

Abstract Submitted
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Decompositional, incommensurate growth of Ferrocene molecules on a Au(111) surface KAI-FELIX BRAUN, VIOLETA IANCU, SAW HLA, Ohio University, OHIO UNIVERSITY TEAM — We have investigated in depth the first layer growth of ferrocene molecules on a Au(111) surface with a low temperature scanning tunneling microscope. Ferrocene molecules adsorb dissociatively and form a two layer structure after being decomposed into fragments. The toplayer unit cell is composed of two tilted cyclopentadienyl rings, while the first layer consists of the remaining fragments. Surprisingly a fourfold symmetry is observed for the top layer while the first layer displays threefold symmetry elements. It is this symmetry mismatch which induces an incommensurability between these layers in all except one surface direction. The toplayer is weakly bonded allowing for an antiferromagnetic ordering as shown by density functional theory calculations.

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