

Lundi 30 novembre 2015 à 15h

Salle de réunion du SRMP – Bâtiment 520 - Pièce 109

***Defects in two-dimensional materials:
their production under irradiation,
evolution and properties from
first-principles calculations***

A. V. Krasheninnikov^{1,2}

¹ Helmholtz Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Germany

² Department of Applied Physics, Aalto University, Finland

Following isolation of a single sheet of graphene, many other 2D systems such as hexagonal BN sheets and transition metal dichalcogenides (TMD) were manufactured. Among them, TMD sheets have received particular attention, as these materials exhibit intriguing. Moreover, the properties can further be tuned by introduction of defects and impurities. In my talk, I will present the results [1] of our first-principles theoretical studies of defects (native and irradiation-induced) in inorganic 2D systems obtained in collaboration with several experimental groups. I will further discuss defect- and impurity-mediated engineering of the electronic structure of 2D materials.

[1] Nature Comm. 6 (2015) 6736; ACS Nano 9 (2015) 3274; ACS Nano (2015) DOI: 10.1021/acsnano.5b04851; Phys. Rev. B 91 (2015) 125304; Adv. Mater. 26 (2014) 2857; Phys. Rev. X 4 (2014) 031044; see <http://physics.aalto.fi/~ark/publist.html> for complete list of publications.

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