

Tight-binding Model Study of Interplay of Spin Density Wave and Lattice Distortion in Iron-Oxypnictide Superconductors

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Abstract: We report here two-band tight binding model consisting the kinetic energy of the two bands with fourth nearest-neighbour electron hopping, antiferromagnetic spin density wave(SDW) interaction and lattice distortion. We calculate the Green's functions by using Zubarev's Green's function technique. The lattice strain and SDW gaps are calculated and computed self-consistently. The interplay of these two gap parameters are studied through the tunneling conductance and quasi-particle band dispersion of the pnictide superconductors.

Keywords :Iron oxypnictide superconductors, spin density wave interactions, Jahn-Teller distortion.

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