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Atomic-resolution Inelastic Electron Tunneling Spectroscopy studies of doping dependence of electron-boson interaction in Bi-2212 JINHO LEE, Cornell University, K. MCELROY, Lawrence Berkeley Laboratory, J. SLEZAK, Cornell University, K. FUJITA, University of Tokyo, Japan, J.-X. ZHU, A.V. BALATSKY, Los Alamos National Laboratory, S. UCHIDA, H. EISAKI, University of Tokyo, Japan, J.C. DAVIS, Cornell University — Inelastic Electron Tunneling Spectroscopy(IETS) has been one of the most powerful tool to probe collective modes in the solids. We use the recently developed *STM-based Atomic-resolution Inelastic Electron Tunneling Spectroscopy(IETS)* technique to study the doping dependence of the electron-boson interactions(EBI) in Bi-2212 high-Tc cuprates. According to our results, the distribution of the bosonic mode energy(Ω) does not change as doping level changes, while the gap distribution changes greatly. Also Ω-maps show nano-scale disorder. We will discuss the possible origin of this doping independent EBI.

Jinho Lee
Cornell University

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