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The magnetoelectric effect on the novel multiferroic Co_3TeO_6 C.C. CHOU, S. MUKHERJEE, J.H. ZHANG, Department of Physics, National Sun Yat-Sen University, Kaohsiung 804, Taiwan, J.L. HER, Division of Natural Science, Center for General Education, Chang Gung University, Tao-Yuan 333, Taiwan, H. BERGER, Institutes of Physics of Complex Matter, Ecole Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland, H.D. YANG, Department of Physics, National Sun Yat-Sen University, Kaohsiung 804, Taiwan — The magnetic, thermal, and dielectric measurements were performed on a single crystal sample Co_3TeO_6 . Two anomalies are observed at $T_1 \sim 26$ K and $T_2 \sim 18$ K in magnetic susceptibility and specific heat measurements. Dielectric constant data show a step anomaly at 18 K, which does not display frequency-dependent behavior but a magnetoelectric effect. Furthermore, the values of the magnetoelectric coupling constant γ were calculated, which are 0.0268 and 0.0239 at 7 K and 13 K, respectively. The temperature-dependent X-ray diffraction suggests that the lattice parameters slightly deviate from linear trend as temperature down to 26 K, and then shows an anomalous variation around 18 K, where a structural distortion probably appears. All phenomena of our results indicate that Co_3TeO_6 is one member of multiferroic materials

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