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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 interactions with soft condensed matter and ceramics - Adriatico Guest House Giambiagi Lecture Hall (14:00-15:00)

*Synchrotron radiation is a high intensity radiation source which spatially, for the highest flux beamlines, is limited to beam sizes of at most several hundreds of microns. This can range over a large part of the electromagnetic spectrum from several hundreds of electronvolts to about 200 keV photons. A substantial number of synchrotron radiation laboratories offer access to a wide range of external users whom can perform experiments there which are not feasible with conventional X-ray radiation sources. In practice the majority of experiments that are carried out still utilize wavelengths not far removed from the X-ray energies, though not intensities, available from conventional X-ray sources, i.e. the photon energy range  $5 < E < 25$  keV. Although X-ray in the energy range mentioned above are relatively benign, for the materials under study, compared to for instance electron microscopy, one cannot ignore the effects that are induced by these intense beams on the materials under investigation. These effects are especially noticeable with materials which are not purely crystalline and in which one can find a large amount of disorder or which are amorphous. However, even crystalline materials are not completely impervious to the effects of high intensity X-ray beams. Problems are not only encountered in the form of radiation damage to the samples but in some cases structure formation is even induced. There can also be substantial effects on the kinetics from time-resolved processes.*

*Some of the interaction effects of high intensity synchrotron beams with a variety of materials will be discussed.*

time	title	presenter
14:00	Synchrotron radiation interactions with soft condensed matter and ceramics	WIM BRAS