

Abstract Submitted
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Fractal-Mound Growth of Pentacene Thin Films: A Novel Morphology SERKAN ZORBA, Whittier College, YONATHAN SHAPIR, YONGLI GAO, University of Rochester, GAO TEAM, YONATHAN SHAPIR COLLABORATION — We investigated the growth mechanism of pentacene film formation on SiO₂ substrate with a combination of atomic force microscopy measurements and numerical modeling. It is found that the submonolayer islands are diffusion-limited aggregates (DLA). With increased coverage, the Schwoebel barrier effect disrupts the desired epitaxial growth, leading to mound growth. The terraces of the growing mounds have a fractal dimension of 1.6, indicating a lateral DLA shape. This novel growth morphology thus combines horizontal DLA-like growth with vertical mound growth.

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