



Physical properties of the new ferro-axial multiferroic $\text{Cu}_3\text{Nb}_2\text{O}_8$ [R.D. Johnson et al., Phys. Rev. Lett. 107, 137205 (2011)]. (a) The specific heat of $\text{Cu}_3\text{Nb}_2\text{O}_8$. (b) The magnetic susceptibility of a single crystal sample, measured in a field of 1000 Oe \parallel (3,2,3). The inset shows the same measurement up to room temperature. (c) The electric polarization in three approximately orthogonal and the general (6, 2, 6) directions, determined through the integration of a pyroelectric current, measured at a warming rate of 1 K/min, having field-cooled (FC) the sample with $E = 2$ kV/cm. The (6, 2, 6) data were measured down to 21 K and extrapolated below. (d) The temperature dependence of the neutron magnetic diffraction intensity of the fundamental reflection at $d = 10.4$ Å.