

**Electronic supplementary information (ESI) in the
manuscript**

**Magnetic Properties of Bulk BiCrO₃ Studied with *dc* and *ac*
Magnetization and Specific Heat**

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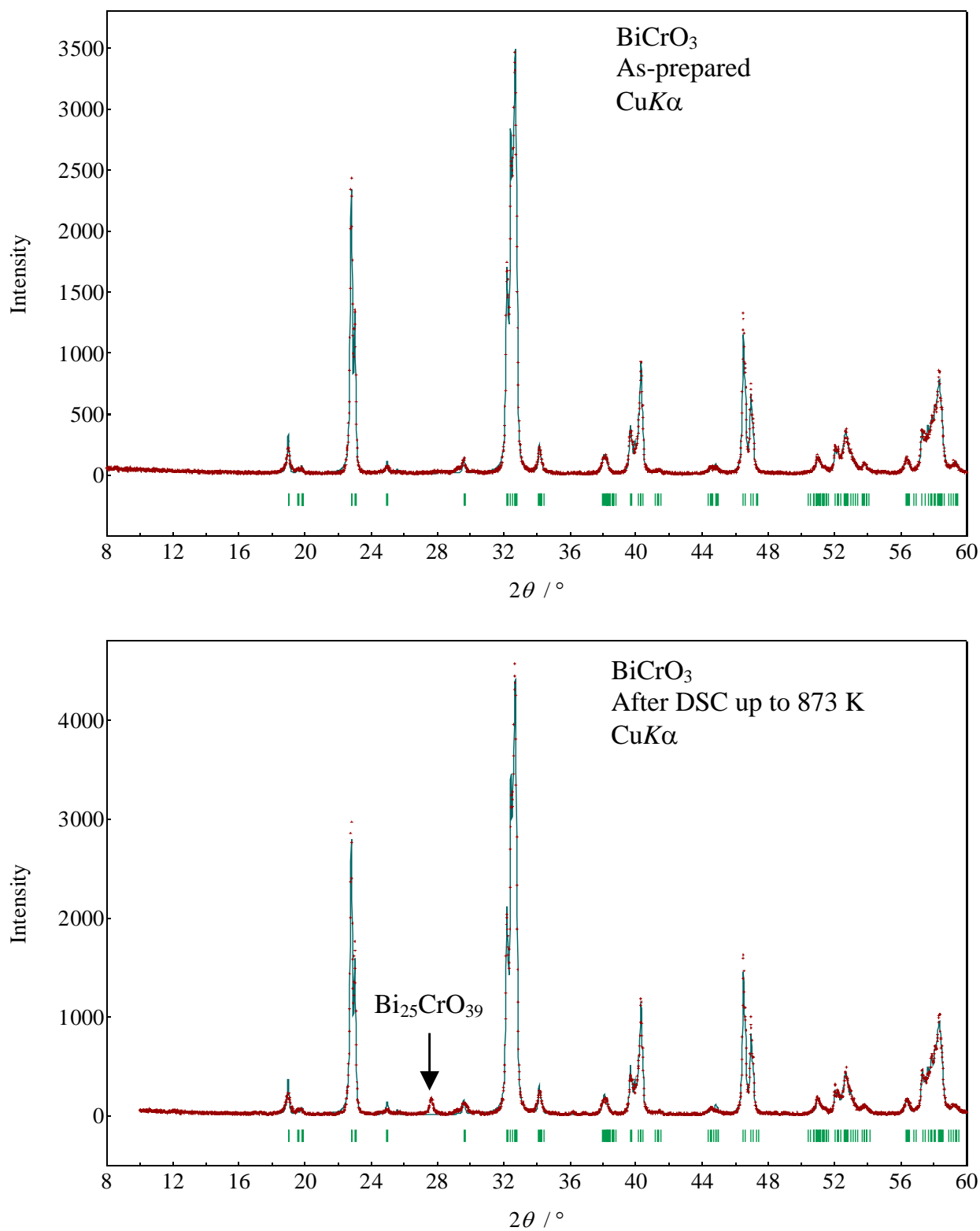


Fig. S1. XRD patterns of the as-prepared BiCrO_3 and after the DSC experiment up to 873 K.

