

Abstract Submitted  
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**Three dimensional device simulations to model conducting probe AFM measurements of organic semiconductors with fibrous morphologies**  
KANOKKORN PIMCHAROEN, DANIAL OLDS, JIEBING SUN, PENGPENG ZHANG, PHILLIP DUXBURY, Michigan State University — Organic semiconductors offer a promising material for many optoelectronic devices, with device performance depending significantly on the nanoscale morphology. Atomic force microscopy (AFM) is one of the major instruments for investigating the dependence of current-voltage response on nanoscale structures. We are developing computational methods for fundamental study of charge transport probed by these measurements, using continuum device models and Kinetic Monte Carlo simulations. The simulations are performed on complex three dimensional model morphologies that are consistent with the topology observed in AFM measurements. The calculated IV response of these models is compared with CP-AFM measurements.

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