

Abstract Submitted
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Superconductivity in Sr-122 Iron Arsenide System by Yttrium Doping¹ SHEN V. CHONG, KAZUO KADOWAKI, Institute of Materials Science, University of Tsukuba — Superconductivity in SrFe_2As_2 by interlayer electron doping is achieved for the first time with the substitution of 30 to 50 atomic percent of the strontium with yttrium ($\text{Sr}_{1-x}\text{Y}_x\text{Fe}_2\text{As}_2$). In the optimum doped $Y = 0.4$ sample, Hall effect measurements indicate the injection of extra electrons into the system with negative Hall coefficient below room temperature down to T_c , and an electron charge carrier density reaching up to 10^{21} cm^{-3} above 200 K. Temperature dependent magnetization measurements indicate the suppression of the magnetic orderings observed in the parent compound at 60 and 210 K upon yttrium doping; while resistivity versus temperature ($R-T$) measurements show the anomaly above 200 K still persists in the superconducting samples. A maximum onset T_c at 26.4 K based on $R-T$ measurement was observed in $\text{Sr}_{0.6}\text{Y}_{0.4}\text{Fe}_2\text{As}_2$. No superconductivity was observed below 0.3 and above 0.5 Y-doping.

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