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The temperature dependent surface critical magnetic field (Hc_3) of $K_{0.73}Fe_{1.68}Se_2$ superconductor by semi-anisotropic two band Ginzburg-Landau approach

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In this study, we used a two-band Ginzburg-Landau technique to investigate the surface critical magnetic field (Hc3) of magnetic superconductors, with the first band being anisotropic superconductors and the second band being isotropic superconductors. Following the calculation of the 1st Ginzburg-Landau equation, a surface critical magnetic field and its temperature dependent surface critical magnetic field were solved analytically using the variation method. Based on Changjan and Udomsamuthirun's temperature dependency model, we discovered that fits best with experimental data of K0.73Fe1.68Se2 superconductors, vicinity of the critical temperature.

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