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Bond-selected Single Molecule Photochemistry SHAOWEI LI, SIYU CHEN, W HO, UC Irvine — Chemical reactions typically involve the dynamic reorganization of a large number of atoms and molecules. One persistent goal in the scientific community is to be able to visualize and manipulate individual molecules in a reaction and track their nuclear motions in real time. The combination of a femtosecond (fs) laser with the scanning tunneling microscope (STM) would enable the study of laser photochemistry to attain simultaneous spatial and temporal resolutions. Here, we demonstrate the laser photochemistry at single molecule level with a femtosecond laser STM, and ultimately probe the coherence molecular dynamics with joint fs- sensitivity.

Shaowei Li
UC Irvine

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