

Supplementary Information

Processing-Phase Diagrams: A New Tool for Solution-Deposited Thin-Film Development Applied to the $\text{In}_5\text{O}(\text{OPr}^i)_{13} - \text{In}_2\text{O}_3$ System

Robert M. Pasquarelli,*^a Maikel F. A. M. van Hest,^b Philip A. Parilla,^b John D. Perkins,^b Ryan O'Hayre^a and David S. Ginley^b

^a Department of Metallurgical and Materials Engineering, Colorado School of Mines, Golden, CO 80401, USA

^b National Renewable Energy Laboratory, Golden, CO 80401, USA

* E-mail: robert.pasquarelli@gmail.com

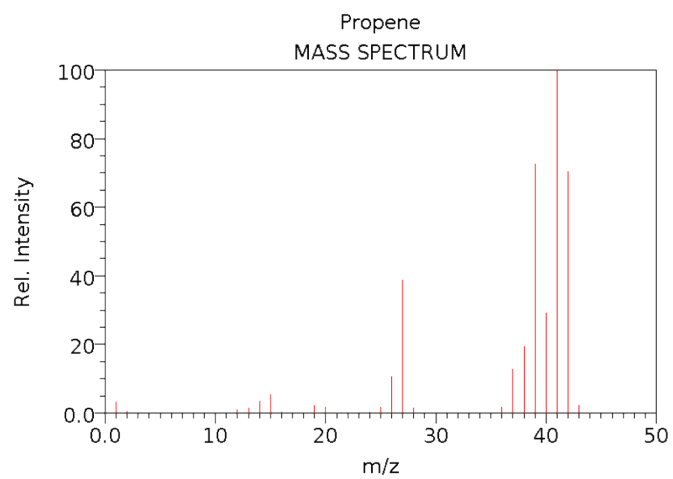
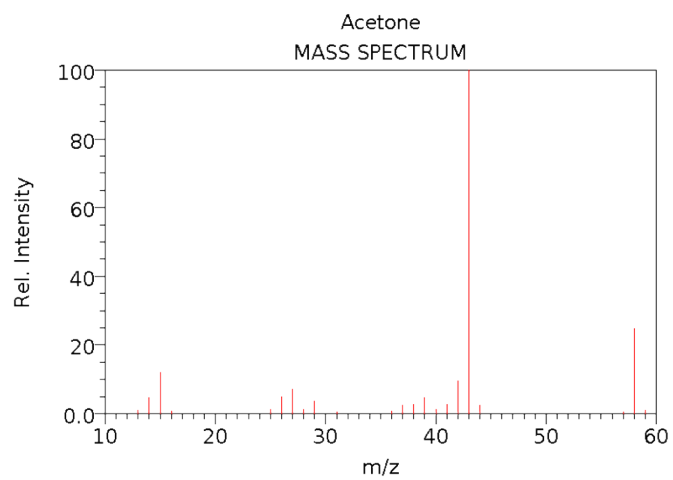
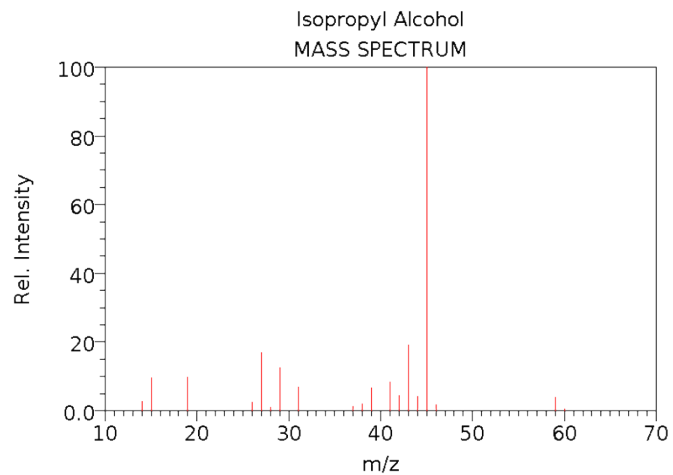


Figure S1. NIST mass spectra of isopropanol, acetone, and propene. [webbook.nist.gov]