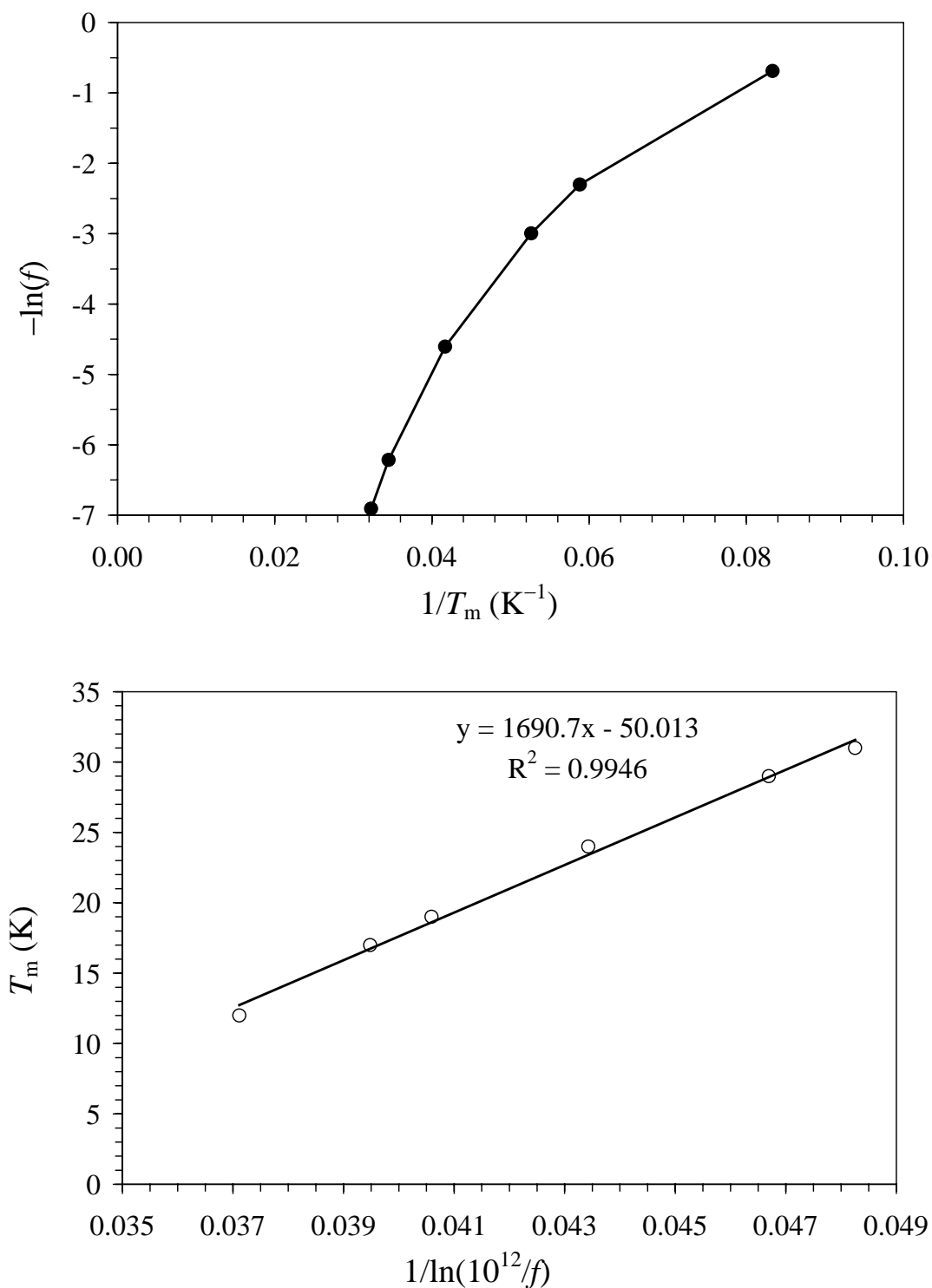


Fig. S2. The upper figure shows the $-\ln(f)$ vs $1/T_m$ curve (the thermal activated Arrhenius law), where T_m is the position of the maximum on the χ'' vs T curves at the given frequency f . The lower figure shows the T_m vs $1/\ln(f_0/f)$ plot with $f_0 = 10^{12}$ Hz (the Vogel-Fulcher law); the fitting parameters ($E_a/k_B = 1690$ K and $T_0 = -50$ K) are given on the figure.

