INVITED

Optical Spectroscopic Study on a Superconducting Gap State of YBa_2CuO_y and Fe-Pnictide

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We report on an infrared study of a superconducting gap state for $YBa_2Cu_3O_y$ as a function of doping. In the weakly doped region a superconducting gap is identified directly in the optical conductivity and its value increases with the doping. Superconducting condensation is associated with coherent electronic excitation in the nodal region, exclusive of the anti-nodal region where the pseudogap is open. These findings are compared with the properties of recently discovered high-Tc superconductor Fe-pnictide.

Keywords : High-Tc superconductor, superconducting gap state, $YBa_2Cu_3O_y$, Fe-pnictide, infrared spectroscopy