

Rhombohedral corundum/cubic In₂O₃ phase-junction hybridized with Polymeric Carbon Nitride for Photodegradation of Organic Pollutants

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Methods

1.1 Preparation of MIL-68(In)-NH₂

The precursor MIL-68(In)-NH₂ was prepared by a hydrothermal method. Typically, 1.3 mmol 2-aminoterephthalic acid and 3.8 mmol In(NO₃)₃·xH₂O were dissolved in 6.2 mL DMF, respectively. The solutions were mixed under continuously stirring. Then the mixture solution was transferred into an autoclave and reacted at 125 °C for 5 h in an oven. After the reaction ended, the resulting products were collected and washed with methanol several times. Finally, the collected MIL-68(In)-NH₂ sample was dried at 80 °C overnight.

1.2 Preparation of MIO/PCN and PCN

MIO/PCN samples were obtained by an in-situ method. Certain amounts of MIL-68(In)-NH₂ (5, 10, 20 mg) and 12 g urea were mixed in a glass bottle with a little bit of distilled water and stirred at 80 °C until the water evaporated completely. The obtained solid was transferred into a crucible and calcined at 500 °C with 2 °C min⁻¹ in a muffle furnace. After reaction for 2 h, the products were collected and named *x wt%* MIO/PCN, where *x* means the calculated conversion rate of MIO.

Pure PCN was synthesized in the same condition without the addition of MIL-68(In)-NH₂.

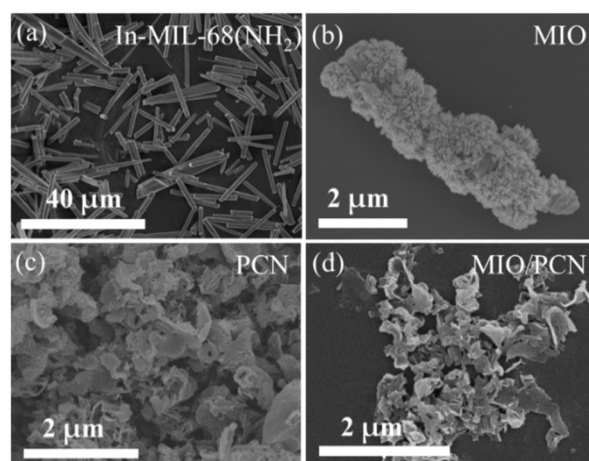


Figure S1. SEM images of (a) In-MIL-68(NH₂), (b) MIO, (c) PCN, (d) 2.5 wt% MIO/PCN samples.

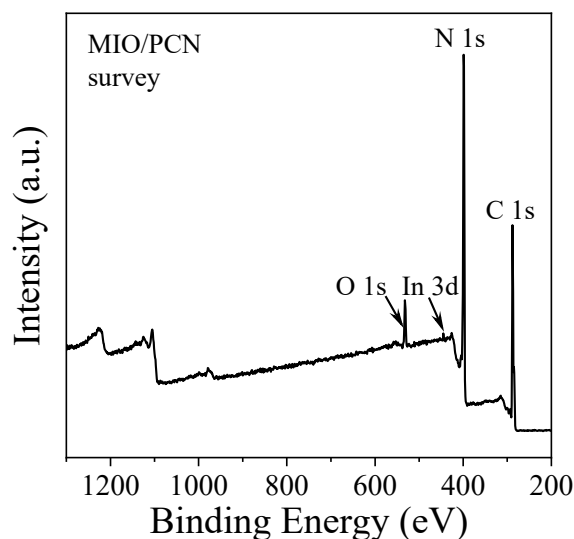


Figure S2. Survey XPS spectra of 2.5 wt% MIO/PCN samples.