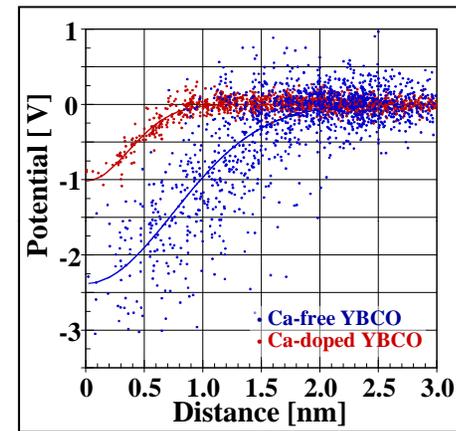
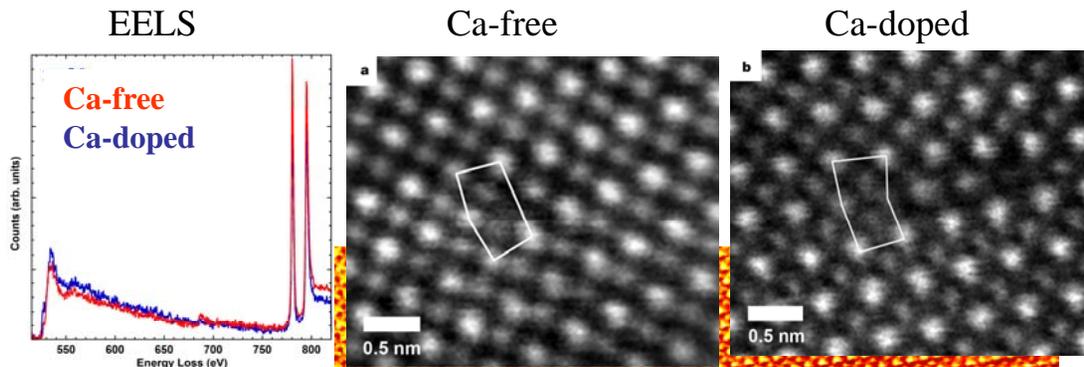


# Research highlights

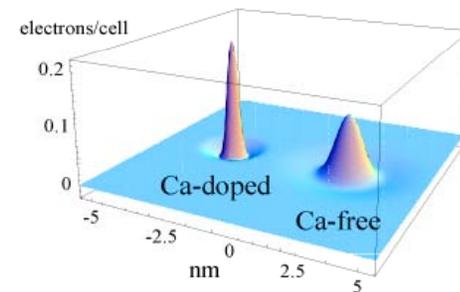
Understanding interfacial superconductivity of Ca doped  $\text{YBa}_2\text{Cu}_3\text{O}_7$  grain boundaries

Core structure of the  $4^\circ$  grain boundaries (GB)

projected potential around the GB dislocation core



space charge at the GB dislocation core



Klie et al, Nature 435, 475 (2005)

Schofield et al, PRL 92, 195502 (2004)