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Synthesis and Magnetic Dynamics of Multiferroic Chromates

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We describe the preparation routes for the series of polycrystalline ACrO2
(A= Cu, Ag, Li, Pd) chromates using a solid-state reaction technique at different temperatures and partly using a two-stage substitution procedure. All samples have been characterized using X-ray and magnetic measurements. In addition, single crystals of CuCrO2 have been grown by flux method.
CuCrO2 and AgCrO2 have been investigated using high field Electron-Spin-Resonance spectroscopy and quasioptical transmittance technique in the frequency range between 70 GHz and 600 GHz. Two eigenmodes of the antiferromagnetic resonance can be detected. Clear signatures of the spin-flop transition are observed for specific magnetic domains in CuCrO2.

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