

Photoregulation of intercalation behavior of phenol for azobenzene-clay intercalation
compounds

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Electronic Supplementary Information

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1. Reversible change in the XRD pattern of the AZ⁺-TSM-phenol upon the UV and visible light irradiation (Fig. S1).
2. Change in the XRD pattern of the AZ⁺-montmorillonite-phenol upon the photoirradiation (Fig. S2).
3. Change in the absorption spectrum of the AZ⁺-montmorillonite-phenol upon the photoirradiation (Fig. S3).

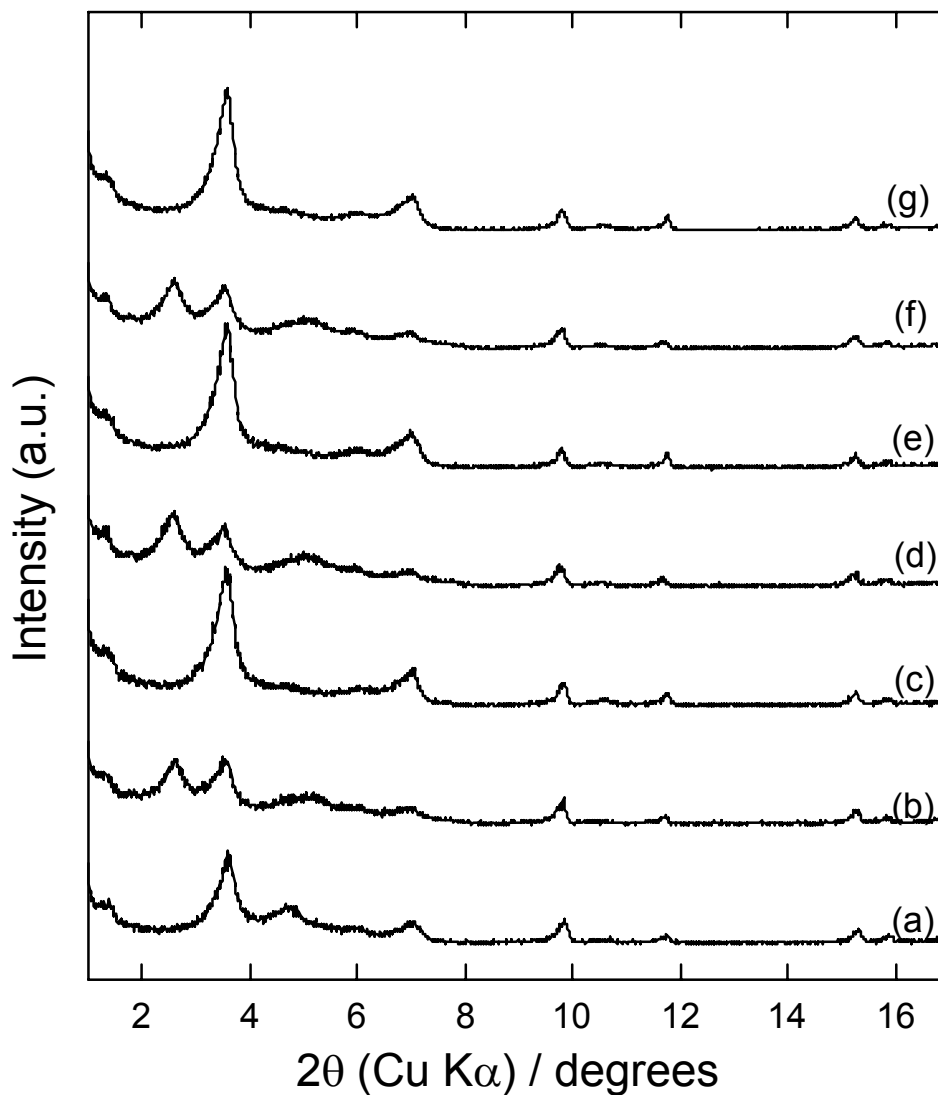


Fig. S1. The reversible change in the XRD pattern of the AZ⁺-TSM-phenol upon the UV and the visible light irradiation. (a) Before irradiation, (b) UV irradiated (30 min), (c) vis. Irradiated (30 min), (d) after 2nd UV irradiation, (e) after 2nd vis. irradiation, (f) after 3rd UV irradiation and (g) after 3rd vis. irradiation.

