Supplementary Materials

Cobalt-doped MoS_2 enhances the evolution of hydrogen by piezo-electric catalysis under 850 nm near-infrared light irradiation

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Measurements of piezo-currents

Piezo-currents of the Co-doped MoS_2 were also measured with a CHI660C electrochemistry workstation as follows. First, a 10 mm × 18 mm ITO glass was used as the bottom electrode, on which about 20 mg of the Co-doped MoS_2 was uniformly distributed on a square of 10 × 10 mm^2, and then another ITO glass was used as the top electrode to fabricate a sandwich piezo-measurement cell (Fig. S1 and 2, the measurement method is reliable and believable, see Fig.S3). A swallow clincher (15 mm × 6.5 mm) was used to clamp the sandwich piezo-measurement cell to maintain its stability, and another swallow clincher was used to bring pressure on or relax the piezo-measurement cell by closing or opening it, respectively. Each of the swallow clincher exerted about 1.2 ± 0.1 kg force on the measurement cell (that is, 1.2 ± 0.1 kg force was exerted on a 10 mm × 10 mm sample when the swallow clincher was closed).

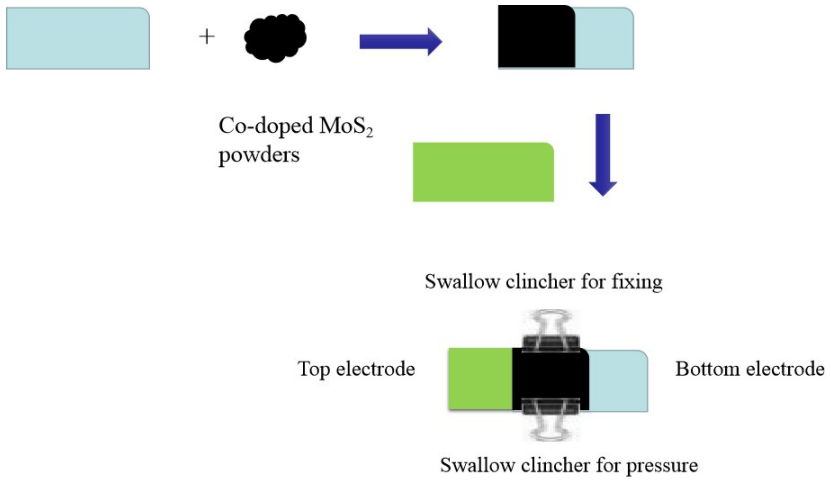

Fig.S1. Piezo-measurement cell

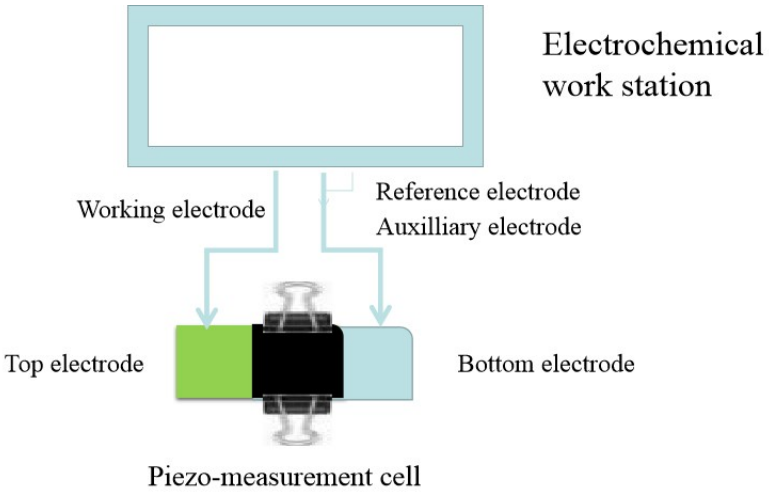

Fig.S2. Scheme of measurement of piezo-currents

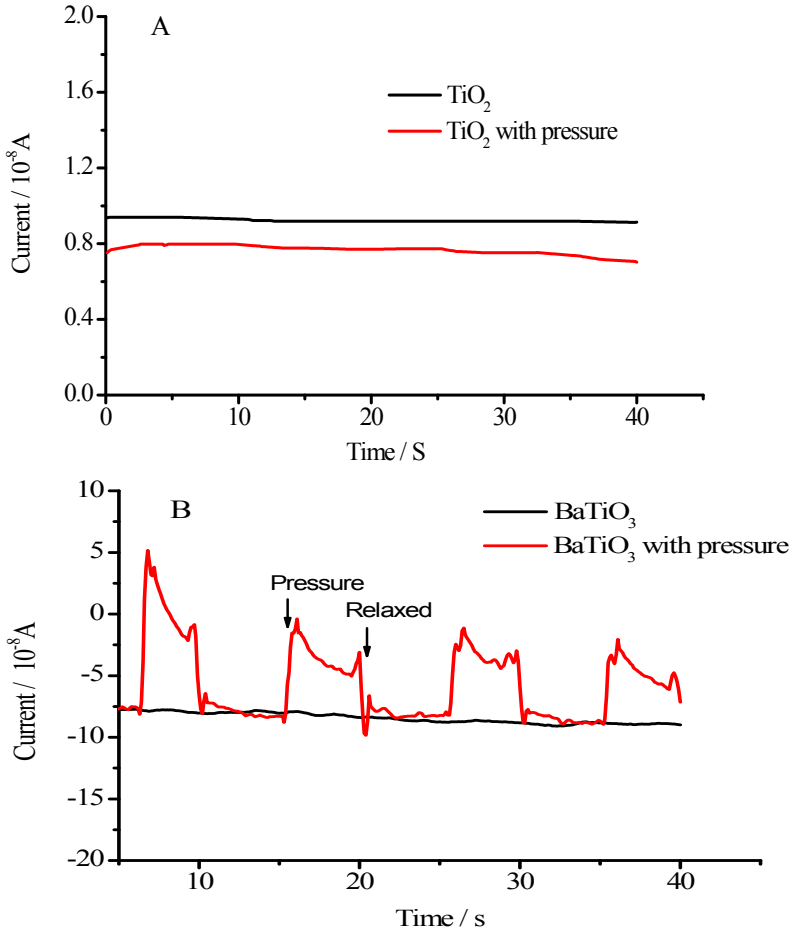

Fig.S3. Comparison of piezo-currents of TiO_2 (A) and $BaTiO_3$ (B).

TiO_2 is a non-piezoelectrical material, thus, no piezo-current was observed with pressure. However, the piezo-current of $BaTiO_3$, a piezoelectrical material, was observed with pressure. This demonstrates the measurement method is reliable and believable.