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Pressure shift of the superconducting T_c of $(Pr_{1-x}Sr_x)FeAsO$ and $Sm(O_{1-x}F_x)FeAs$ KALYAN SASMAL, Department of Physics, TcSUH, University of Houston, G. MU, H.-H. WEN, Institute of Physics, Chinese Academy of Sciences, B. LORENZ, Department of Physics, TcSUH, University of Houston, CHING-WU CHU, Department of Physics, TcSUH, University of Houston and Lawrence Berkeley National Laboratory — Pressure plays important role in discovery and unraveling physics of novel superconductors.High Tc iron-based layered compounds can be obtained by hole/electron-doping.To determine if a symmetry between electron and hole-doping exists,we investigated pressure-induced shift in T_c by carryingout resistivity measurements under hydrostatic pressure on hole-doped $Pr_{1-x}Sr_xFeAsO$ up to 1.8GPa using piston-cylinder clamp cell device.The coexistence of superconductivity & spin-density wave behavior were observed and pressure effects on both being investigated. Four probe resistance measurements show T_c increases ($+dT_c/dP$) with pressure for under-doped $Pr_{1-x}Sr_xFeAsO$ similar to high-T_c cuprates. High pressure can compress crystalline structure of material and force its layers to be closer,which might increase material's T_c by improving pressure-induced charge transfer between (Fe_2As_2) and (Pr/Sr)O layers. The pressure effect on T_c of $Pr_{1-x}Sr_xFeAsO$ is being compared with that of electron doped $Sm(O_{1-x}F_x)FeAs$. The results suggest a symmetry appear to exist between electron and hole-doping Fe-pnictide superconductors.

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