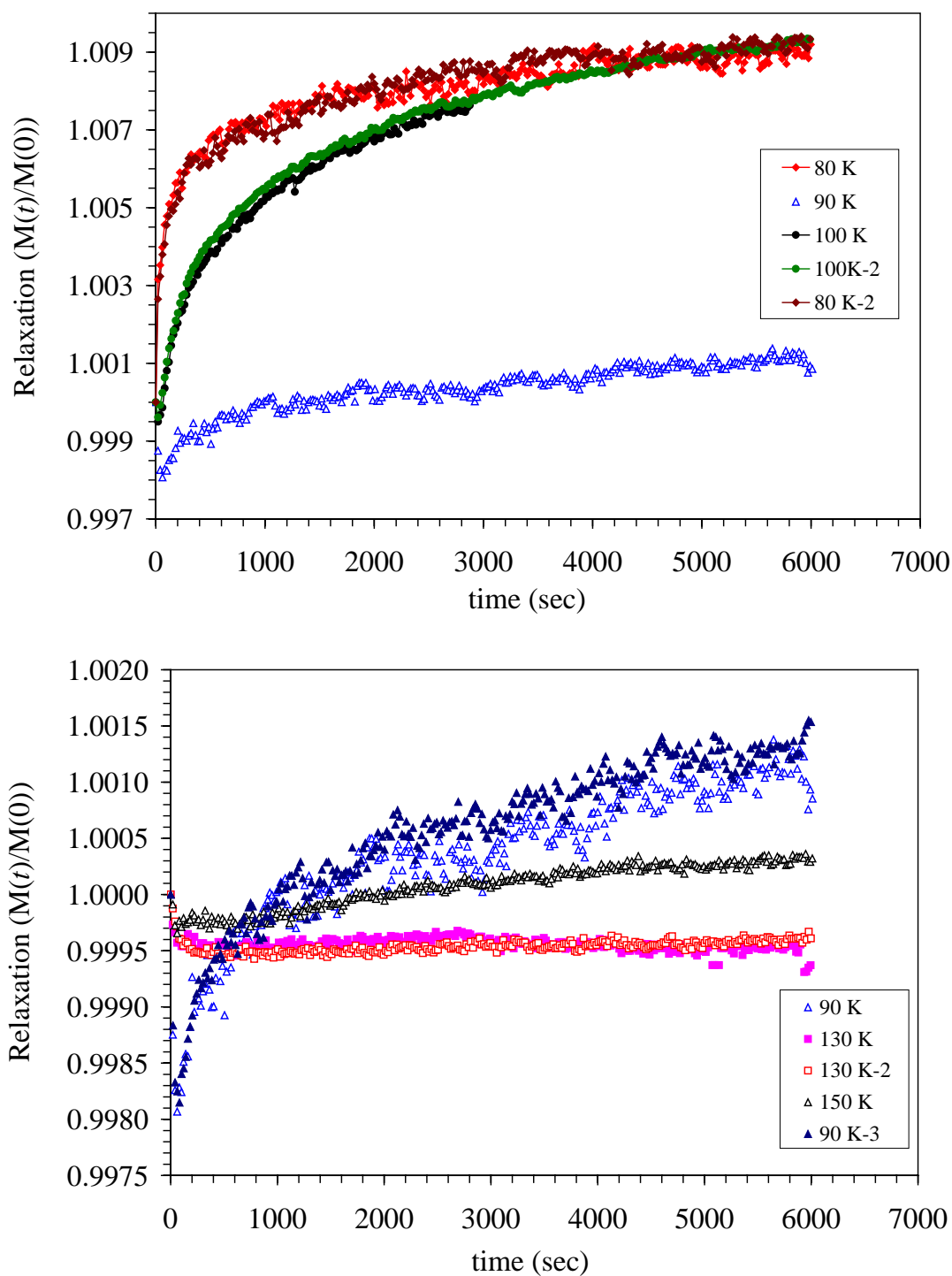


Fig. S3a. Reproducibility of the relaxation curves of BiCrO₃. The time-dependent relaxation curves were measured at 100 Oe after cooling the sample from 200 K to the desired temperature at zero magnetic field (the waiting time before setting 100 Oe was 5 min).

