**Supporting Information**

**Fabrication of Semi-Transparent SrTaO2N Photoanodes with a GaN Underlayer Grown via Atomic Layer Deposition**

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**Figure S1.** SEM image of 60 nm GaN/SiC.



**Figure S2.** Cross-sectional SEM image of SrTaO2N/60 nm GaN/SiC.



**Figure S3.** LSV curves of (a) SrTaO2N/60 nm GaN/SiC and (b) SrTaO2N/30 nm GaN/SiC measured in electrolyte with (red curves) and without (dark curves) Na2SO3 scavenger.



**Figure S4.** (a) LSV and (b) CA curves at 1.23 V vs. reversible hydrogen electrode (VRHE) of SrTaO2N/60 nm GaN/SiC and CoFeO*x*/SrTaO2N/60 nm GaN/SiC. (c) LSV and (d) CA curves at 1.23 VRHE of SrTaO2N/30 nm GaN/SiC and CoFeO*x*/SrTaO2N/30 nm GaN/SiC.