Abstract Submitted
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**Germanene, Graphene-like Germanium: Hint of Epitaxial Growth and Electronic Properties** GUY LE LAY, ANDREA RESTA, Aix-Marseille University, MARIA EUGENIA DAVILA, CSIC, 2D NANOLATTICES COLLABORATION, ICMM COLLABORATION — Germanene is the germanium analogue of silicene, graphene's silicon cousin, hosting Dirac fermions [1]. It is predicted to be a robust two-dimensional topological insulator up to nearly room temperature, while the mobilities of its charge carriers might potentially exceed those of graphene. After our ground breaking demonstration that silicene has a physical existence upon realization of epitaxial single and multi-layer silicene on silver (111) substrates [2,3] we will now give indications of the two-dimensional epitaxial growth of germanium in a honeycomb arrangement, most likely, single layer germanene, a novel synthetic germanium allotrope that does not exist in nature [4]. 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. Scientific Reports, **3**, 2399 (2013). [4] A. Resta et al., to be published.

Guy Le Lay
Aix-Marseille University

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