Supporting information

Ionic Liquid Bridging Buried Interface for High-Performance Flexible Self-Powered Perovskite Nanowire Photodetectors with Excellent Mechanical Stability

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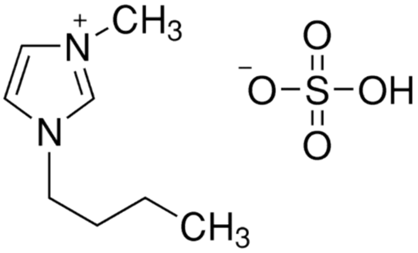

Figure S1. The molecular structure of ionic liquid BMIMHSO$_4$.

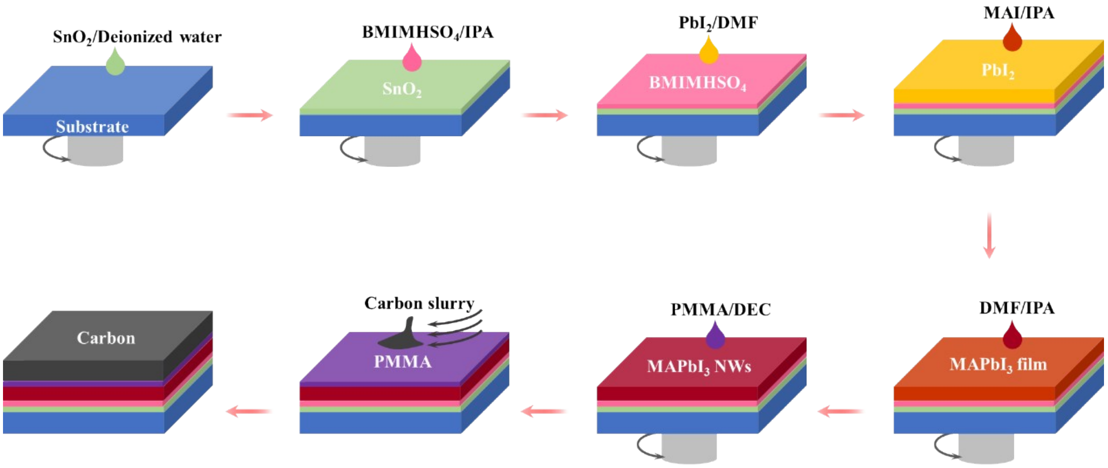

Figure S2. The preparation flow chart of the device with BMIMHSO$_4$ bridging the buried interface.

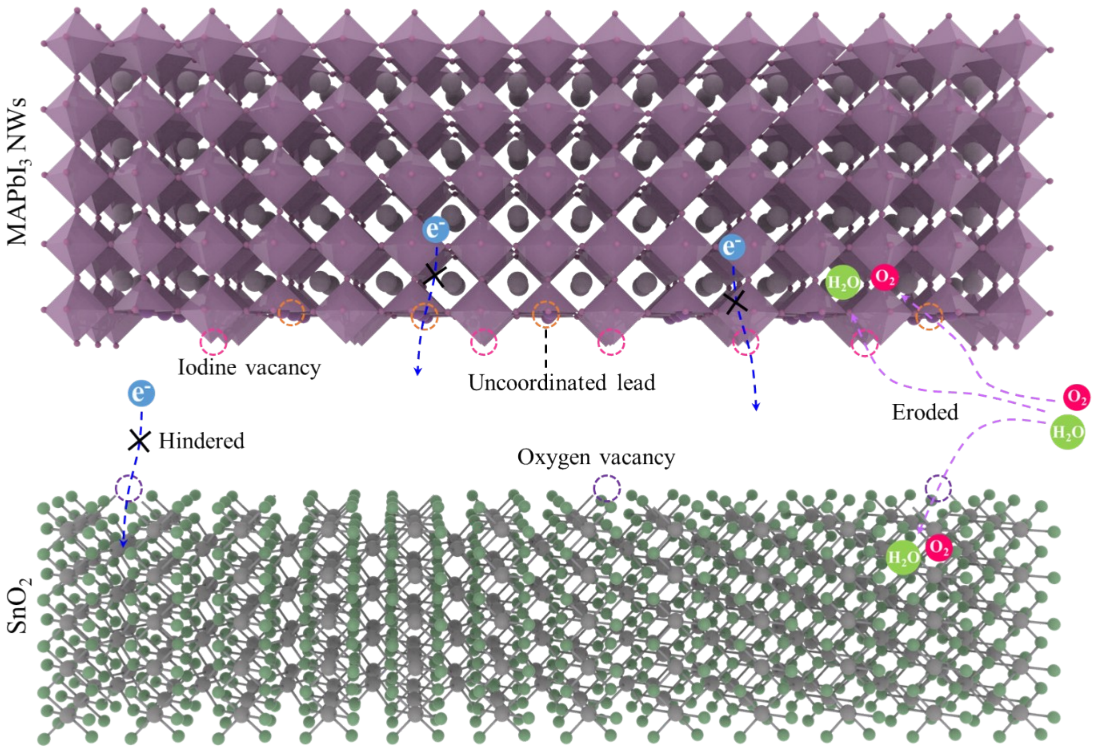

Figure 3. Schematic illustration of the buried interface defects between SnO_2 and $MAPbI_3$ NWs affecting the device performance and stability.

