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**Utilizing Scanning Probe Microscopy to Study Organic Photovoltaic Materials** ASHLEY KIBEL, SHREYA BHATTACHARYYA, PAUL LIDDELL, DEVENS GUST, STUART LINDSAY, Arizona State University — Organic photovoltaics have the potential to provide cheaper alternatives to traditional silicon solar cells due to flexibility in design and engineering. Understanding how charge is transported in these materials is important for the future design and fabrication of efficient organic solar cells. We utilize scanning probe microscopy techniques to study the electrical properties of biomimetic organic molecules that have photovoltaic potential. We present results from conducting atomic force microscopy measurements performed on bare substrates commonly utilized in organic photovoltaic applications as well as measurements on organic thin films self assembled on these substrates. Furthermore, we present the results of single molecule conductivity experiments performed using a scanning tunneling microscope on novel donor-acceptor molecules. We discuss benefits, as well as challenges, to using scanning probe techniques on organic photovoltaic systems.

Ashley Kibel  
Arizona State University

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