

Séminaire SOLEIL

Soft X-ray Scattering of Soft Material thin films

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Invité par **Sufal SWARAJ**

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Grand Amphi SOLEIL

The function and properties of organic and biological soft-condensed matter systems are largely determined by their nano- and mesoscopic chemical morphology. The understanding and rational use of such systems thus require that this structure be known. X-ray scattering technique has been widely used for the characterization of organic material structures. However, the relatively low scattering cross section and contrast of organic constituents in the hard x-ray regime allows transmission measurements of bulk structure from samples approximately millimeters in thickness, but the scattering from tens of nanometer thick organic thin films is difficult to measure, unless the grazing incident geometry (GISAXS) is utilized. Using x-ray energies close to the absorption edge of constituent atoms, soft x-ray scattering is a combination of conventional x-ray scattering with x-ray absorption spectroscopy that yields both elemental and chemical sensitivity. The strong resonance enhancement of the scattering contrast offers large scattering signal for thin organic films with only tens of nanometers thick. The enhanced scattering and tunable sensitivity for organic materials can be achieved without any chemical modifications. Various scattering geometries including specular reflectivity, transmission, and grazing incidence with soft x-ray scattering make it a great complimentary tool for the study of soft material thin films. A dedicated soft x-rays scattering setup optimized for soft materials has been constructed at Beamline 11.0.1.2 at the Advanced Light Source. Some recent results on organic PV, block copolymer thin films will be presented.



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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