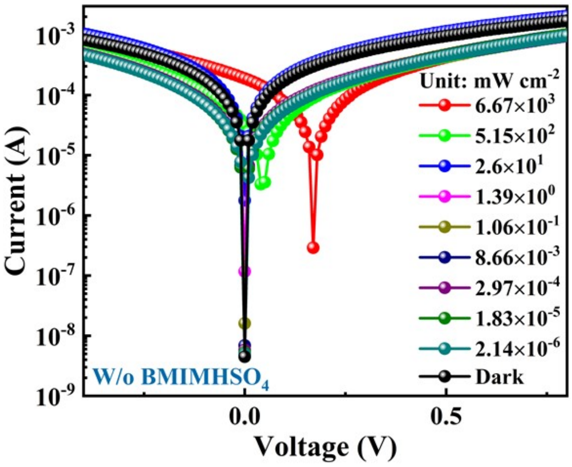

Figure S4. I-V curves of the rigid device without BMIMHSO$_4$ bridging buried interface under different light intensities.

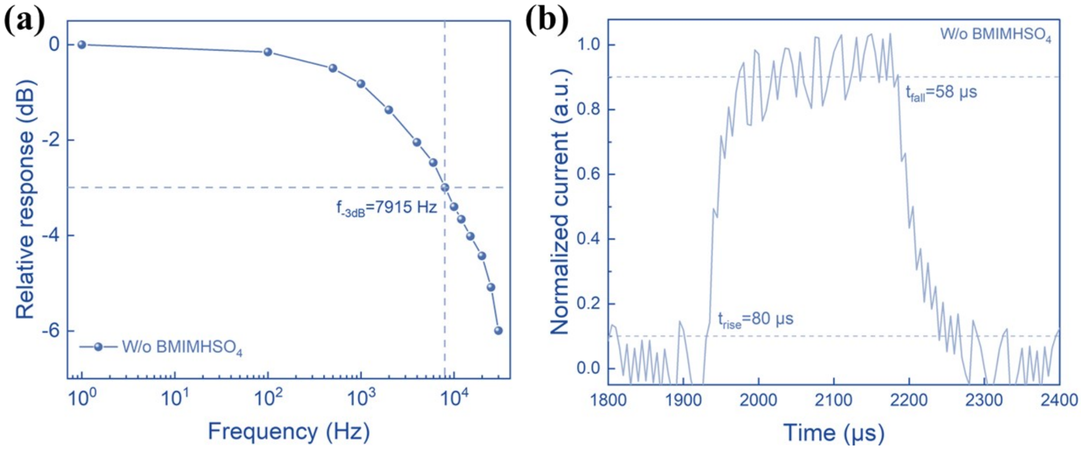

Figure S5. (a) -3 dB cut off frequency and (b) Response time of the rigid device without BMIMHSO$_4$ bridging buried interface.

