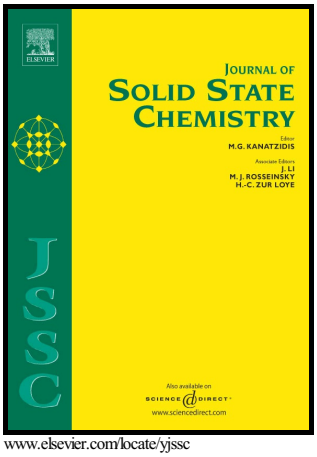

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Observation of Nd ordering in a novel double perovskite Nd_2MgRuO_6 with weak exchange interaction at B-site

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Polycrystalline Nd_2MgRuO_6 has monoclinic $P2_1/n$ structure with an ordered arrangement of Mg^{2+} and Ru^{4+} ions. Magnetic ordering is observed at 1.5 K where the Ru sublattice exhibits type-I antiferromagnetic order with the magnetic moments parallel to the *c*-axis. The Nd^{3+} cations show a ferromagnetic arrangement at this temperature. Nd_2MgRuO_6 exhibits semiconductor like behaviour. Impedance analysis shows the contribution of grain alone to the conduction process till 231 K, above which both the grain and grain boundary contribute.