

Supplementary Information

Enhanced activity of α -Fe₂O₃ for the photocatalytic NO removal

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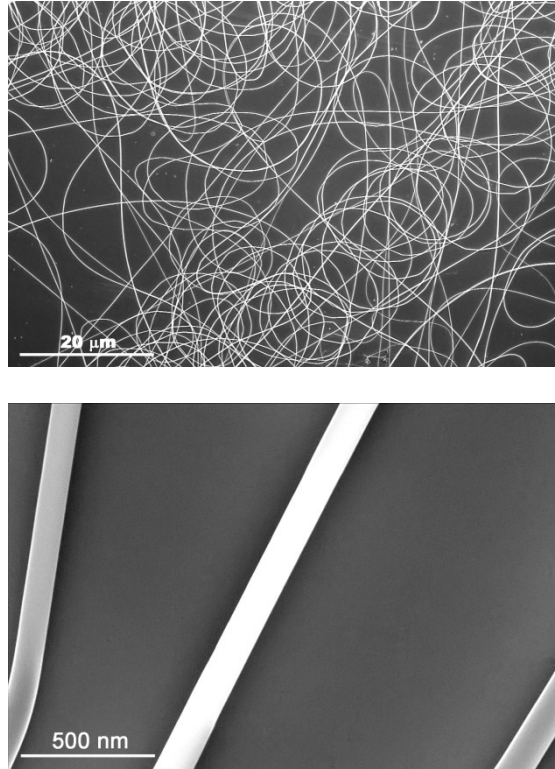


Figure S1. SEM images of as-spun Fe(III)/PVP nanofibers

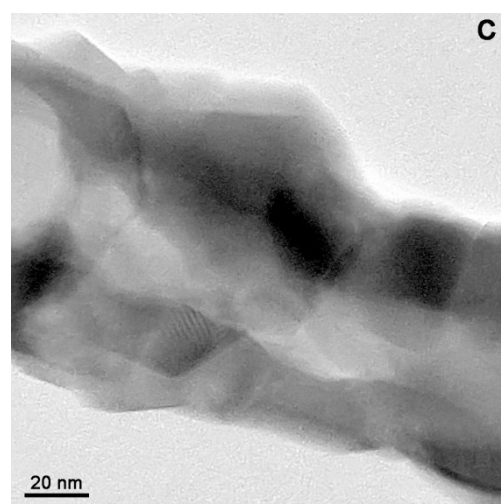
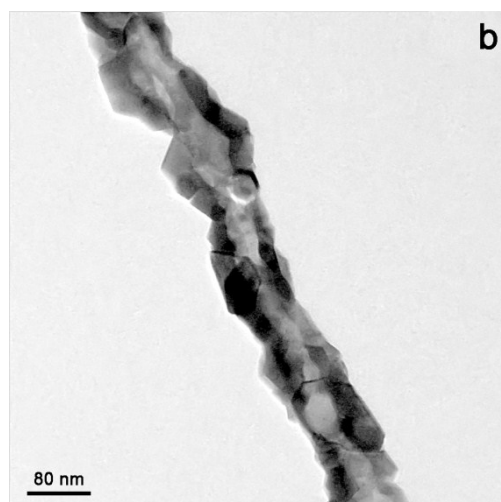
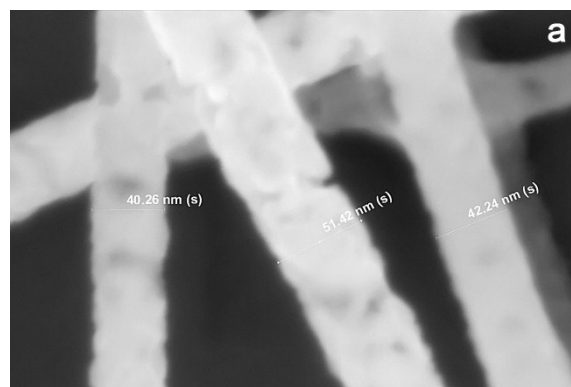


Figure S2. SEM (a) and HR-TEM (b, c) images obtained for HEF sample.

