

Abstract Submitted
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Temperature Dependence Measurement of the Light Yield in Stilbene ISAAH COX, East Tennessee State University, ZHAOWEN TANG, MELISSA BOSWELL, STEVEN CLAYTON, JOHN GOETT, ELENA GUARDINCERRI, NGUYEN PHAN, JASON LASHLEY, TAKEYASU ITO, Los Alamos National Laboratory — Dark matter particle masses have been well constrained in the $> 10 \text{ GeV}/c^2$ range due to current direct detection efforts. To probe lower masses, it is necessary to use low Z elements in detectors, which produce higher nuclear recoil energies. We plan to explore the possibility of using hydrocarbon crystals as material for scintillation/phonon detection. Here, we present the temperature dependence of light yield for a stilbene crystal ($\text{C}_{14}\text{H}_{12}$) down to 4 Kelvin which will help determine the energy threshold for photon detection.

Isaiah Cox
East Tennessee State University

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