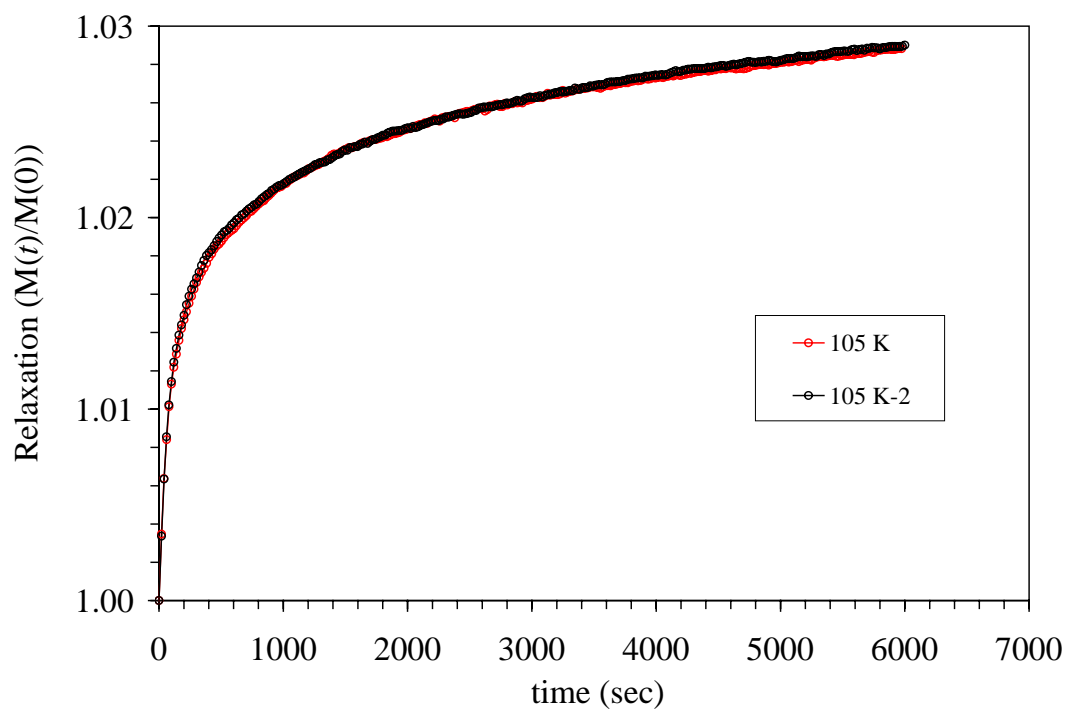


Fig. S3b. Reproducibility of the relaxation curves of BiCrO_3 .

