

Anisotropy of Sommerfeld coefficient in $\text{SmFeAsO}_{1-x}\text{F}_x$ ($x = 0.15$) Single crystal

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Abstract : Magnetic field dependence of Sommerfeld coefficient in the superconducting system of $\text{SmFeAsO}_{1-x}\text{F}_x$ ($x=0.15$) single crystal studied by using modified Phenomenological Ginzburg Landau (GL) theory of multiband superconductors. Following which the anisotropic ratio of Sommerfeld coefficient (Γ) calculated as 7.91. This theoretical result is found to be very close to the experimental result of the same system. This analysis manifests that the proposed model can successfully be used for explaining anisotropy of multiband superconducting systems.

Keywords: Fe based superconductors, single crystal, Thermodynamic properties, Phenomenological G.L. theory.

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