

Supporting Information

Facile and mild preparation of brookite-rutile heterophase junction TiO₂ with high photocatalytic activity based on deep eutectic solvent (DES)

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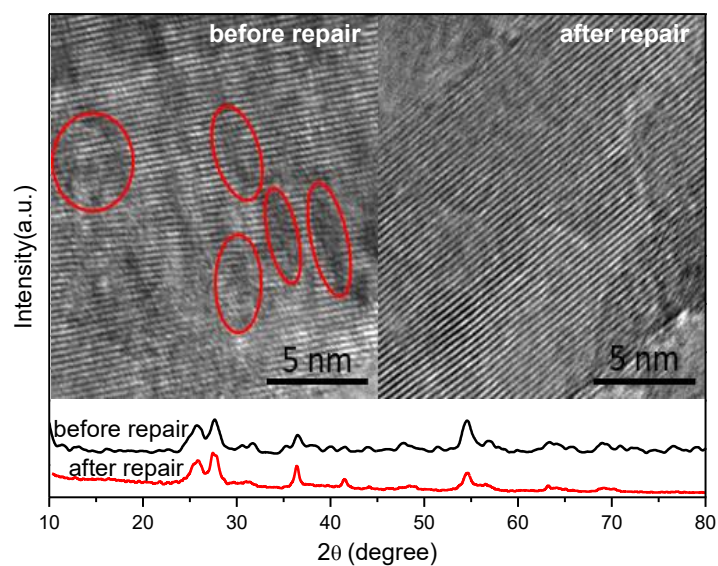


Fig.S1. Contrasts of XRD patterns and HRTEM images before and after repairing defects.

To provide more data to further confirm the effect of defects on the activity, we also repaired the defects of TiO_2 sample synthesized at 2:1 molar ratio of ChCl to retain, and contrasted the XRD patterns, HRTEM images and the photocatalytic activities of the synthesized TiO_2 before and after repairing defects. It can be seen from Fig.S1† that the results of XRD patterns and HRTEM images are consistent with that of TiO_2 synthesized with 1:6 molar ratios of ChCl to retain. And the photocatalytic activity after defect repairing is $9.48 \text{ mmol} \cdot \text{h}^{-1} \cdot \text{g}^{-1}$, which is obviously lower than that before repairing ($14.51 \text{ mmol} \cdot \text{h}^{-1} \cdot \text{g}^{-1}$). This also illustrates that the defects resulted from lattice disorder are indeed helpful for improving the photocatalytic activity.