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**Spatial correlation of photoisomerization of functionalized azobenzene molecules on a surface** NIV LEVY, MATTHEW J. COMSTOCK, JONGWEON CHO, ARMEN KIRAKOSIAN, LUIS BERBIL-BAUTISTA, Dept. of Physics, UC Berkeley ; Mat. Sci. Div, Lawrence Berkeley Natl. Lab, FRANK LAUTERWASSER, JEAN M. J. FRÉCHET, Dept. of Chemistry, UC Berkeley ; Mat. Sci. Div, Lawrence Berkeley Natl. Lab, DAVID STRUBBE, STEVEN G. LOUIE, M. F. CROMMIE, Dept. of Physics, UC Berkeley ; Mat. Sci. Div, Lawrence Berkeley Natl. Lab — Photoactive azobenzene molecules have great potential for nanoscale opto-mechanical applications. We report a scanning tunneling microscopy (STM) study of the time-dependence of photo-switching tetra-*tert*-butyl-azobenzene (TTB-AB) molecules on Au(111). "Switched" molecule concentrations were measured as a function of exposure time to various incident light wavelengths until stationary concentrations were reached. We examined the spatial correlations of the photo-switching rates. Scanning tunneling spectroscopy was used to reveal the possible dependence of switching dynamics on the electronic structure of the islands. Implications for organic photoactive devices will be discussed.

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