

Supporting Information

One-pot synthesis of novel ligand-free Tin(II)-based hybrid metal halide perovskite quantum dots with high anti-water stability for solution-processed UVC photodetectors

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KEYWORDS: Sn-based hybrid metal halide perovskites, ligand-free quantum dots, UVC photodetectors, anti-water stability

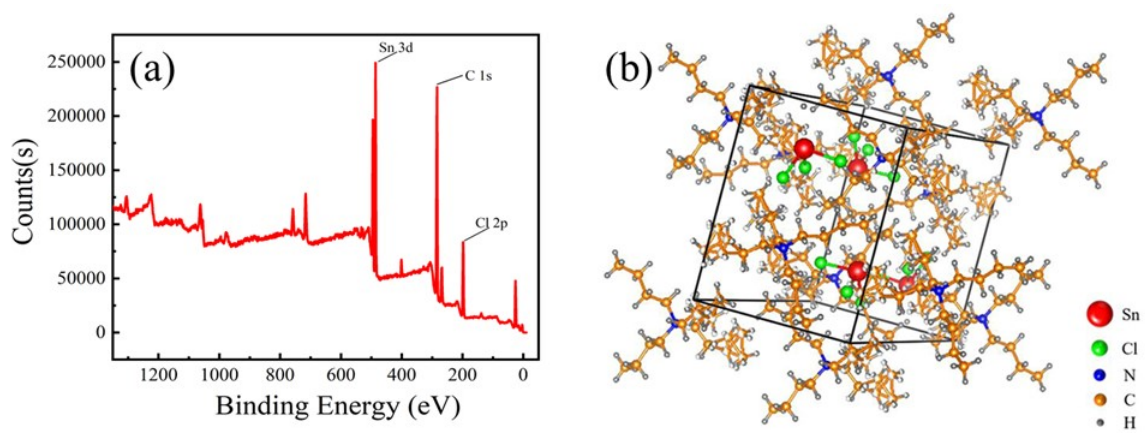


Figure S1. (a) XPS of the TBASnCl₃ QDs film; (b) The structure diagram of the TBASnCl₃ QDs.

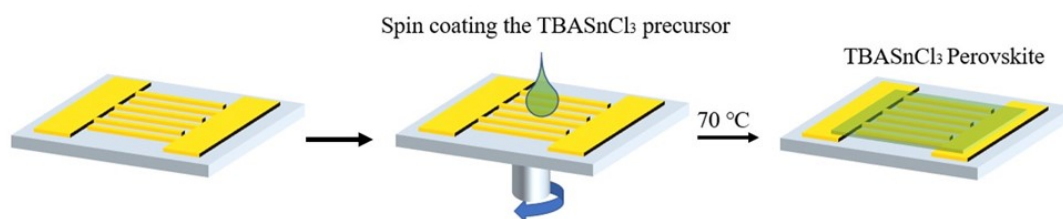


Figure S2. Schematic diagrams of the processing procedure for lateral photodetectors Au/TBASnCl₃/Au.

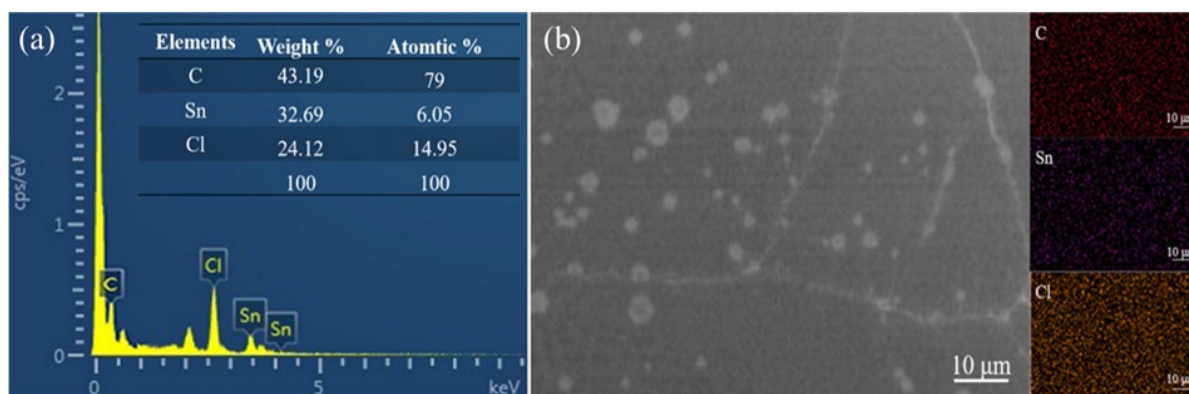


Figure S3. (a) EDS and (b) analysis of the TBASnCl₃ QDs film.