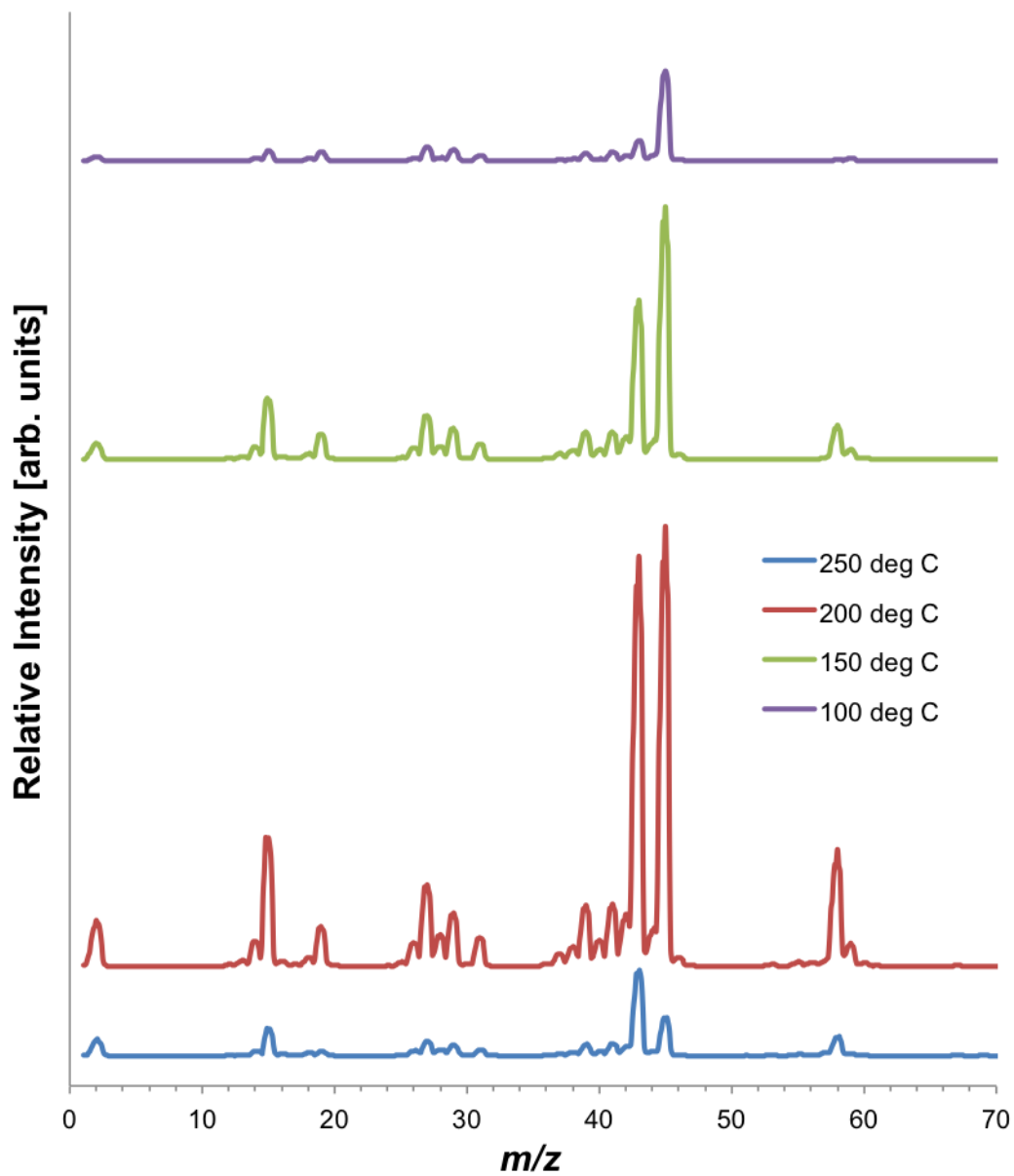


Figure S2. Mass spectra of the decomposition of $\text{In}_5\text{O}(\text{OPr}^i)_{13}$ as a function of select temperatures. The characteristic increasing peak at 43 m/z during decomposition is attributed to the acylium ion ($\text{H}_3\text{C}-\text{C}\equiv\text{O}^{\oplus}$).

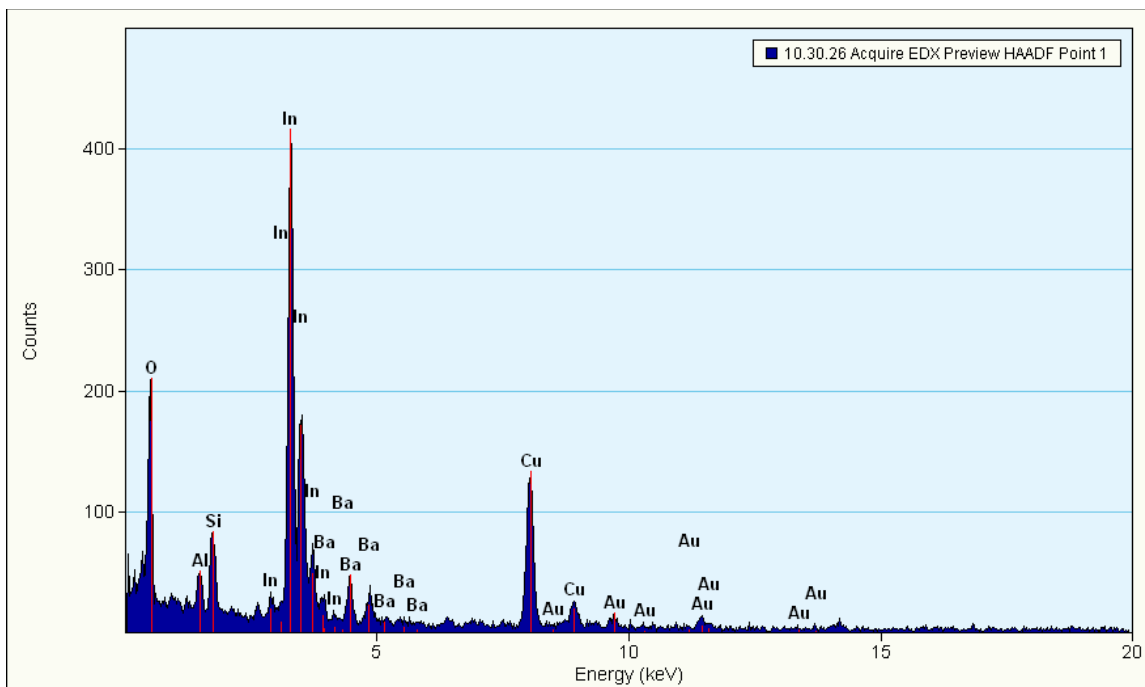


Figure S3. STEM-EDS spectra of undoped In_2O_3 film.

The primary signals are due to In and O. Trace Ba was observed. This is not surprising as it is an impurity from synthesis. The supplier produces the compound via the method in US Patent No 7585992 by Leedham, which uses Ba rather than Na in the synthesis to improve the yield of the cluster. The other signals are from the TEM grid and sputtered metal protection layers. No significant C content was observed.