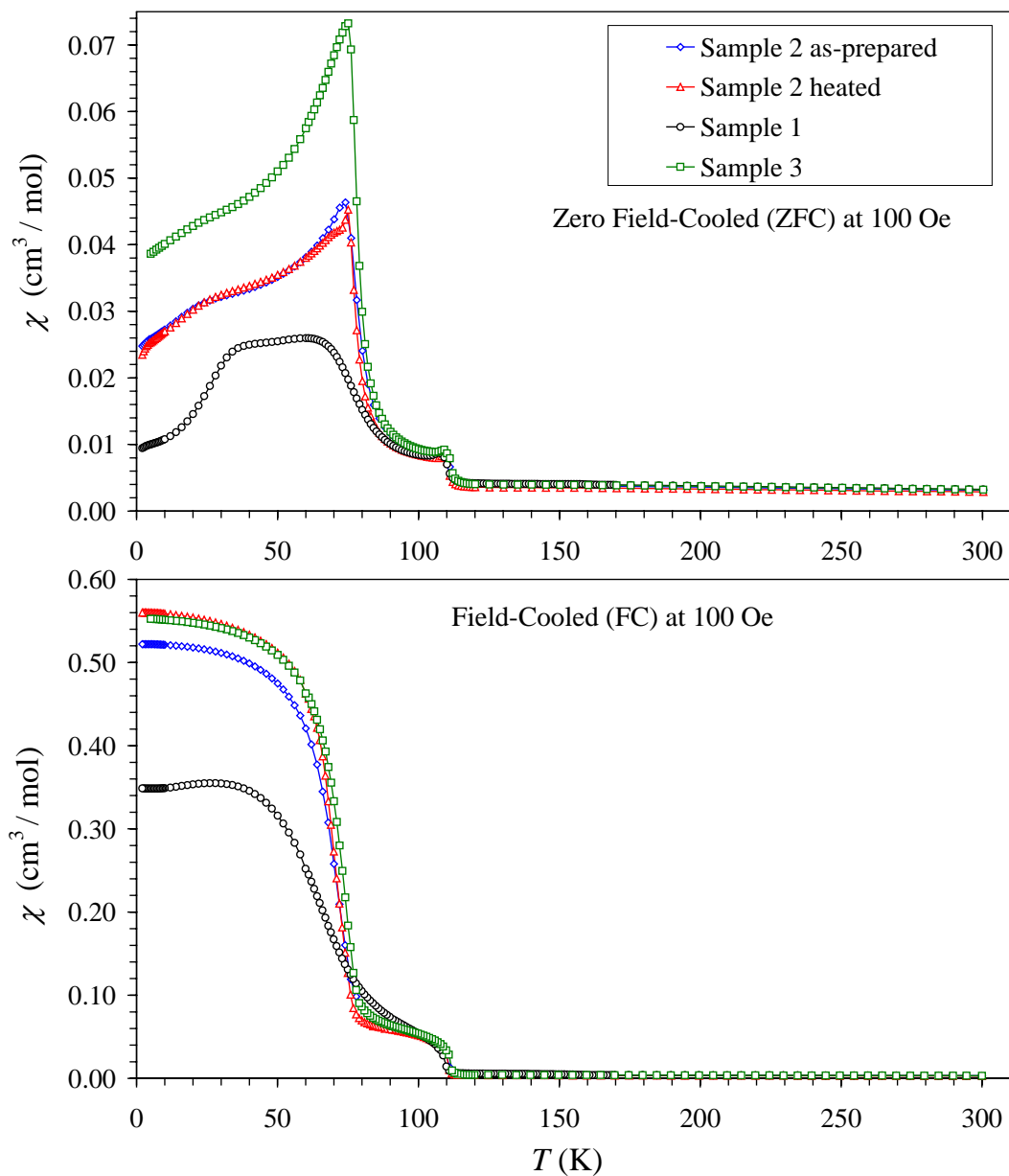


Fig. S4a. The ZFC and FC dc magnetic susceptibility ($\chi = \mathbf{M}/\mathbf{H}$) curves of different BiCrO_3 samples (sample 1 as-prepared, sample 3 as-prepared, sample 2 as-prepared, and sample 2 heated) measured at 100 Oe. The curves for the as-prepared sample 2 are shown, and also for sample 2 after heating in air at 550 K (2 h) and cooling to room temperature for 40 h (sample 2 heated).