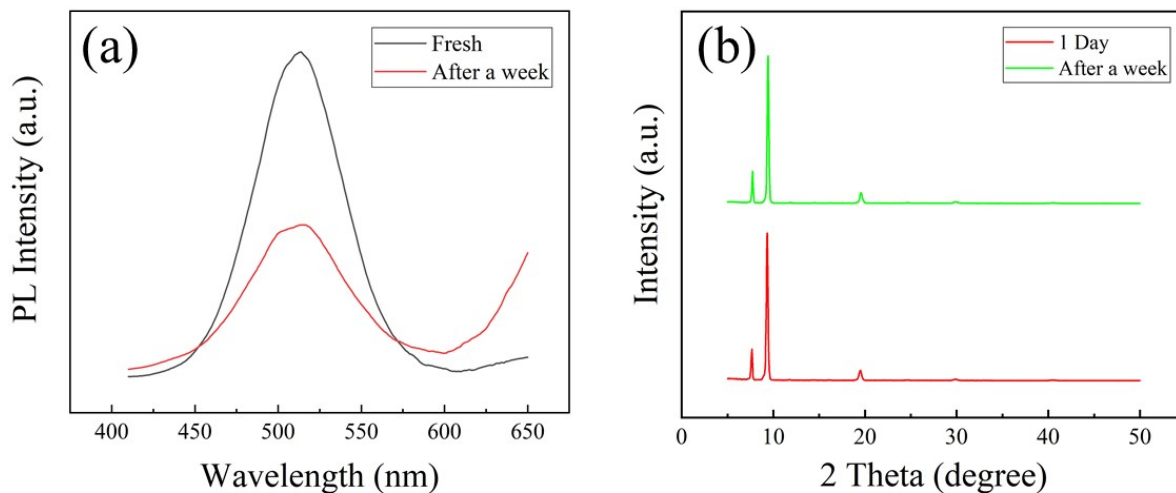


Figure S4. (a) PL spectra and (b) XRD patterns of TBASnCl₃ QDs film after depositing in the ambient atmosphere with an air humidity of 60 % just after its fabricating and after one week, respectively.

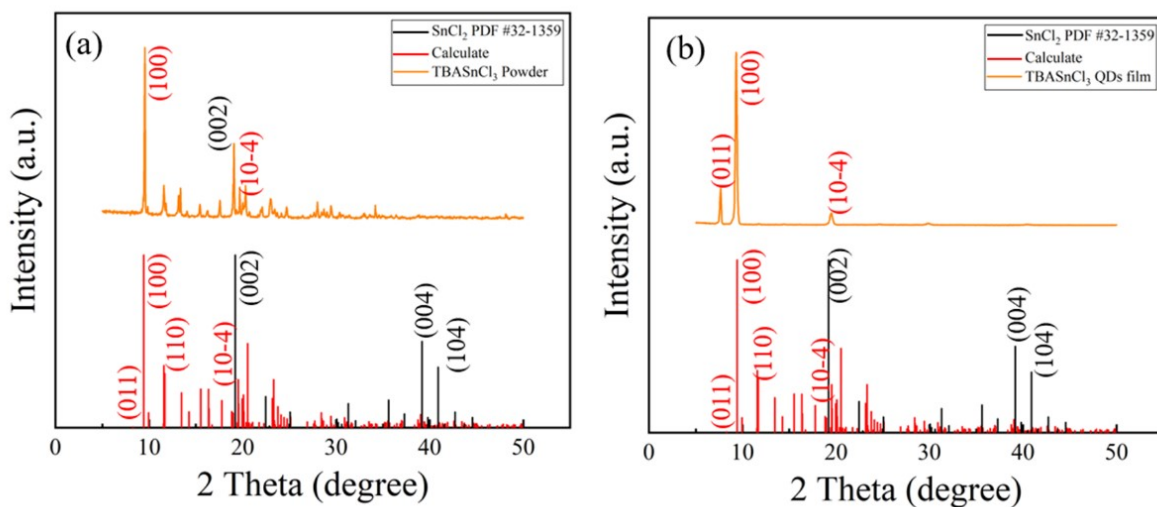


Figure S5 Experimental and calculated powder X-ray diffraction patterns of the as-prepared TBASnCl₃ powder and TBASnCl₃ thin films on glass surface.

