuel properties such as thermal transport, fission gas behaviour, and mechanical properties and to correlate their evolution with microstructural changes as a function of burnup and irradiation conditions. An overview on the characterization methods used or under development in ITU and on the main results from studies focused on nuclear fuels is presented. In the perspective of future developments of advanced reactors and related fuel cycles, as envisaged by international efforts like e.g. GenIV, the focus of this type of studies is now shifting from standard, low/medium burnup LWR UO2 fuel to cover high/very high burnup, Pu-containing fuels, starting with MOX, and including non-oxide systems like e.g. nitrides, carbides but also minor actinide-containing fuels are also considered. A strong effort is ongoing to adapt or upgrade experimental facilities and methods optimized to the study of UO2-based pellets to the new concepts. An overview of developing activities in this area is also provided.

time	title	presenter
14:00	Current R&D activities on ceramic fuel	THIERRY WISS