Supporting Information for

Liquid Metal Based Route for Synthesizing and Tuning Gas Sensing Elements

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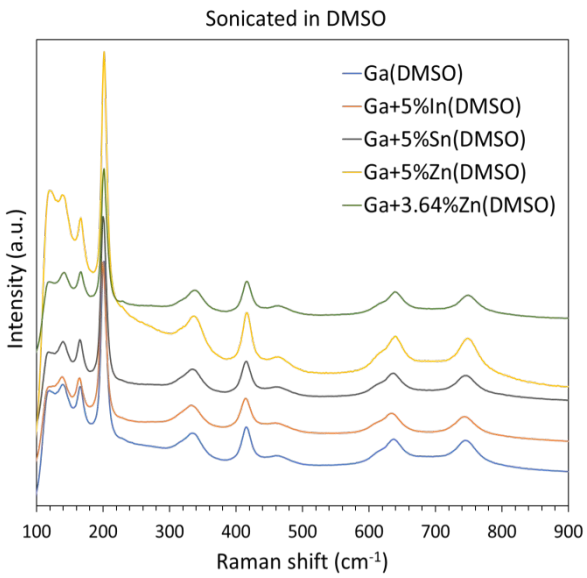

Figure S1. Raman spectra for all samples prepared in DMSO. The rise of Raman spectra at approximately 143, 168, 200, 341, 418, 470, 642 and 750 cm^{-1} are all inferred to Ga_2O_3.[1-4]