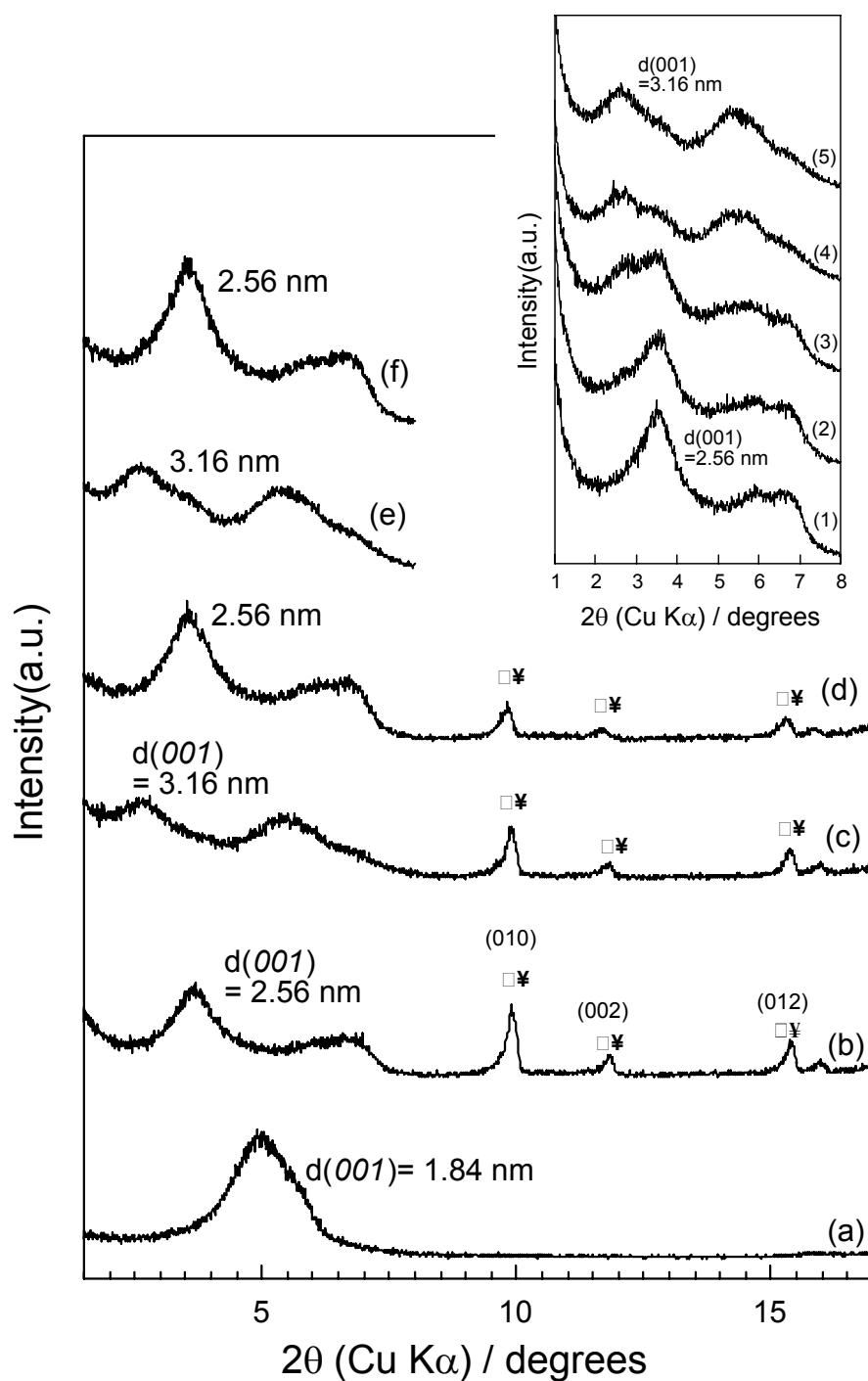


Fig. S2 XRD patterns of (a) AZ⁺-montmorillonite (105), (b)-(d) AZ⁺-montmorillonite (105)-phenol. Pattern (b) and (c) were recorded before and after the UV irradiation for 30 min, respectively. Pattern (d) was recorded after the visible light irradiation subsequent to UV irradiation. Pattern (e) was recorded after 2nd UV irradiation and (e) after 2nd vis. irradiation. Peaks indicated with triangle are diffractions from pure phenol.

