

Abstract Submitted
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Growth

and Morphology of High Mobility Organic Semiconductors¹ CORTNEY BOUGHER, Appalachian State University, KATELYN GOETZ, Wake Forest University, ZHONG LI, JOHN ANTHONY, University of Kentucky, OANA JURCHESCU, Wake Forest University, BRAD CONRAD, Appalachian State University — We utilize atomic force microscopy (AFM) to image the growth and morphology of chemically modified, solution-deposited anthradithiophene transistors. We discuss the effects of backbone modifications on crystal structure, film properties, and electrical device performance. These devices display a mobility of $0.001 \text{ cm}^2/\text{Vs}$ to $1 \text{ cm}^2/\text{Vs}$. Crystal orientation and film structures, such as film thickness, grain size, and growth modes will be discussed. In addition, AFM images are related to diffraction data and conduction channel crystallographic information is extracted.

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