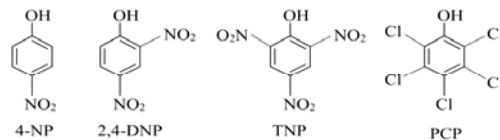


## Photocatalytic Removal of Pentachlorophenol by Means of an Enzyme-Like Molecular Imprinted Photocatalyst and Inhibition of the Generation of Highly Toxic Intermediates

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### Electronic Supplementary Information



Scheme S1 Structures of PCP and substrate analogues.

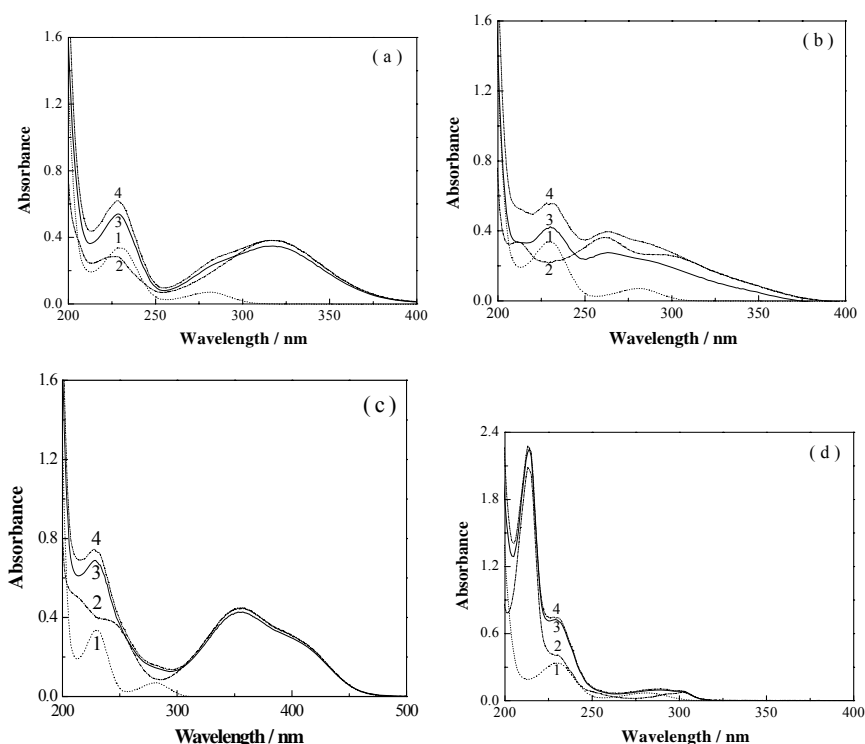


Fig. S1 UV spectra of solutions of the monomer (OPDA, 36.0  $\mu\text{mol L}^{-1}$ ) and the templates (36.0  $\mu\text{mol L}^{-1}$ ) of (a) 4-NP, (b) DNP, (c) TNP and (d) PCP. The spectra correspond to (1) OPDA, (2) the specified template, (3) the mixture of (1) and (2), and (4) the sum of (1) and (2) obtained by calculation.

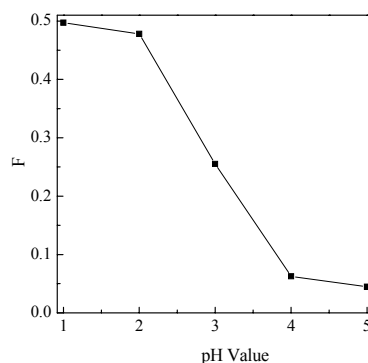
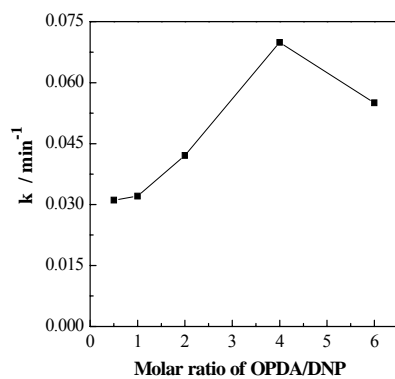
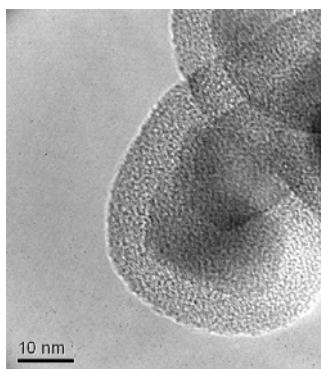


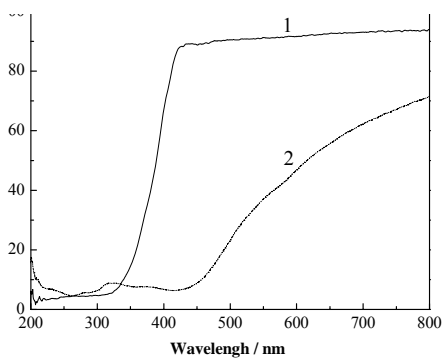
Fig. S2 Effects of solution pH on the F values for the association between DNP and OPDA.