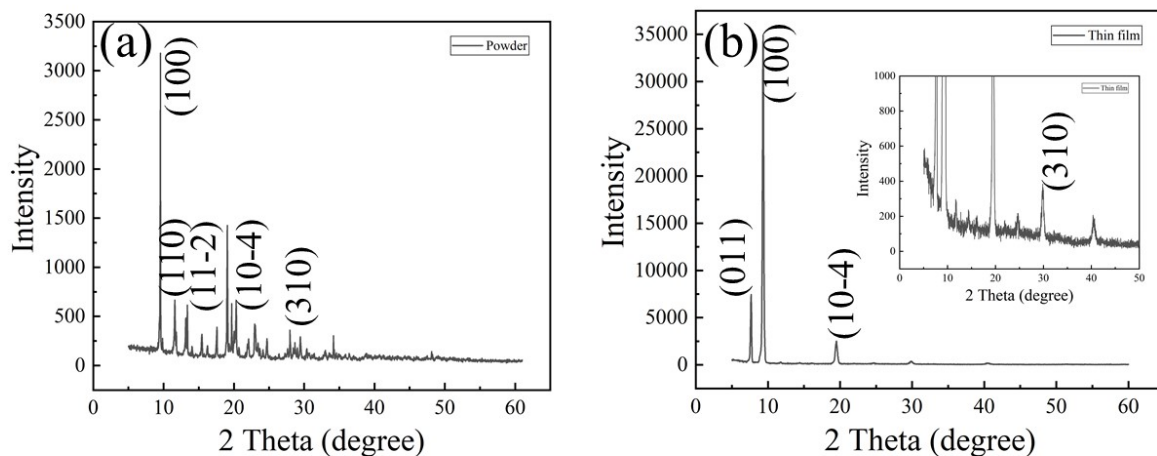


Figure S6 (a) XRD patterns of the TBASnCl_3 powder; (b) XRD patterns of TBASnCl_3 QDs film after annealing at 70°C . The inset shows the XRD patterns of TBASnCl_3 QDs film after its magnification.

