

Abstract Submitted  
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**Molecular assembly and organic film growth on complex inter-metallic surfaces.**<sup>1</sup> ABDULLAH AL-MAHBOOB, HEM RAJ SHARMA, Department of Physics, University of Liverpool, UK, JERZY T SADOWSKI, Center for Functional Nanomaterials, Brookhaven National Laboratory, USA, JULIAN LEDIEU, VINCENT FOURNE, Institut Jean Lamour, Universit de Lorraine, France, RONAN MCGRATH, Department of Physics, University of Liverpool, UK — We extensively studied the role of molecular symmetry and symmetry/structures of wide ranges of substrate-surfaces from non-periodic to periodic to quasi-crystalline in nucleation, growth and phase transition in films made of organic molecular materials. Recently, most interest in quasicrystals is due to the generalization of aperiodic ordering to several classes of systems. Compared to periodic materials, these provide a closer approximation to an isotropic first Brillouin zone, which is of great importance to the design of new functional materials. Here, we present results obtained from our ongoing study of interface mediated molecular assembly extended on complex intermetallic surfaces with specific examples of  $C_{60}$  and Zn-phthalocyanine on quasicrystalline and approximant surfaces. We employed in-situ real-time low-energy electron microscopy (LEEM) for investigation of the processes in assembly and film growth and post-growth STM study and DFT calculations to understand structural details and growth mechanism.

<sup>1</sup>Research were carried out in part at the Center for Functional Nanomaterials, Brookhaven National Lab, USA; partly at Institut Jean Lamour, Universit de Lorraine, France; and partly at the Surface Science Research Centre, University of Liverpool, UK.

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