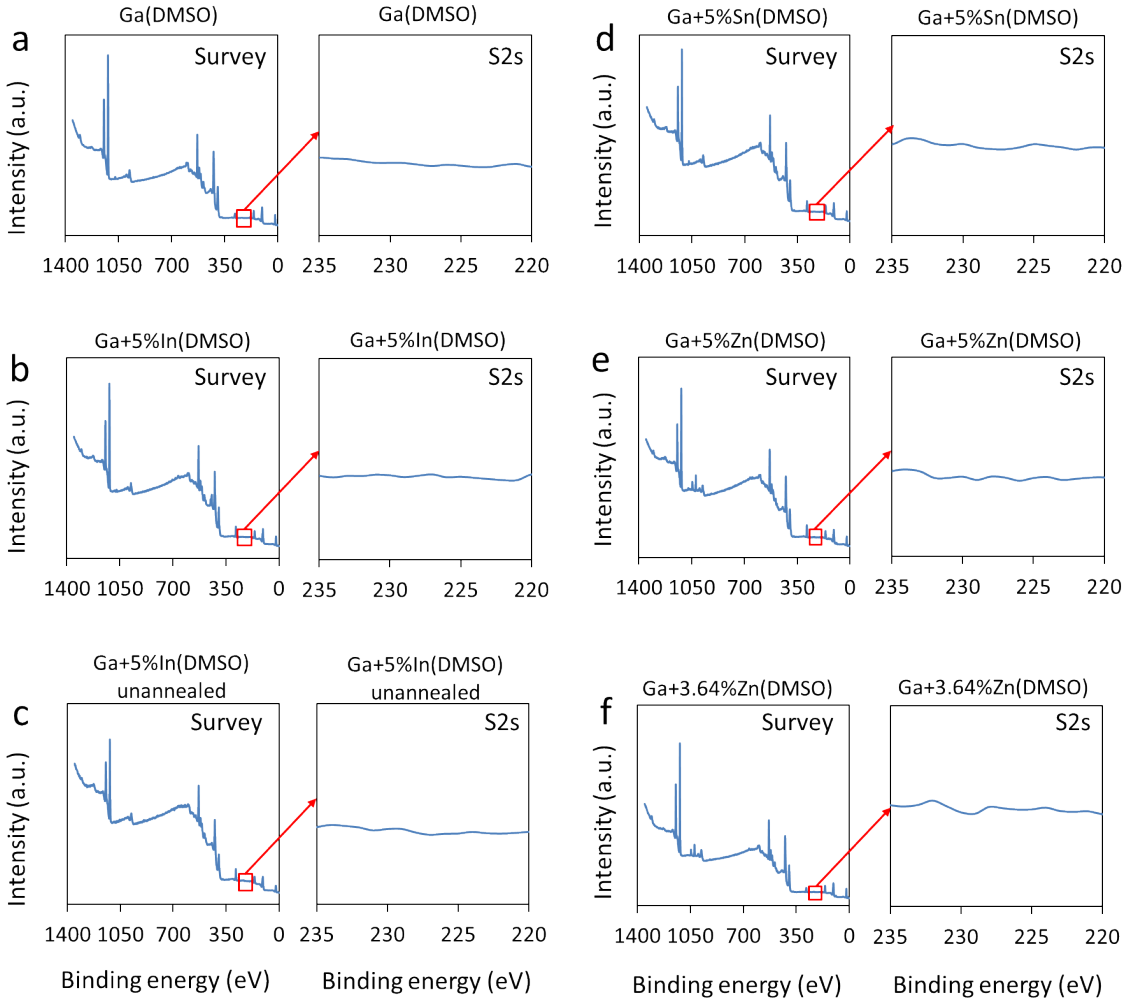

Figure S2. XPS spectra of (a) annealed Ga, (b) annealed Ga+5%In, (c) unannealed Ga+5%In, (d) annealed Ga+5%Sn, (e) annealed Ga+5%Zn and (f) annealed Ga+3.64%Zn samples sonicated in DMSO.

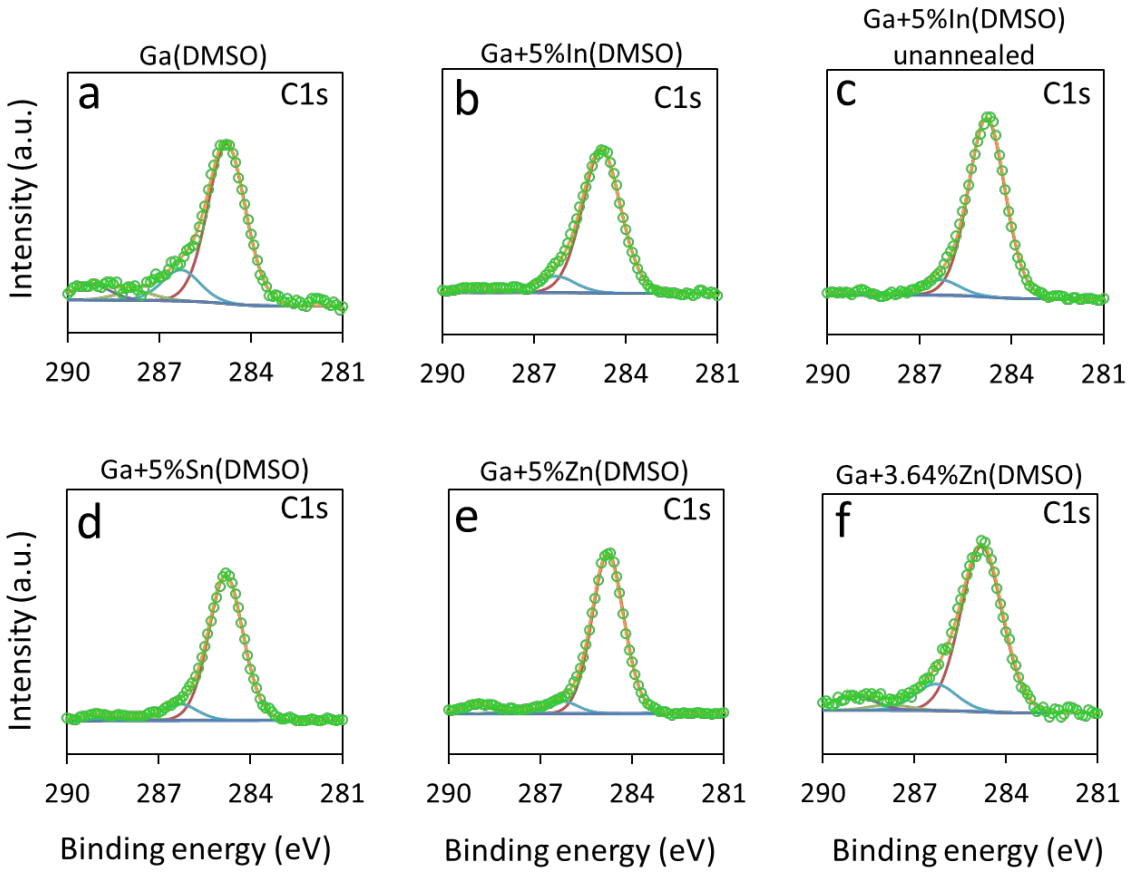

Figure S3. XPS spectra of the C 1s region for samples sonicated in DMSO: (a) annealed Ga, (b) annealed Ga+5%In, (c) unannealed Ga+5%In, (d) annealed Ga+5%Sn, (e) annealed Ga+5%Zn and (f) annealed Ga+3.64%Zn.

