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

Tuesday 21 August 2012

Synchrotron radiation based techniques for the study of structural radiation damage - Adriatico Guest House Giambiagi Lecture Hall (16:30-17:30)

There are many X-ray based experimental techniques that can be used to study material characteristics. For several of these experiments can be carried out in real time whilst the material is subjected to manipulations that mimic damage inducing processes. These processes can range from chemical (i.e. corrosion studies), via mechanical (i.e. deformation, stress/strain) to purely physical (i.e. radiation damage). It is rare that one is in the situation that radiation damage can be studied in real time. However, when care is taken one can prepare radiation damaged material in such a way that the radiation damage is frozen in until a trigger, like a thermal treatment, releases these defects and the evolution of the primary effect to larger scale structure, which will have an effect on the morphology and macroscopic mechanical stability, can be studied in real time. This can render information relevant to the functioning of mechanical components in high radiation and environmentally extreme, with respect to temperature and pressure, conditions. An oversight of some of the relevant experimental techniques will be given.

time	title	presenter
16:30	Synchrotron radiation based techniques for the study of structural radiation damage	WIM BRAS