

## **Support information**

Synthesis of Cu-doped TiO<sub>2</sub> on wood substrate with highly efficient photocatalytic performance and outstanding recyclability for formaldehyde degradation

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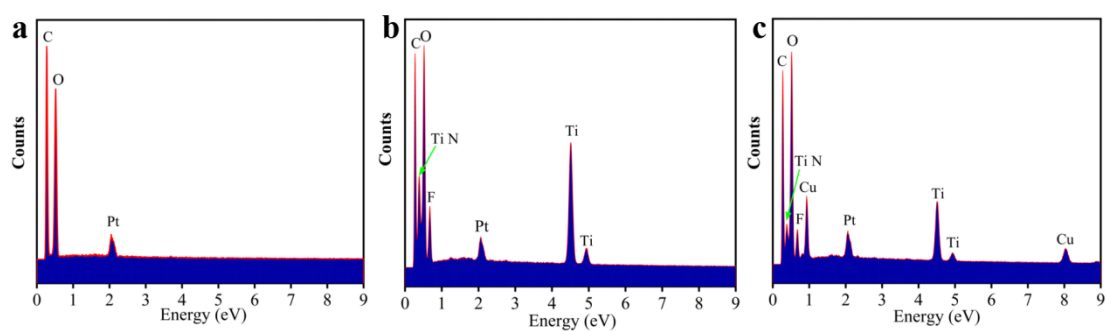
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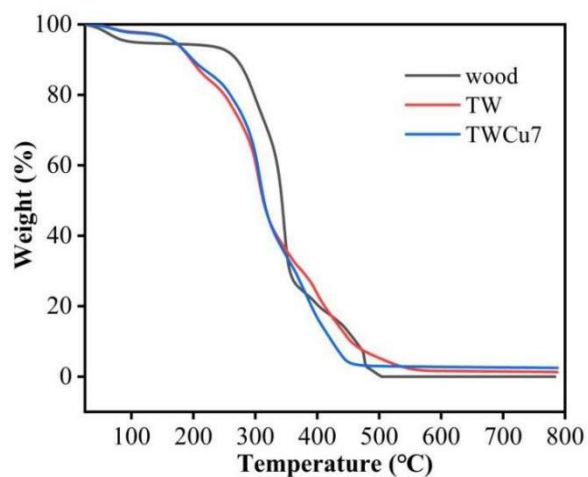
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**Table S1** Photocatalytic performances of various modified TiO<sub>2</sub> based catalysts.

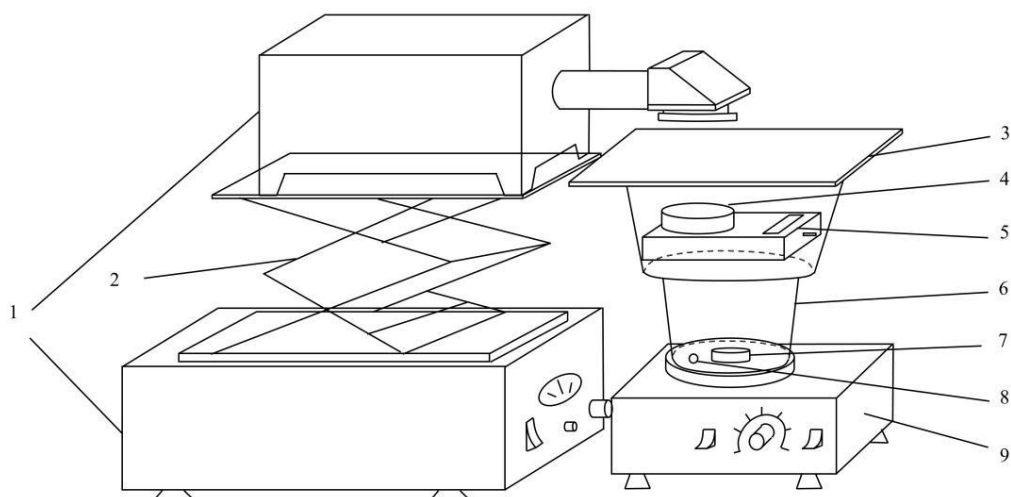
| Sample<br>s      | Type       | Modified<br>elements   | Light<br>source     | Pollutan<br>t     | Pollutant<br>concentratio<br>n | Degradatio<br>n rate  | Reference |
|------------------|------------|--|---------------------|-------------------|--------------------------------|---|-----------|
| TiO <sub>2</sub> | Composites | ONLH<br>(the oxygen<br>or nitrogen<br>linked<br>heptazine-bas<br>e polyme) | Natural<br>sunlight | medicine          | 10 mL/g                        | $(14.4 \pm 0.5) \times 10^{-2} \text{ min}^{-1}$            | [11]      |
| TiO <sub>2</sub> | Composites | Natural<br>silicate  | UV                  | HCHO              | 30 ppm                         | $0.7 \mu\text{mol} \cdot \text{s}^{-1} \cdot \text{g}^{-1}$ | [12]      |
| TiO <sub>2</sub> | Composites | kaolinit   | UV                  | Ciproflo<br>xacin | 10 mg/L                        | $0.43 \text{ min}^{-1}$                                     | [13]      |
| TiO <sub>2</sub> | Doping     | Fe-I   | Visible<br>light    | Benzene           | 100 mg/m <sup>3</sup>          | 59.38%  | [14]      |
| TiO <sub>2</sub> | Doping     | La/Mn  | UV<br>light         | MB                | 20 mg/L                        | 96.44%  | [16]      |
| TiO <sub>2</sub> | Composites | NH <sub>2</sub> -MIL-125   | UV                  | HCHO              | 10 ppm                         | 90%   | [17]      |



**Figure S1.** EDS spectra of samples: (a) wood; (b) TW; (c) TWCu7.



**Figure S2.** TG of the original wood, TW, and TWCu7 samples.



**Figure S3.** Schematic diagram of photocatalytic reaction device. 1. Xenon lamp house; 2. Lift table; 3. PMMA; 4. Sample; 5. PPM HTV m; 6. Drying apparatus; 7. Magnetic rotor; 8. Formaldehyde liquid; 9. Magnetic stirrer.