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**Session M14 - Focus Session: STM Spectroscopy of Oxide Superconductors.**  
*FOCUS session, Wednesday morning, March 20*  
*107, Indiana Convention Center*

## **[M14.010] Scanning Tunneling Spectroscopy Studies of the Infinite-Layer Cuprate Sr<sub>0.9</sub>La<sub>0.1</sub>CuO<sub>2</sub>**

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The pairing symmetry and superconducting gap of the electron-doped infinite-layer cuprate, Sr<sub>0.9</sub>La<sub>0.1</sub>CuO<sub>2</sub>, were investigated using scanning tunneling spectroscopy (STS). In the superconducting state, the quasiparticle spectra revealed a momentum-independent energy gap of  $\Delta = 13 \pm 1$  meV, much larger than the BCS value for a superconductor with  $T_c = 43$  K. However, the spectral characteristics were inconsistent with either the BCS theory or simple d-wave pairing. Moreover, no apparent secondary spectral features appeared at energies above  $\Delta$ , and no discernible pseudogap was observed above  $T_c$ , in contrast to the behavior in the hole-doped cuprates. The effects of quantum impurities (Zn or Ni) on the STS also differed from the findings in the hole-doped cuprates. The work at Caltech was supported by NSF, at JPL by NASA, and at Pohang University by the Ministry of Science and Technology of Korea.

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