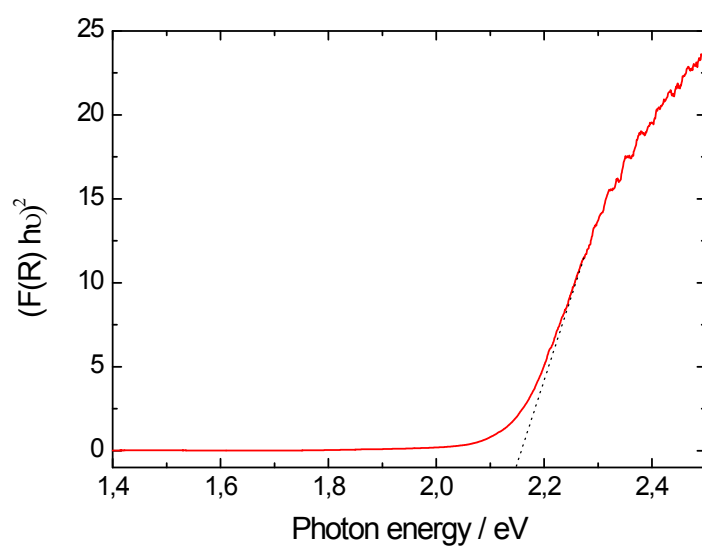


Figure S3. Kubelka-Munk transformed reflectance spectra of HEF.

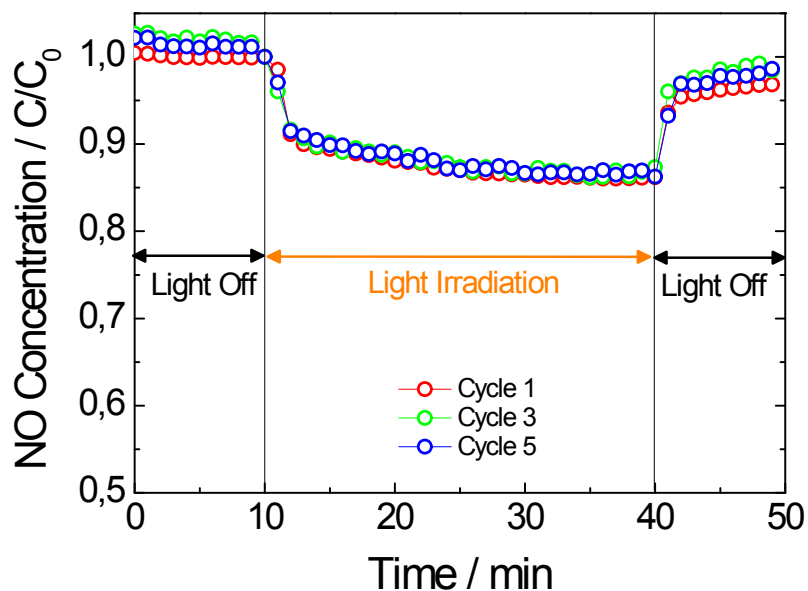


FIGURE S4. Concentration profiles obtained for HEF sample during successive experiments of photochemical degradation of NO gas under UV-vis light irradiation.

Successive additional cycling reactions were performed as preliminar evaluation of photocatalyst reuse. Between experiments, with the aim to eliminate the nitrite/nitrate compounds accumulated on surface, the photocatalyst was washed with distilled water, filtered and dried at 60 °C for 24 h.

