Abstract Submitted
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Superconductivity of $Ba_{1-x}K_xFe_2As_2$ with and without artificial disorder over the entire doping range[1] SERAFIM TEKNOWIJOYO, KYUIL CHO, MAKARIY A. TANATAR, RUSLAN PROZOROV, YONG LIU, THOMAS LOGRASSO, Ames Laboratory and Iowa State University, USA, MARCIN KONCZYKOWSKI, LSI, Ecole Polytechnique, France — Effects of electron irradiation on superconducting transition temperature and in-plane London penetration depth were studied in single crystals of $Ba_{1-x}K_xFe_2As_2$ (x= 0.22, 0.34, 0.47, 0.56, 0.65, 0.80, 0.82, 0. 90, 0.92, 1.0). Electron irradiation introduces point - like disorder that gives insight into the superconducting gap structure by studying the effects of increasing scattering. We studied the entire superconducting "dome" and find distinctly different behaviours in underdoped, optimal, and overdoped compositions and unusual behaviour near x = 0.7 - 0.8.

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