Supplementary Information

Enhanced Ammonia Production via Synergistic Piezo-Photocatalysis Using

TiO$_2$@Layered Silicate Magadiite Nanosheets

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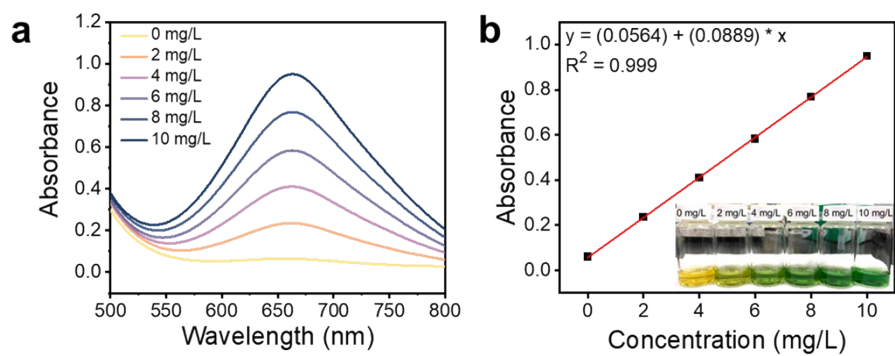
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Figure S1. (a) UV-Vis absorption spectra of salicylate method after incubation for 2 h at room temperature; (b) Calibration curve used for the calculation of NH_3 concentrations.
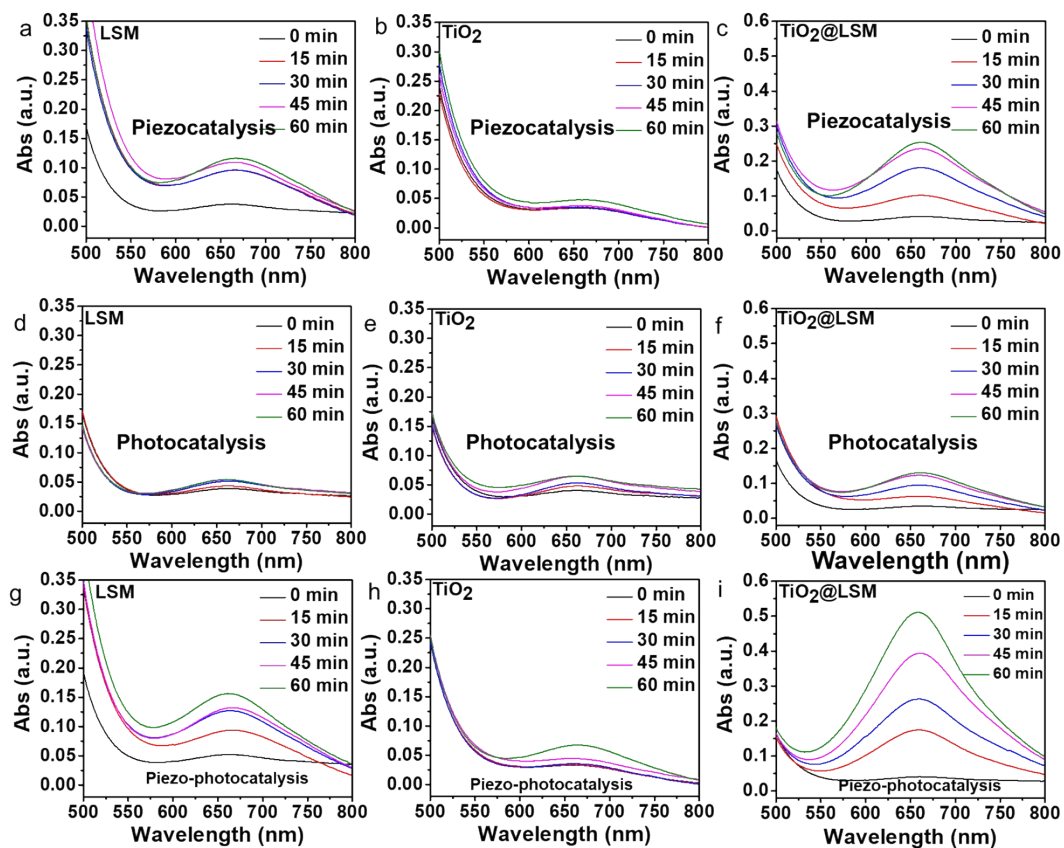
Figure S2. The UV-visible spectra results for the nitrogen reduction reaction (NRR) under various catalytic conditions; Piezocatalytic NRR: (a) LSM, (b) TiO_2 NPs, and (c) TiO_2@LSM. Photocatalytic NRR: (d) LSM, (e) TiO_2 NPs, and (f) TiO_2@LSM. Piezophotocatalytic NRR: (g) LSM, (h) TiO_2 NPs, and (i) LSM nanosheets.
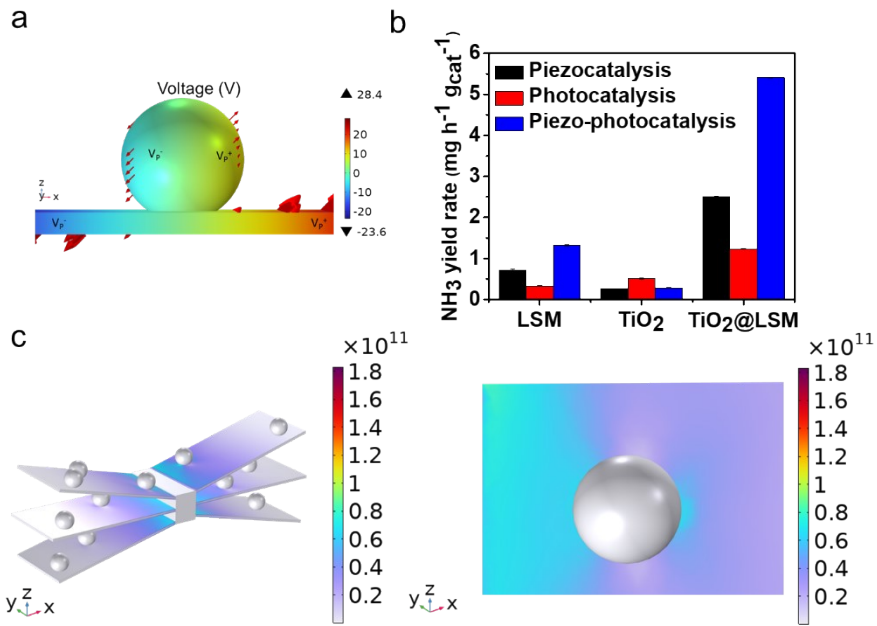
Figure S3. (a) The LSM induces a piezopotential spillover to the TiO_2 nanoparticles. (b)The NRR yield rates for LSM, TiO_2 NPs, and TiO_2@LSM under different catalytic conditions. FEM simulation result of stress for (c) TiO_2@LSM and (d) the enlarged figure showing the stress concentration at the interface of TiO_2 and LSM (unit: Nm^{-2}).