

## **Description of Additional Supplementary Files**

File Name: Supplementary Movie 1

Description: Spontaneous and steady-state photocatalytic overall neutral pH water splitting in real time, showing clear bubble formation at high rate under concentrated irradiation. The light is incident at 30-degree angle from the substrate normal. The year on the coin is 2009.

File Name: Supplementary Movie 2

Description: Photocatalytic overall neutral pH water splitting reaction conducted at temperature slightly below room-temperature (at 18 °C) to clearly probe the bubble formation due to generation of hydrogen and oxygen gases.