Supplementary Information

Large-area niobium disulfide thin films as transparent electrodes for devices based on two-dimensional materials

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**NbS\textsubscript{2} film thickness**

**Figure S1.** Atomic force microscopy (AFM) images of synthesized NbS\textsubscript{2} films with various thicknesses. (a,b,c) Topological images and (d,e,f) line profiles of 2-, 4-, and 8-layer NbS\textsubscript{2} films, respectively.
Device fabrication process

Figure S2. Schematic of the process used to fabricate an ion-gel gated MoS$_2$ FET with an NbS$_2$ electrode.

Photographic image of a fabricated device

Figure S3. Photograph of an array of ion-gel gated MoS$_2$ FETs using NbS$_2$ electrode. The inset shows an optical microscope image of a single device.