

Séminaire SOLEIL

Spin dynamics study by time-resolved photoemission electron microscopy (PEEM)

Takuo OHKOCHI

(Japan Synchrotron Radiation Research Institute (JASRI) Spring-8, Kouto, Hyogo, JAPAN)

Invité par Mathieu SILLY

Lundi 16 septembre à 14h00
Grand Amphi SOLEIL

Photoemission electron microscope (PEEM) is a microscope which collects and images the secondary electrons emitted from materials by the photoelectric effect. Since the amount of emitted electrons is proportional to the absorption coefficient of the materials, space-resolved x-ray absorption spectra (XAS) can be obtained by collecting images successively, sweeping the energy of synchrotron radiation x-rays around the absorption edge of the element of interest. Moreover, by employing circularly polarized x-rays, magnetic domain images based on the x-ray magnetic circular dichroism (XMCD) are also available.

PEEMs have moderately good spatial resolution (20-100 nm) and film-shaped samples are not required for the experiments, unlike transmission x-ray microscopes. Therefore, a variety of samples such as nano-fabricated materials, oxides, semiconductors, extraterrestrial matters are applicable. Particularly in recent years, demands for direct observations of magnetic property in real space and time have been increasing in the researches on micro-sized magnetic materials for the sake of application to the energy-saving and ultrafast-operation devices.

In this seminar, I introduce our recent achievements on the development of time-resolved (pump-probe) PEEM measurement system with a variety of excitation sources (i.e. femtosecond pulsed lasers, high frequency magnetic/electric fields) and on the examples of the researches utilizing this system.



Ce séminaire sera suivi d'une pause-café



Formalités d'entrée : accès libre dans l'amphi du Pavillon d'Accueil. Si la manifestation a lieu dans le Grand Amphi SOLEIL du Bâtiment Central, merci de vous munir d'une pièce d'identité (à échanger à l'accueil contre un badge d'accès).

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Division Expériences - L'Orme des merisiers - Saint-Aubin - BP 48 - 91192 GIF S/YVETTE Cedex

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Secrétariat Division Expériences : sandrine.vasseur@synchrotron-soleil.fr