

Abstract Submitted
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Atomic Force Microscope-Based Surface Potential and Surface Photovoltage Studies of Porphyrin Nanorod Thin Films TODD HOLDEN, Brooklyn College of CUNY, WALTER SMITH, Haverford College, A.D. SCHWAB, Appalachian State University, J.C. DE PAULA, Lewis and Clark College — We have performed atomic force microscope-based surface potential and surface photovoltage measurements on porphyrin grown as nanorods about 5 nm in diameter and 1 micron long. These nanorods have been shown to have peculiar photoconducting properties in that the photoconductivity grows under light illumination for up to 1 hour. In addition, when a current is flowed through the nanorods, they become “trained.” That is after the light is turned off and the ends of the nanorod are short circuited together, a small current will flow opposite to the direction of the original photocurrent. The material exhibits nanoscale potential fluctuations as well as selective surface potential sensitivity to light. These offer some insight to the material’s novel properties.

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