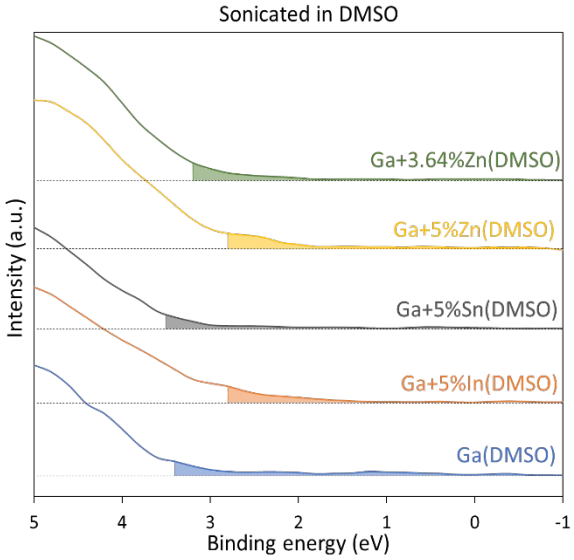

Figure S4. XPS valence band spectra of the samples synthesized using DMSO as the dispersion solvent.

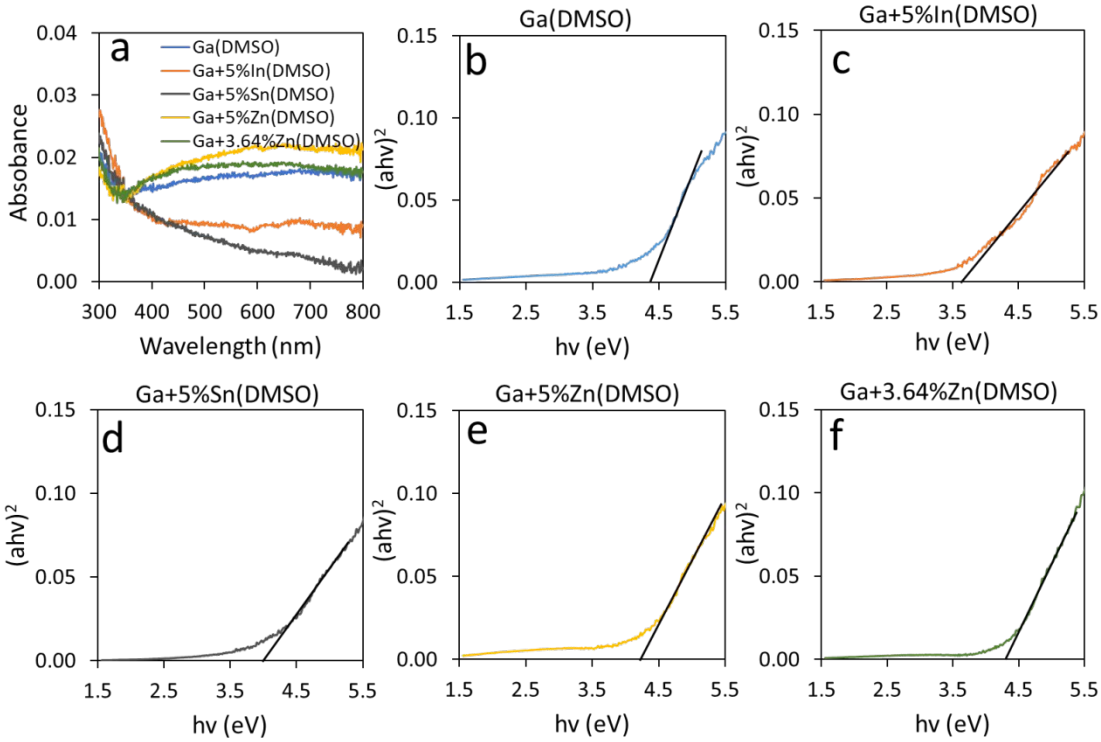

Figure S5. (a) UV-Vis absorption spectra for samples prepared in DMSO and the Tauc plots for these samples: (b) Ga, (c) Ga+5%In, (d) Ga+5%Sn, (e) Ga+5%Zn and (f) Ga+3.64%Zn.

