Electronic Supplementary Material (ESI) for Chemical Science

Supplementary information for the manuscript:

Hybridizing photoactive zeolites with graphene: a powerful strategy to superior photocatalytic properties

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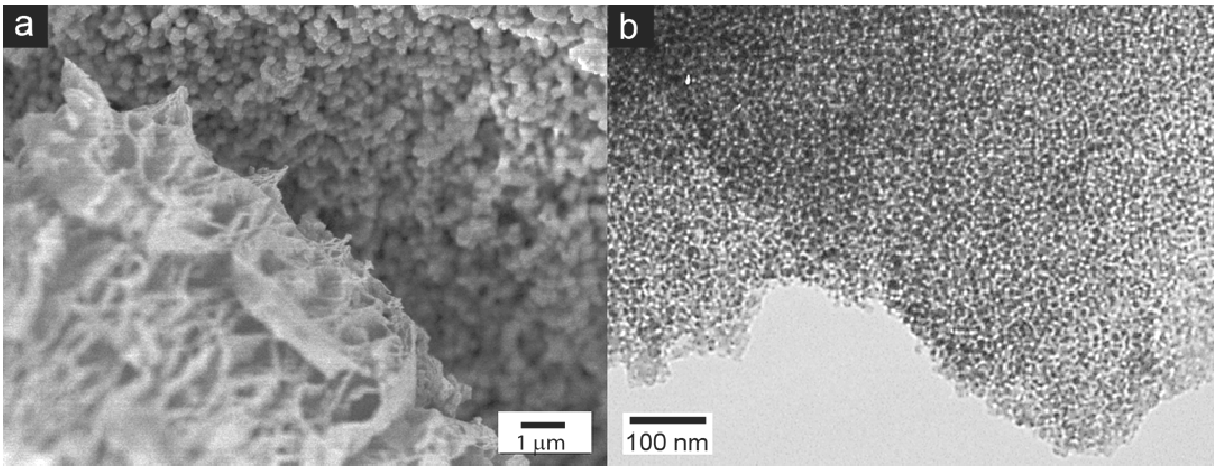

Figure S1: a) SEM image of the 10 wt% graphene-TS1 composite as a reference sample: The image shows that the large (300 nm) TS-1 particles were separated from the graphene aggregates, thus excluding a common interface. b) TEM micrograph of the 10 wt% graphene-TS1 hybrid: The image shows that graphene is incorporated in the sample, the TS-1 particles are considerably smaller (10 nm), uniform in size and shape and arranged in a way that creates ordered mesopores.

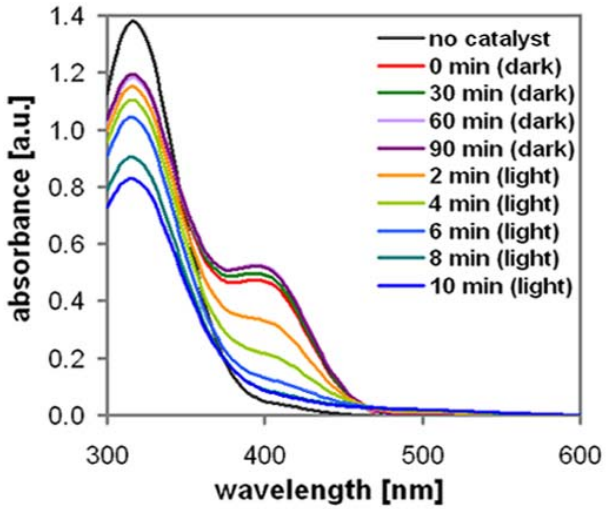

Figure S2: A sample UV-Vis spectra series for the 10 wt% graphene-TS1 hybrid: it shows the absorbance peaks of solute 4-NP molecules (max ~ 316 nm) and adsorbed 4-NP molecules (max ~ 400 nm). The absorbance of solute decreases by less than 20% upon stirring in the dark, while the absorbance of the adsorbed molecules decrease rapidly upon illumination with UV light.

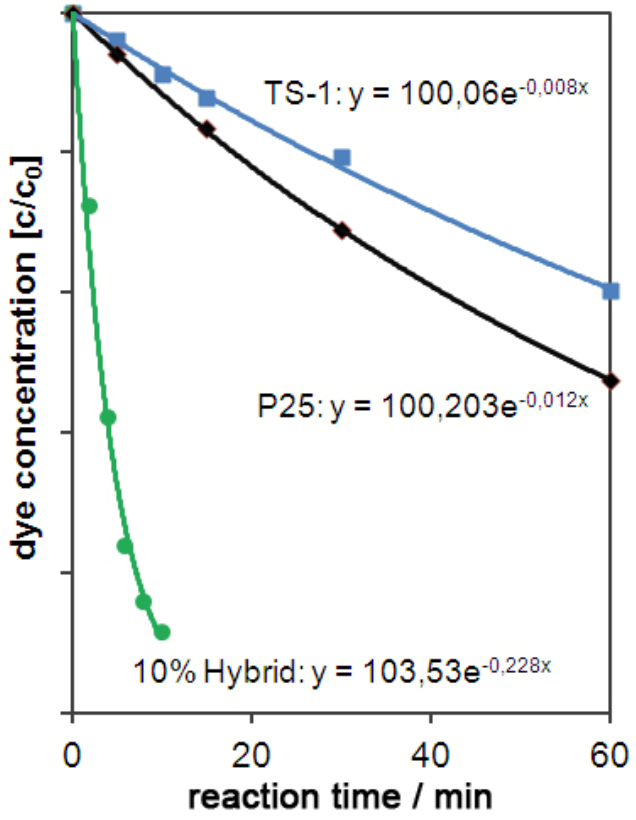

Figure S3: Comparison of photocatalytic performance of the hybrid with 10 wt% graphene with pure TS-1 and TiO2-P25 from Degussa for the decomposition of 4-nitrophenol.