$$\begin{array}{c} R^{1} \\ N = N \\ \hline \\ R^{2} - Li \\ \hline \\ Et_{2}O \\ \hline \\ -78 \ ^{\circ}C, \ 30 \ min \\ \text{then r.t., 1 h} \\ \hline \\ R^{1} = IPr, \ sBu, \ tBu \\ \hline \\ R^{1} = IPr, \ sBu, \ tBu \\ \hline \\ R^{1} = IPr, \ sBu, \ tBu \\ \hline \\ In[R^{1}N_{3}R^{2}]_{3} \\ \hline \\ 1 \ R^{1} = R^{2} = IPr \ (76\%) \\ 2 \ R^{1} = IPr; \ R^{2} = sBu \ (60\%) \\ 3 \ R^{1} = IPr; \ R^{2} = tBu \ (69\%) \\ 4 \ R^{1} = R^{2} = sBu \ (42\%) \\ 5 \ R^{1} = R^{2} = tBu \ (80\%) \\ 6 \ R^{1} = R^{2} = tBu \ (80\%) \\ \end{array}$$

Scheme 1. Synthesis of indium(III) triazenide precursors **1-6**.

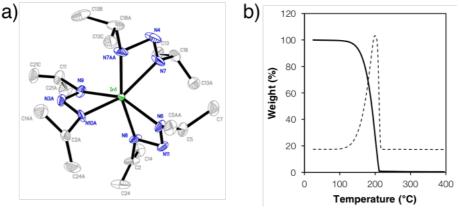


Figure 1. a) ORTEP drawing of **1** with thermal ellipsoids at the 50% probability level. All hydrogen atoms were removed for clarity. b) Thermogravimetric analysis of compound **1**.

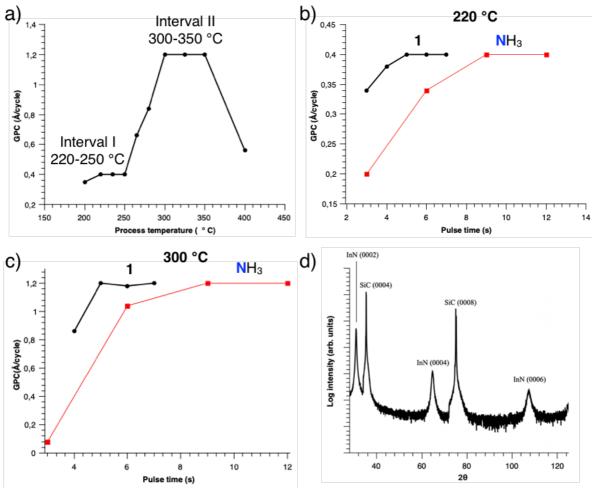


Figure 2. a) The growth dependence on process temperature using 1 and NH₃ plasma. b) The growth per cycle behavior of 1 and NH₃ pulses deposited at 220 °C. c) The growth per cycle behavior of 1 and NH₃ pulses deposited at 300 °C. d) XRD of InN on 4H-SiC (0001) using 1 and NH₃ plasma at 325 °C showing epitaxial InN along the c-axis.