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【142】 Diluted spin-dimer system $Ba_{3-x}Sr_xCr_2O_8$: single crystal growth and study of the magnetic properties

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Two well studied compounds $Sr_3Cr_2O_8$ and $Ba_3Cr_2O_8$ are insulating dimerized antiferromagnets with magnetic ions. These ions are located in hexagonal bilayers with a strong intradimer antiferromagnetic interaction, that leads to a singlet ground state and gapped triplet states. We report on the effect on the structural and magnetic properties of the spin- $\frac{1}{2}$ -dimer system, $Sr_3Cr_2O_8$, by introducing chemical disorder. Two large single crystals of $Ba_{3-x}Sr_xCr_2O_8$ were grown. The structural and magnetic properties of these compounds were studied by magnetization, heat-capacity and inelastic neutron scattering measurements. These results show a noticeable change in the magnetic properties by a random substitution effect.

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