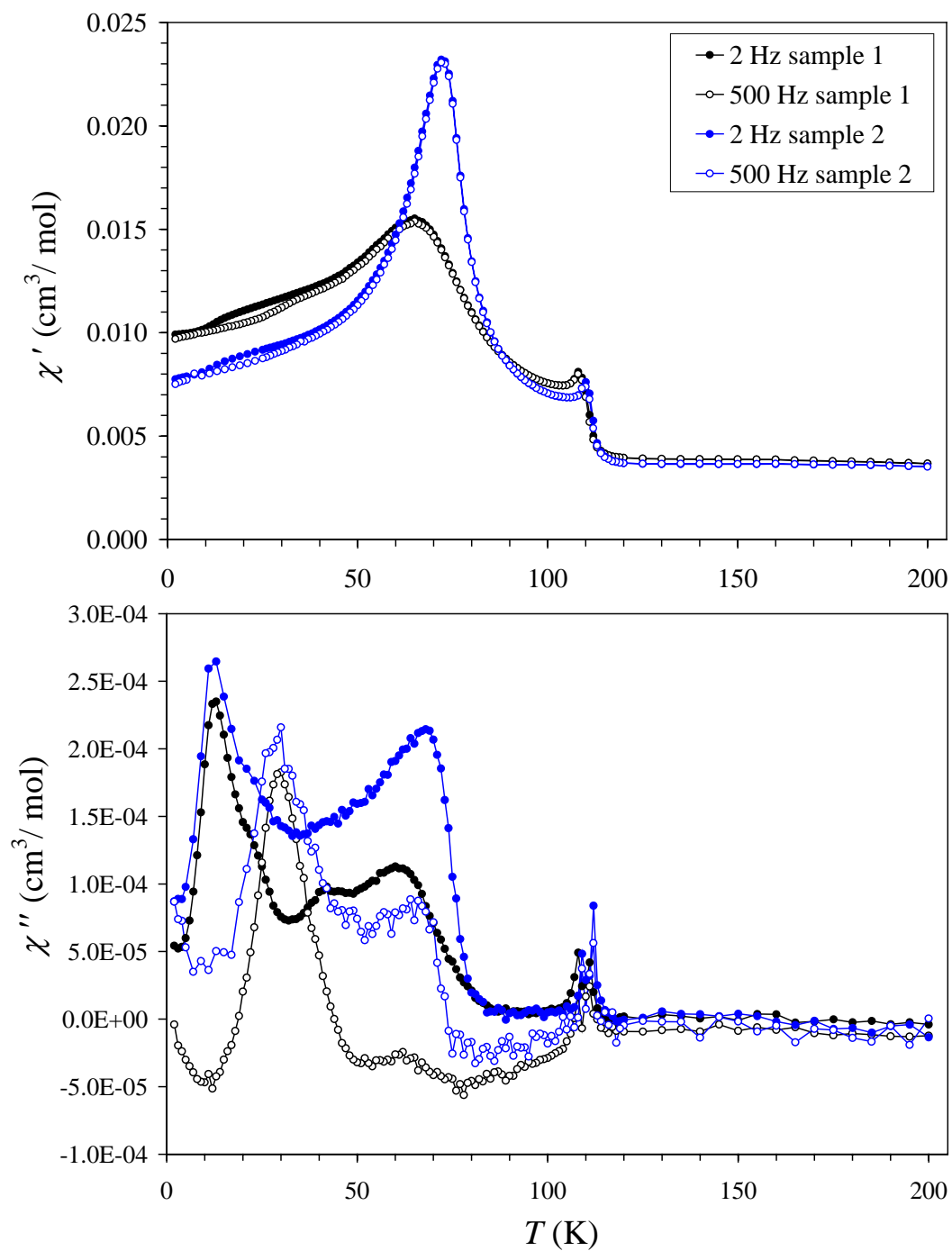


Fig. S4b. The real χ' and imaginary χ'' parts of the ac susceptibilities of different BiCrO_3 samples (sample 1 as-prepared and sample 2 as-prepared) as a function of temperature at frequencies $f = 1.99$ and 498.7 Hz. Measurements were performed on cooling at zero static field using an ac field with the amplitude $H_{ac} = 5$ Oe.

