SnO via Water-Based ALD employing Tin(II) Formamidinate: Precursor Characterization and Process Development

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Supplementary Information
1H and 13C NMR

Bis(diisopropylformamidinato) tin(II) ([Sn(iPr2fAMD)2]), 1

Figure S 1: 1H NMR of compound 1.

Figure S 2: 13C NMR of compound 1.
Bis(diisopropylacetamidinato) tin(II) ([Sn(iPr₂AMD)₂]), 3

**Figure S 3:** $^1$H NMR of compound 3.

**Figure S 4:** $^{13}$C NMR of compound 3.
**Bis(ethyl-tert-butyl-acetamidinato) tin(II) ([Sn(Et^tBuAMD)_2]), 4**

**Figure S 5**: $^1$H NMR of compound 4.

**Figure S 6**: $^{13}$C NMR of compound 4.
ALD Sequence, GI-XRD, and XPS

**Figure S 7** Pulse and purge times of the ALD process schematically displayed.

**Figure S 8** GI-XRD patterns for an as deposited (at 220 °C) SnO thin film and for the same film after annealing at 320 or 420 °C. The two peaks indicated by the arrows and enlarged in the insets are the (001) and (213) reflections of the SnO phase.
Figure S 9 XPS survey spectra of a SnO thin film deposited on Si(100) at 180 °C.