Supplementary information

Improving the chemical potential of nitrogen to tune the electron density and mobility of $ZnSnN_2$

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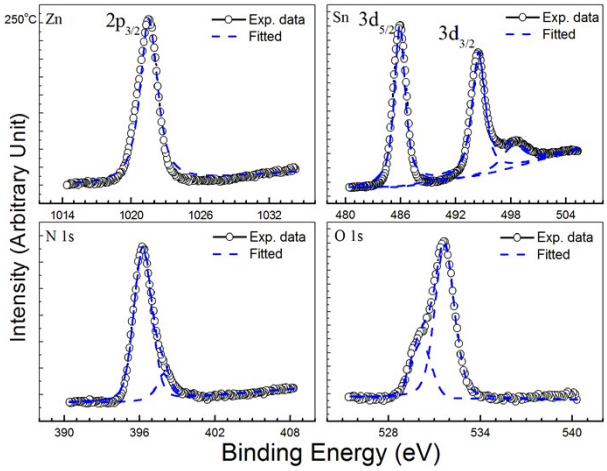
Supplementary information

The high resolution XPS spectra of the elements in the samples deposited at 250,300 and 350 oC were shown below in Figure S1. The peak at 497.5-498.6 present in the XPS spectra of Sn is from the Auger peak of Zn L3M45M45.[1] From Figure S1, the binding energy of the elements can be obtained and are present in Table S1.



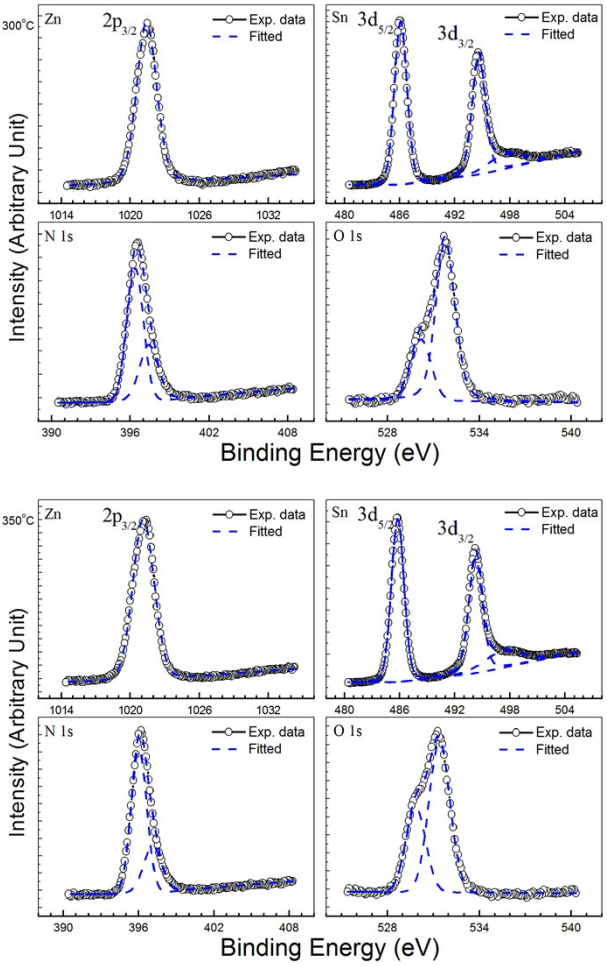


Figure S1 The high resolution bingding energy spectra of the elements in the samples deposited at 250, 300 and 300 °C. The peak at 497.5-498.6 present in the XPS spectra of Sn is from the Auger peak of Zn L3M45M45.

Notes and references

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†Electronic Supplementary Information (ESI) available: The high resolution binding energy spectra of the samples deposited at 300-3500C are in ESI. See DOI: 10.1039/x0xx00000x

Table S1 The binding energy (eV) of the elements in the samples deposited at different substrate temperatures T_{sub} (°C).

T_{sub}	Zn		Sn		N 1s		O 1s	
	$2p_{3/2}$	L3M45M45	$3d_{3/2}$	$3d_{5/2}$	Lattice	surface	Substitutional	absorption
250	1021.5	498.4	485.9	494.5	396.2	397.9	530.1	531.7
300	1021.4	497.7	486.0	494.5	396.4	397.4	530.2	531.8
350	1021.2	497.5	485.8	494.2	396.0	397.1	529.8	531.4