

Synthesis and Characterization of Two-Dimensional Materials at Synchrotron SOLEIL

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(Ligne TEMPO, Synchrotron SOLEIL, Gif sur Yvette, France)

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Amphithéâtre SOLEIL

After being the dominant two-dimensional (2D) material with fascinating properties, graphene has been challenged by other promising materials over the past decade. New families of 2D materials have emerged, such as silicene, germanene, phosphorene, borophene and transition metal dichalcogenides (TMDCs). These materials can be obtained by a variety of methods, including mechanical exfoliation, liquid phase exfoliation, chemical vapor deposition, and molecular beam epitaxy (MBE). The latter has proven to be superior for producing large and homogeneous films on metal substrates. A large part of this thesis was devoted for the synthesis of new 2D materials using this technique. I have also highlighted an alternative approach for the synthesis of two-dimensional TMDCs monolayers. This approach, consisting of chemical deposition, allows to obtain high-quality and well-organized films on a large scale, thus can be a simplest way to produce devices for potential technological applications. In addition, my research activities during the last decade have focused on the use of synchrotron radiation applied to the investigation of self-organized organic films on metal surfaces, and of 2D materials, in particular by probing their electronic structures by XPS and ARPES. Thanks to a strong collaboration with the ISMO laboratory, extensive STM studies have been performed. In my presentation, I will give an overview on selected 2D systems, which were the subjects of three PhD projects I co-supervised in collaboration with partners from ISMO and ICMO laboratories.

Membres du jury :

M. Georg Held PR,
M. Ahmed Mazzah PR,
M. Marino Marsi PR,
Mme Michele Sauvage DR,
M. Massimiliano Marangolo PR,
M. Patrick Lefevre CR,
M. Hamid Oughaddou PR,

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Rapporteur
Rapporteur
Rapporteur
Examinatrice
Examineur
Examineur
Examineur



Vous êtes cordialement invités au pot qui suivra

Dans la limite de 25 personnes et dans le respect des gestes barrières

Accès limité à 25 personnes

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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HDR