

Abstract Submitted  
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**Positive Muonium in Indium Oxide**<sup>1</sup> BRITTANY BAKER, Texas Tech University, Y.G. CELEBI, Istanbul University, R.L. LICHTI, P.W. MENGYAN, Texas Tech University — Using Muon Spin Relaxation (MuSR) measurements, we are investigating the diffusion of the positively charged ionic state of muonium (muonium is a muon plus a captured electron) defects in  $\text{In}_2\text{O}_3$ . The muonium is treated as a light hydrogen analog. Zero field (ZF) measurements were taken from 100 K up to 750 K. This range of temperatures allows for investigation of how the muonium defect center diffuses through the material. The global diffusion barrier energy is being pursued at higher temperatures.  $\text{In}_2\text{O}_3$  is a semiconducting material in the class of transparent conducting oxides (TCO) that are commonly being used in semiconductor optical devices, such as solar cells and LEDs.

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