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Electronic structures and magnetic properties of $La_{2-x}Sr_xMnNiO_6$ BONGJAE KIM, HONG CHUL CHOI, BEOM HYUN KIM, B. I. MIN, Department of Physics, PCTP, Pohang University of Science and Technology — We have investigated hole carrier doping effects in La_2MnNiO_6, which is getting attraction for being a high T_C ferromagnetic insulator. Employing the *ab-initio* band structure method, we have examined the changes in the electronic structures and the valence states of Sr-doped $La_{2-x}Sr_xMnNiO_6$ with varying Sr doping ratio. Upon Sr doping, which corresponds to the effective hole doping, we have found a transition from a ferromagnetic insulating phase to a robust half-metallic phase. We have verified that the substantially weak x-ray magnetic circular dichroism (XMCD) signal observed for $La_{2-x}Sr_xMnNiO_6$, as compared to the undoped system, is caused by anti-site disorder at B-sites in a Sr-doped system.

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