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**Superconductivity and ferromagnetism in  $\text{RbEu}(\text{Fe}_{1-x}\text{Ni}_x)_4\text{As}_4$ .**  
YI LIU, YA-BIN LIU, GUAN-HAN CAO, Zhejiang Univ — Hole-doped iron pnictides  $A\text{EuFe}_4\text{As}_4$  ( $A = \text{Rb}, \text{Cs}$ ) are ferromagnetic superconductors with bulk superconductivity at  $T_c \approx 35$  K and Eu-spin ferromagnetism at  $T_m \approx 15$  K. Here, we investigate the hole-compensation effect in  $\text{RbEu}(\text{Fe}_{1-x}\text{Ni}_x)_4\text{As}_4$  by electron doping through Ni substitution. We find that  $T_c$  decreases monotonically with increasing Ni concentration, and superconductivity vanishes at  $x \approx 0.1$  accompanying with the revival of spin-density wave. On the other hand, the Eu-spin ferromagnetism is very robust against the Ni doping, and to our surprise,  $T_m$  hardly changes. Consequently, a superconducting magnet,  $\text{RbEu}(\text{Fe}_{0.925}\text{Ni}_{0.075})_4\text{As}_4$ , in which  $T_c$  ( $\sim 5$  K) is lower than  $T_m$ , is obtained. The electronic phase diagram is concluded.

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