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Magnetic and transport properties of V-doped La_{0.7}Ca_{0.3}MnO₃ J.S. PARK, K.K. YU, Y.P. LEE, q-Psi and Dept. of Physics, Hanyang Univ., Seoul, Korea, Y.S. LEE, Division of Information Communication and Computer Engineering, Hanbat National University, Daejeon, Korea, J.-H. KANG, Department of Nano and Electronic Physics, Kookmin University, Seoul, Korea — The effects of substitution of V for Mn on the electronic and the magnetic properties of La_{0.7}Ca_{0.3}MnO₃ have been investigated. The samples show a reentrant magnetic behavior as the V doping is increased. The V doping into the Mn sites leads to a mixed-phase ground state consisting of the ferromagnetic insulating and the ferromagnetic metallic phases at low temperatures. The magnetic relaxation was observed in both the ferromagnetic and the reentrant spin-glass phases, which means the existence of frustration and magnetic disorder in the samples. It was found that the V-doped manganites with aging effect bear the characteristics of a reentrant ferromagnet.

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