

Substitution Effect on the Magnetic State of Delafossite CuCrO_2 Having a Spin-3/2 Antiferromagnetic Triangular Sublattice

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We have investigated a substitution effect on transport, magnetic, and thermal properties of delafossite CuCrO_2 having a spin-3/2 antiferromagnetic triangular sublattice by measurements of resistivity, magnetization, specific heat, and neutron scattering. In the presentation, we will discuss unique effects¹ of hole-doping by a substitution of Mg^{2+} ions for Cr^{3+} ions ($S = 3/2$), randomness^{2,3} introduced between CrO_2 layers by a substitution of Ag^+ ions for Cu^+ ions, and spin-dilution⁴ induced in CrO_2 layers by a substitution of Al^{3+} ions for Cr^{3+} ions upon the magnetic state in CuCrO_2 .

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