
O 33: Invited Talk (Guy Le Lay)

Time: Tuesday 15:00–15:45

Location: TRE Phy

Invited Talk

O 33.1 Tue 15:00 TRE Phy

Beyond graphene: silicene and germanene, its silicon and germanium cousins — ●GUY LE LAY — Aix-Marseille University, France

Silicene and germanene are the silicon and germanium analogues of graphene, hosting also Dirac fermions [1]. They are predicted to be two-dimensional topological insulators, up to nearly room temperature for germanene. The mobilities of their charge carriers are expected to

be very high, potentially exceeding those of graphene for the latter. After describing our breakthrough realization of epitaxial silicene on silver (111) substrates [2] we will present hints of the synthesis of single layer epitaxial germanene, a novel germanium allotrope that does not exist in the nature [3]. If confirmed, this new achievement might open the way to tantalizing applications. [1] G. Brumfiel, *Nature*, 495, 153 (2013); *Nature* 485, 9 (2012). [2] P. Vogt et al., *Phys. Rev. Lett.*, 108, 155501 (2012). [3] A. Resta et al., to be published