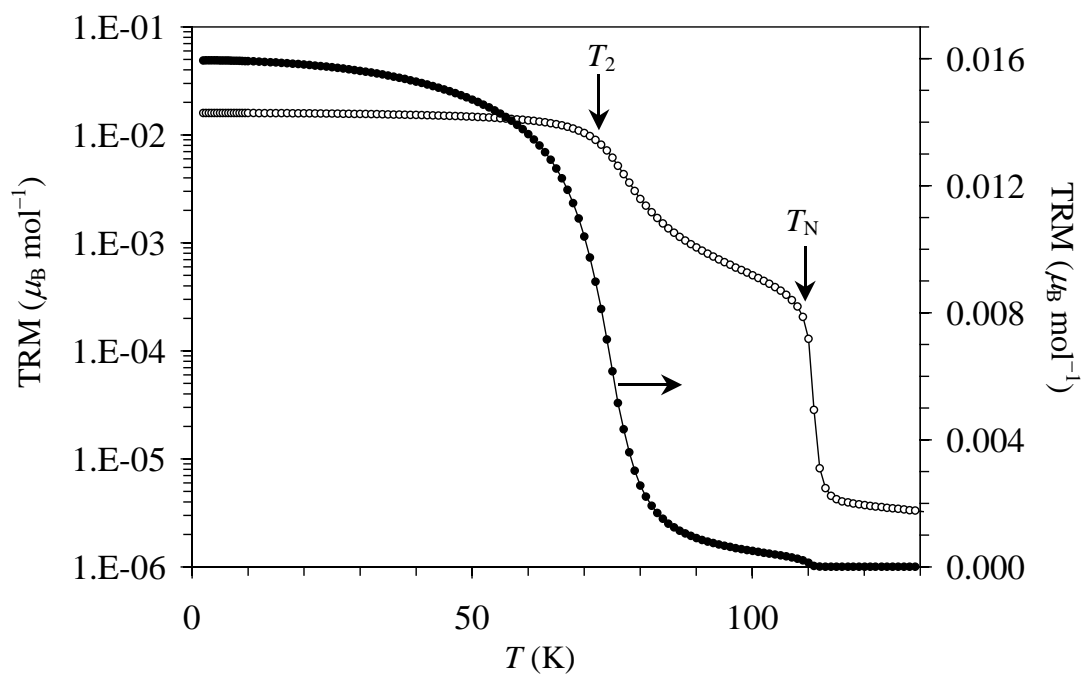


Fig. S4c. The thermoremanent magnetization (TRM) curve as a function of temperature for BiCrO_3 (sample 2 as prepared). The TRM curve was measured at zero magnetic field on heating after cooling the sample from 270 K to 2 K at 1000 Oe. The same curve is given in the linear and logarithmic scales.

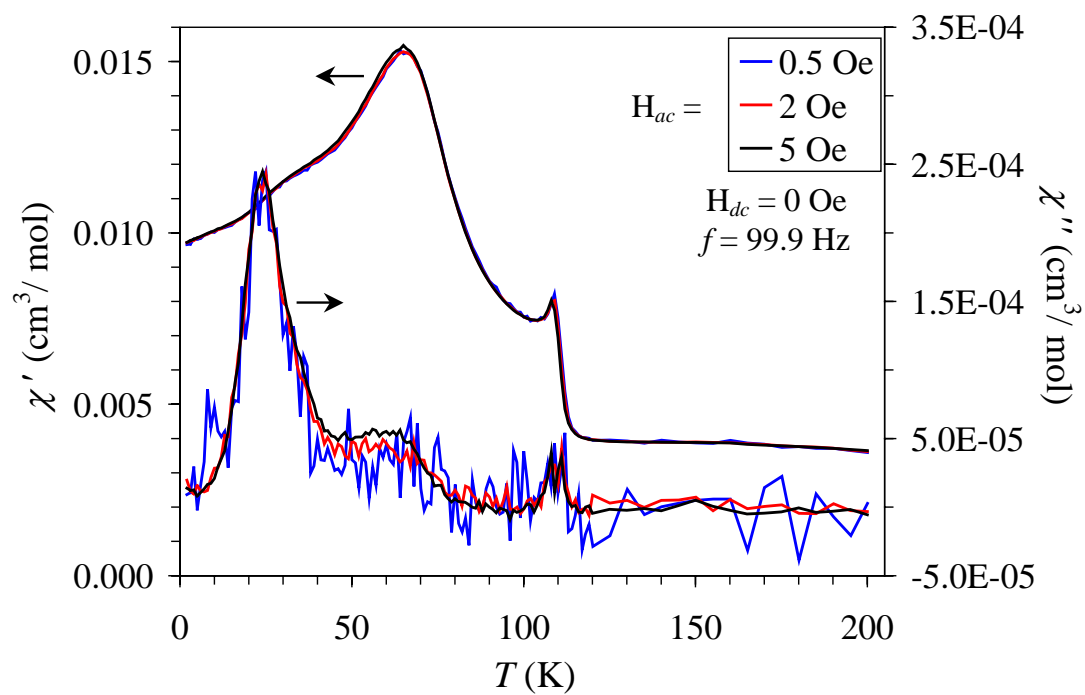


Fig. S5. The real χ' and imaginary χ'' parts of the ac susceptibilities of BiCrO_3 (sample 1 as-prepared) as a function of temperature at different H_{ac} . Measurements were performed on cooling at zero static field using $f = 99.9$ Hz.