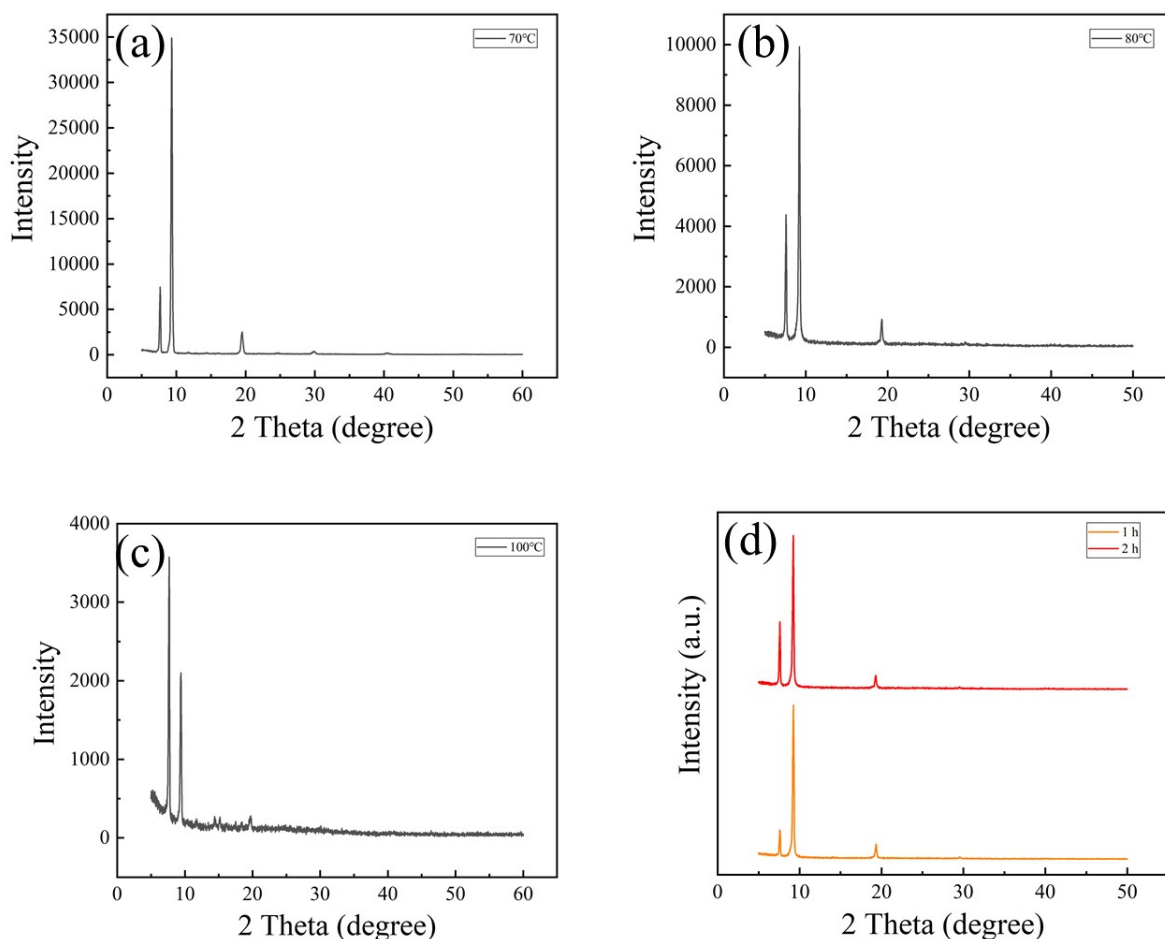


Figure S7. XRD patterns of the TBASnCl_3 QDs film after annealing at different temperature. (a) 70°C ; (b) 80°C and (c) 100°C . (d) XRD patterns of the TBASnCl_3 QDs film after different annealing times at 70°C .

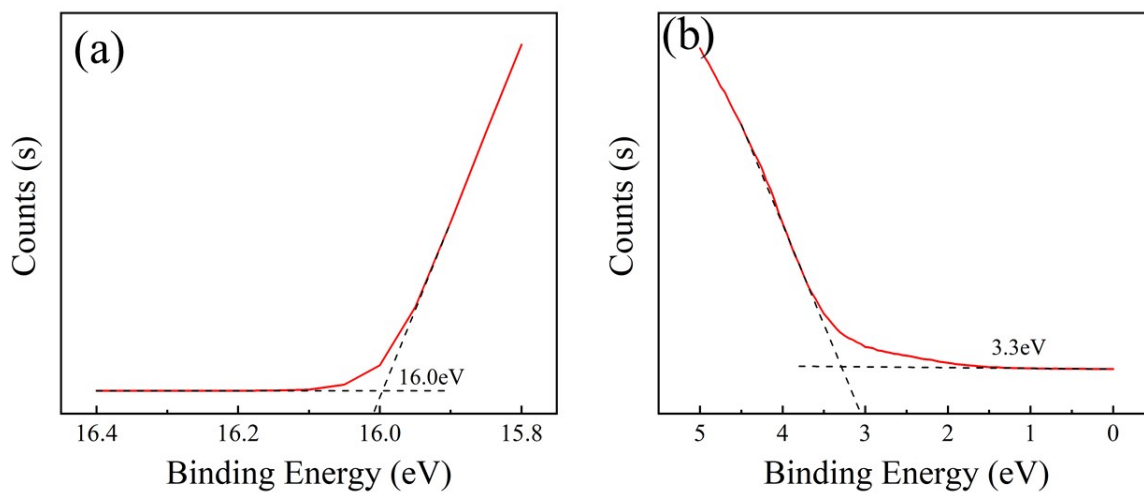


Figure S8. UPS spectra of the TBASnCl₃ film. (a) The secondary edge region and (b) the HOMO region of the TBASnCl₃ QDs film.