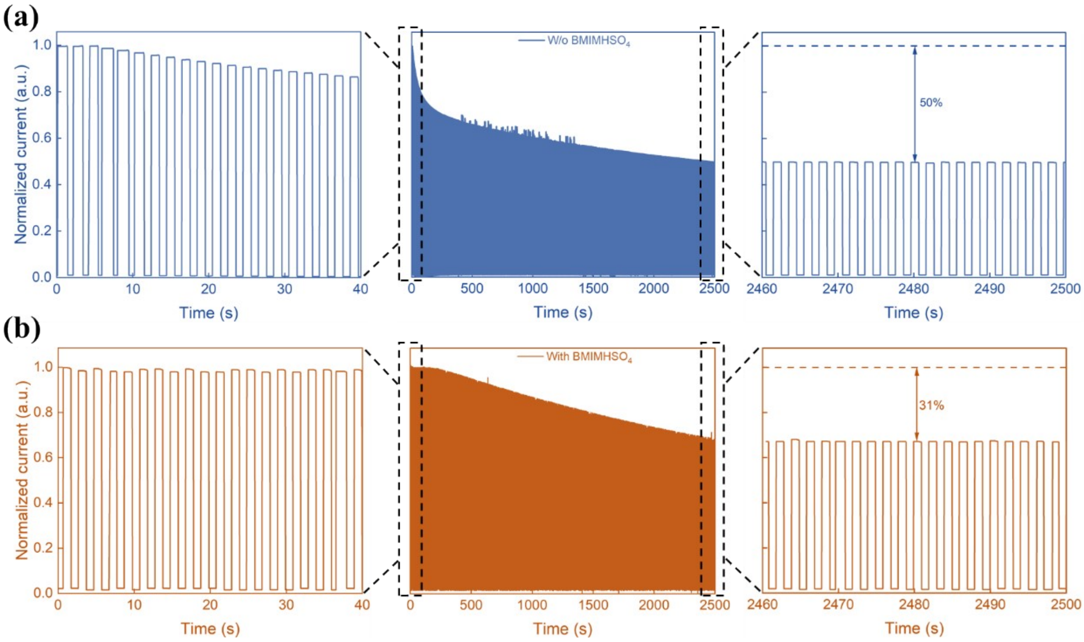

Figure S6. Normalized I-t curve of the rigid device (a) without and (b) with $BMIMHSO_4$ bridging buried interface under continuous illumination for 2500 s.

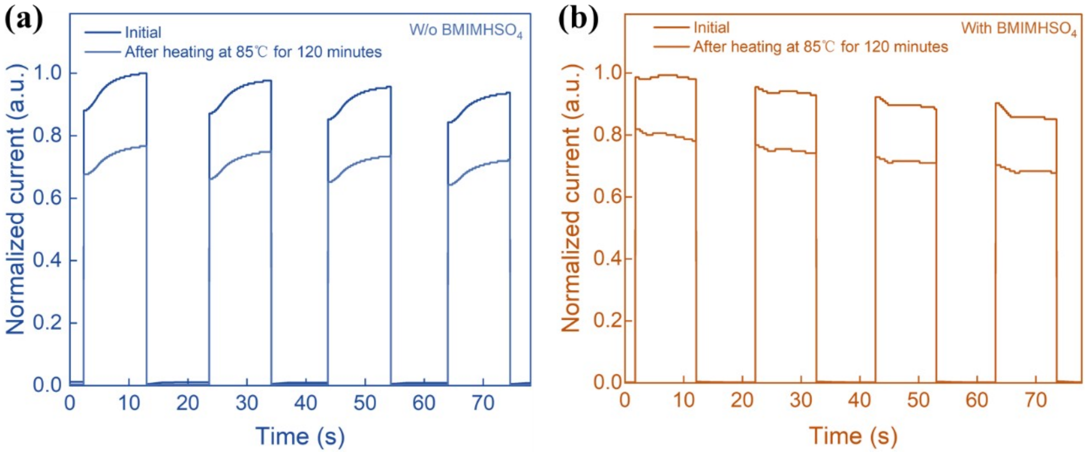

Figure S7. Normalized I-t curve of the rigid device (a) without and (b) with $BMIMHSO_4$ bridging buried interface before and after heating at 85℃ for 120 minutes.

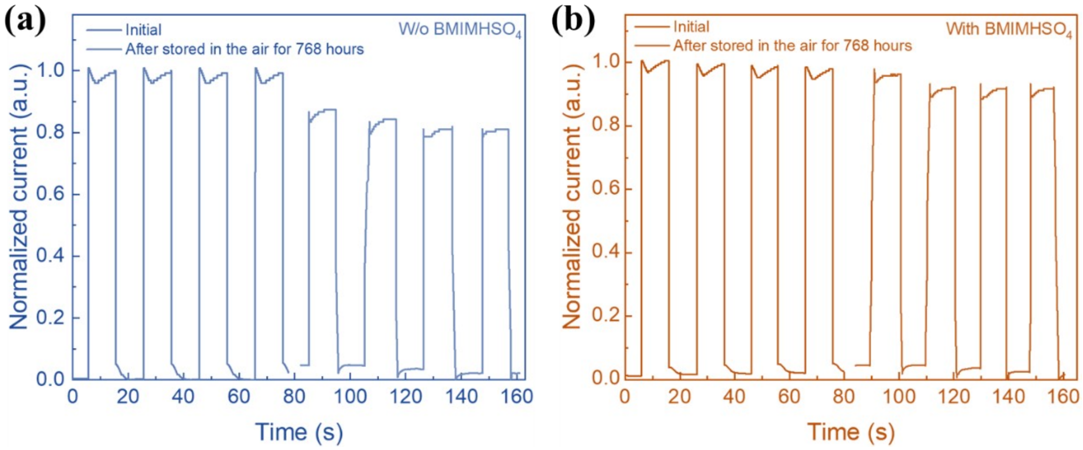

Figure S8. Normalized I-t curve of the rigid device (a) without and (b) with $BMIMHSO_4$ bridging buried interface before and after stored in the air (45%-80% humidity) for 768 hours.