

Raman spectroscopy of molecular junctions

Michael Galperin

*University of California at San Diego, Dept. Chem. & Biochem., UH 3250, MC 0340, 9500
Gilman Drive, La Jolla 92093, USA*

Recent advances in experimental techniques at nanoscale, and in particular Raman scattering measurements on current-carrying single molecule junctions promises to become a superior diagnostic tool. Theoretical understanding of optical response of open molecular systems far from equilibrium is of major importance for development of molecular optoelectronic devices. Within simple models we consider intra-molecular and charge-transfer contributions to Raman spectroscopy of molecular junction. Also we discuss a concept of “effective temperature”, its relevance in representation of bias-induced heating, and ability of Raman measurements to provide information on the latter.