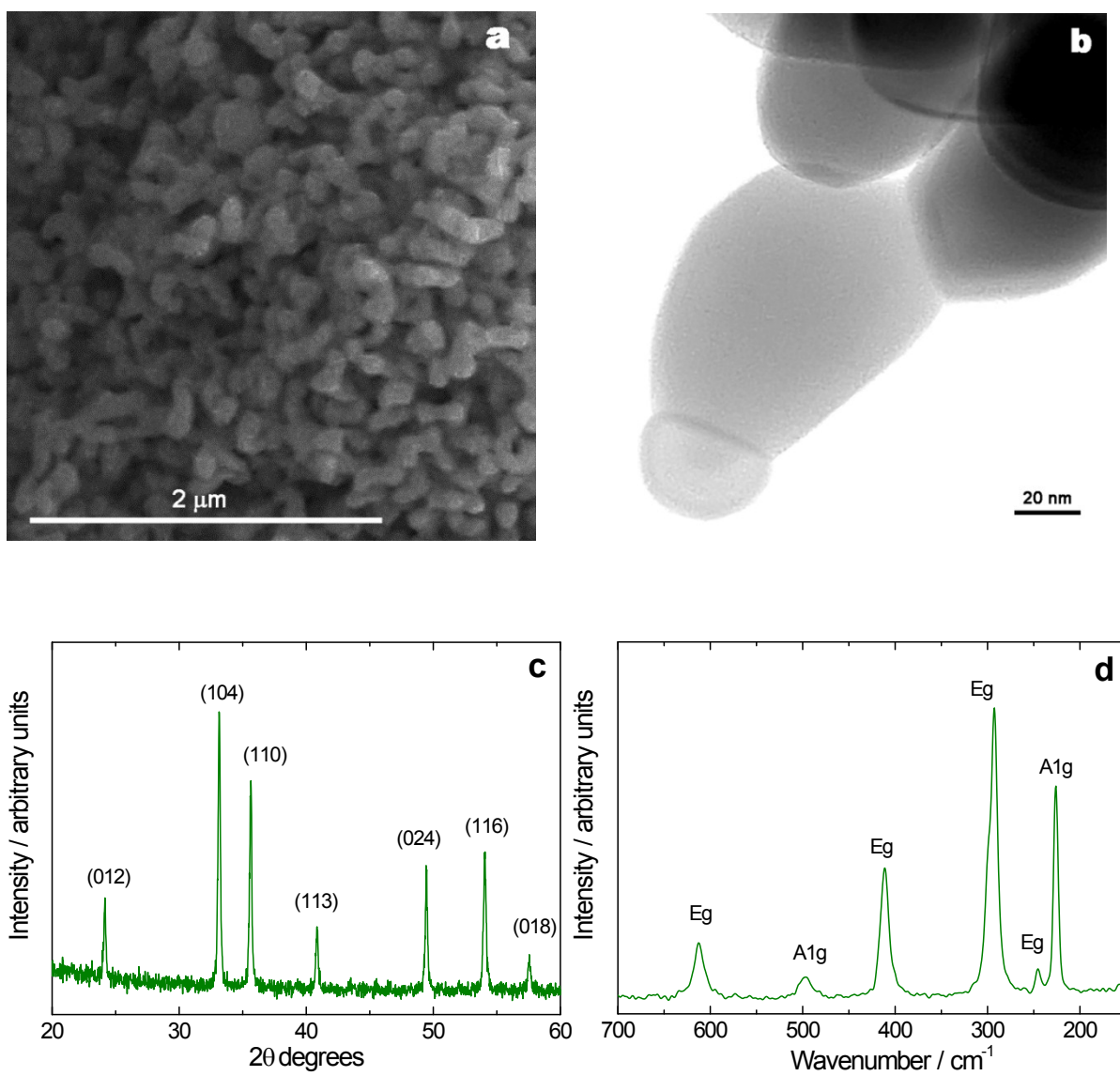


Figure S5. (a) SEM and (b) TEM images, (c) XRD and (d) Raman spectra of $\alpha\text{-Fe}_2\text{O}_3$ nano-powders (HNP sample).

Table 1. Surface area and porosity parameters for α -Fe₂O₃ samples.

Samples	HEF	HNP
Surface area / m²·g⁻¹		
^a A _{BET}	22.13	9.14
^b A _{micropore}	2.19	2.63
^b A _{External}	19.93	6.51
Pore Volume / cm³·g⁻¹		
^c V _{Total}	0.0577	0.0172
^b V _{Micropore}	0.0007	0.0013
^d V _{Mesopore}	0.0570	0.0159
Pore Size / Å		
^e Pore Width	104.23	75.35

^a Determined by adsorption of N₂ at 77 K (BET eq. with A_m = 0.162 nm²).

^b Determined from the N₂ adsorption isotherm by t-plot method (Harkins and Jura eq.).

^c Determined from the N₂ adsorption isotherm by taking volume adsorbed at P/P₀ = 0.995.

^d Determined by V_{Total} - V_{Micropore}.

^e Adsorption average pore width (4V/A by BET).