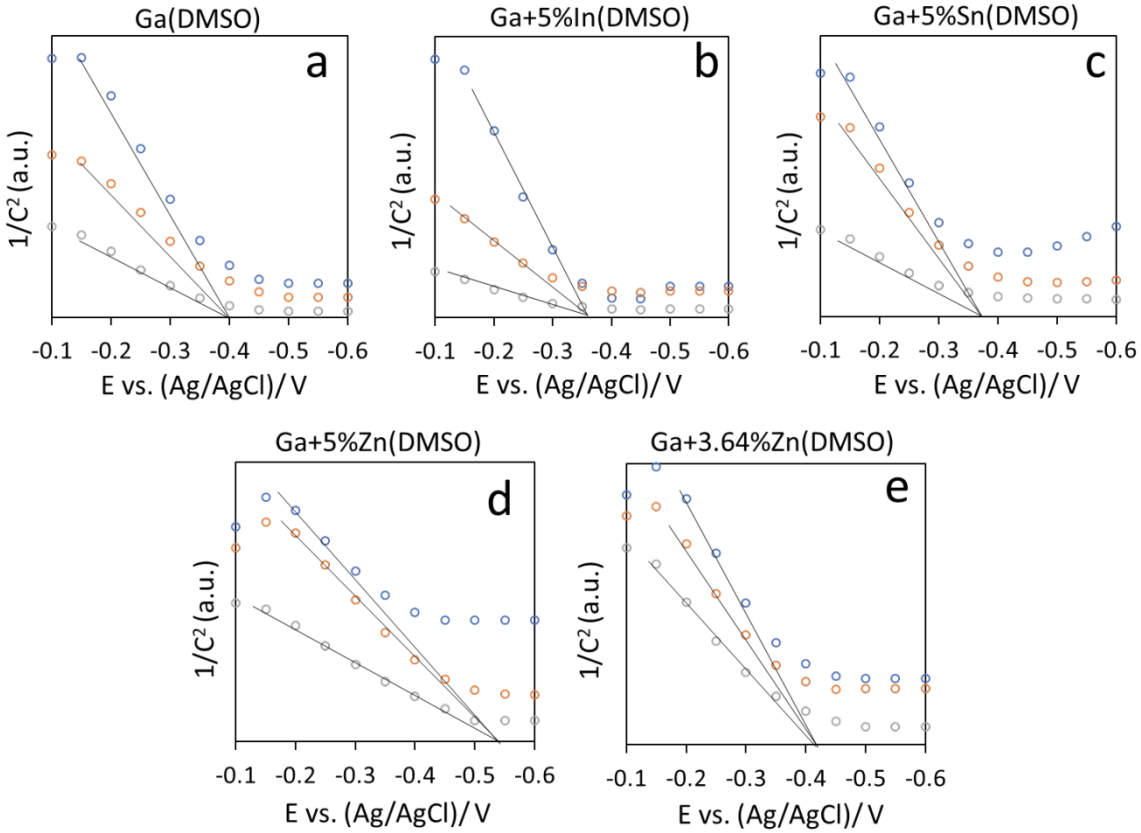

Figure S6. Mott-Schottky plots of samples prepared in DMSO: (a) Ga, (b) Ga+5%In, (c) Ga+5%Sn, (d) Ga+5%Zn and (e) Ga+3.63%Zn.

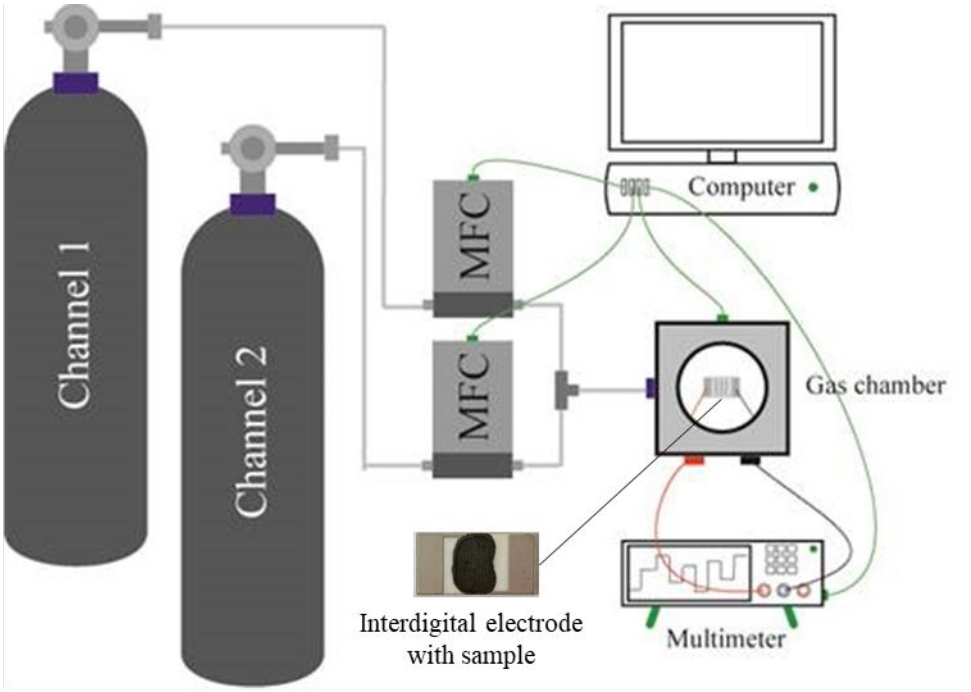

Figure S7. Schematic illustration of the gas sensing set up.

REFERENCES

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