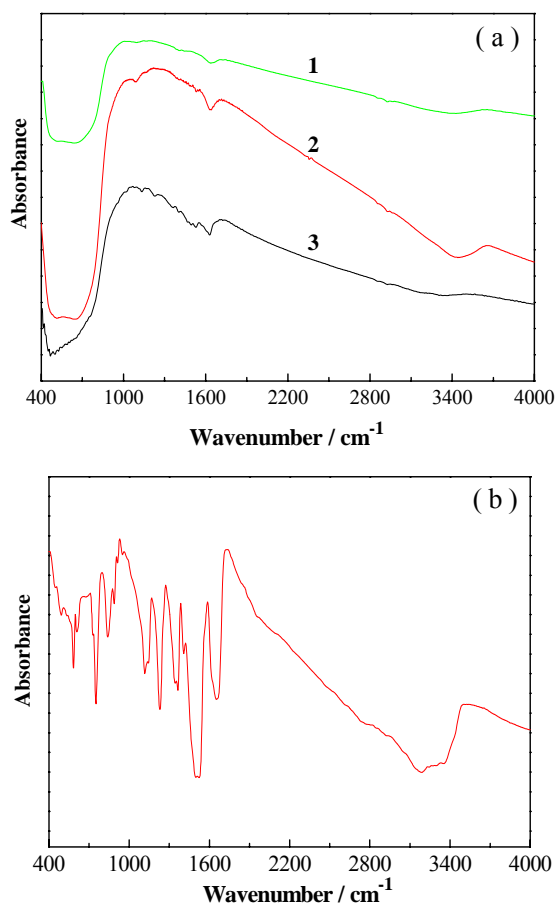
**Fig. S3** Effects of the molar ratio of the monomer to the template DNP on the apparent rate constants of the photodegradation of PCP (30 mg L<sup>-1</sup>) over MIP-coated photocatalysts.



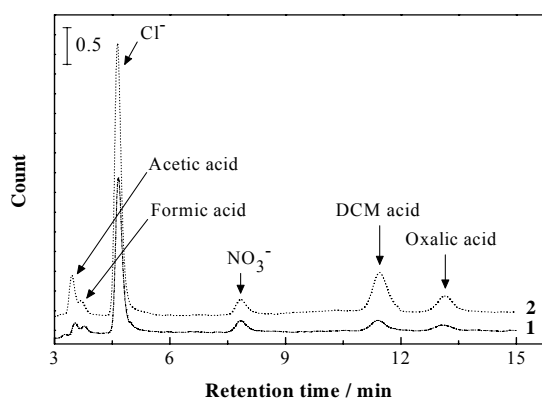
**Fig. S4** HRTEM graph of DNP-P25.



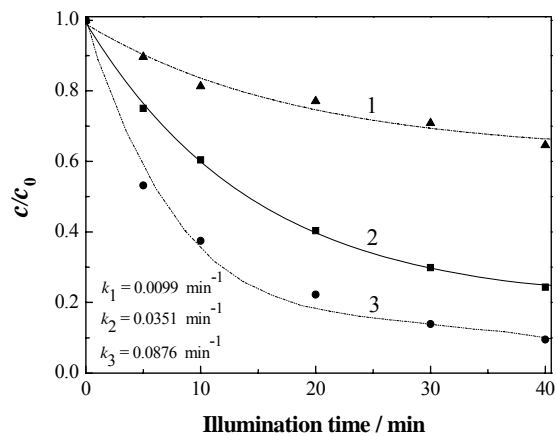
**Fig. S5** Diffuse reflectance UV-vis spectra of P25 (1) and DNP-P25 (2).



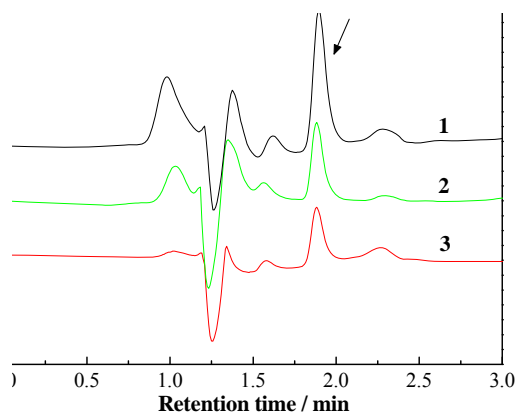
**Fig. S6** FTIR spectra of the photocatalysts (a) and the polymer of OPDA (b) detected on a Bruker VERTEX 70 spectrophotometer. The selected catalysts include neat P25 (1) and DNP-P25 (2) particles. In order to clear show the absorption bands of the MIP layer, the MIP layer of another DNP-P25 (3) was somewhat thicker than that required in practice.



**Fig. S7** Ion chromatograms of the samples after the degradation over P25 (1) and DNP-P25 (2) at pH 11 for about 6 min of irradiation. A small amount of NO<sub>3</sub><sup>-</sup> was added as the internal indicator.



**Fig. S8** Remained concentrations of DNP during the photoreaction over NIP-P25 (1), P25 (2) and DNP-P25 (3). The rate constants for the photodegradation of DNP over these catalysts were inserted.



**Fig. S9** Liquid chromatograms of the samples after the degradation of DNP over NIP-P25 (1), P25 (2) and DNP-P25 (3) for 10 min of irradiation.