(Inset) The change in the XRD pattern of the AZ⁺-montmorillonite-phenol upon the UV irradiation.

(1) Before irradiation, (2) UV irradiated for 5 min, (3) 10 min (4) 20 min and (5) 30 min.

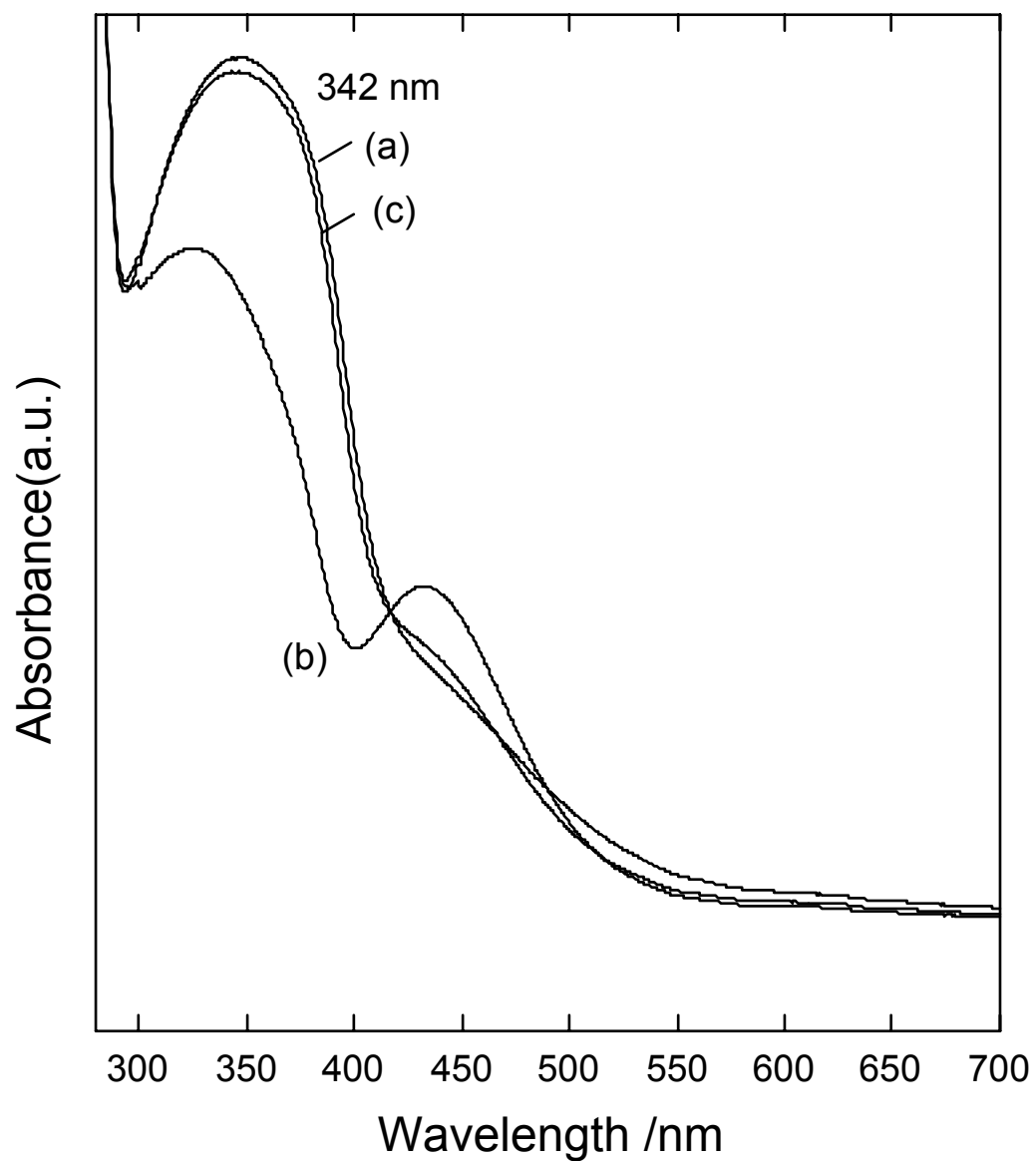


Fig. S3 Change in the UV- vis absorption spectrum of the AZ⁺-montmorillonite (105)-phenol (a) before and (b) after the UV irradiation for 10 min. Spectrum (c) was recorded after the visible light irradiation for 10 min subsequent to the UV irradiation.