Supplementary Information

Unexpected Production of Singlet Oxygen by Sub-Micron Cerium Oxide Particles and Enhanced Photocatalytic Activity against Methyl Orange

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I. Methyl orange dye degradation

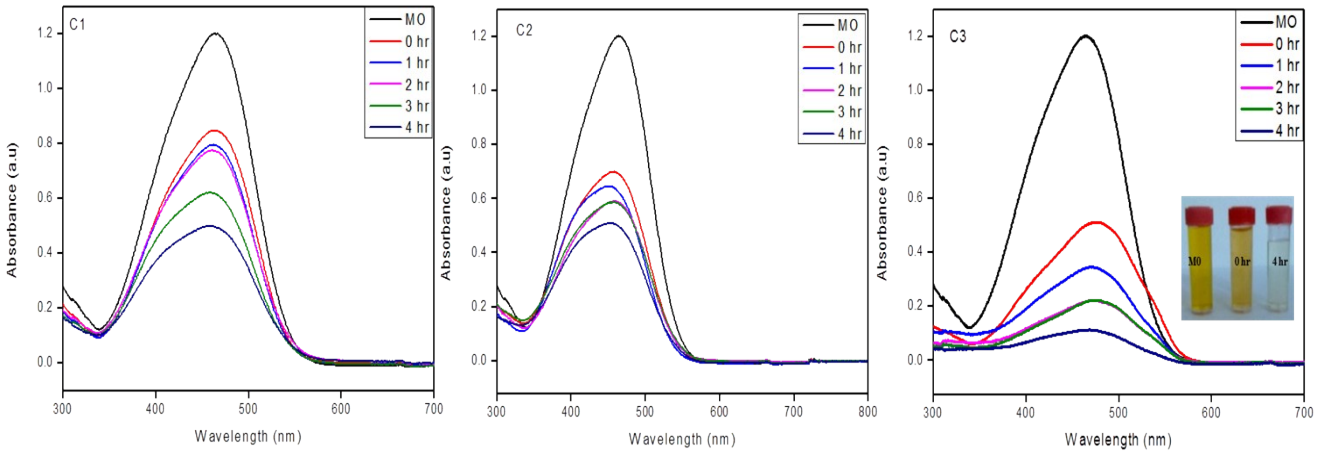

FIG. S1. UV absorption spectrum of Methyl orange dye (15 ppm) with CeO_2 particles.

II. Production of Reactive oxygen Species

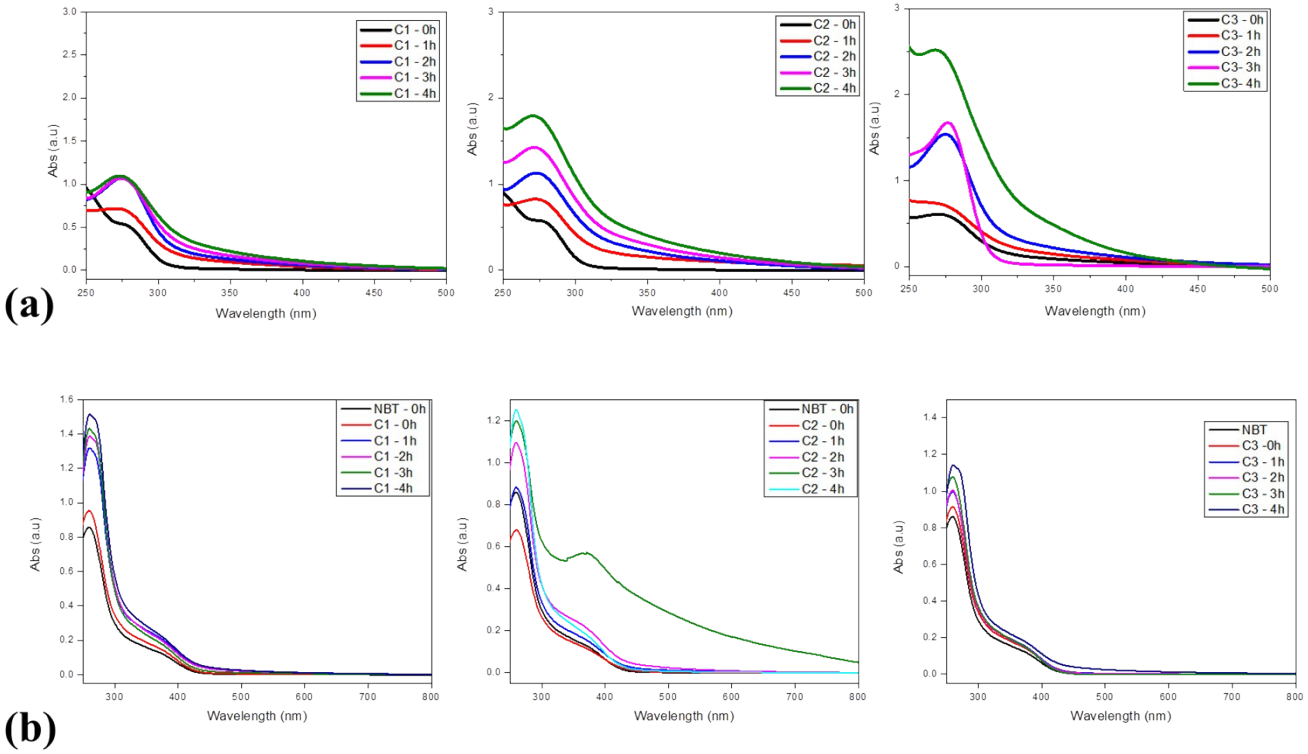

FIG S2. UV absorption spectrum of (a) FFA and (b) NBT for singlet oxygen and superoxide anion respectively with CeO_2 particles.

III. BET analysis of CeO_2 Particles

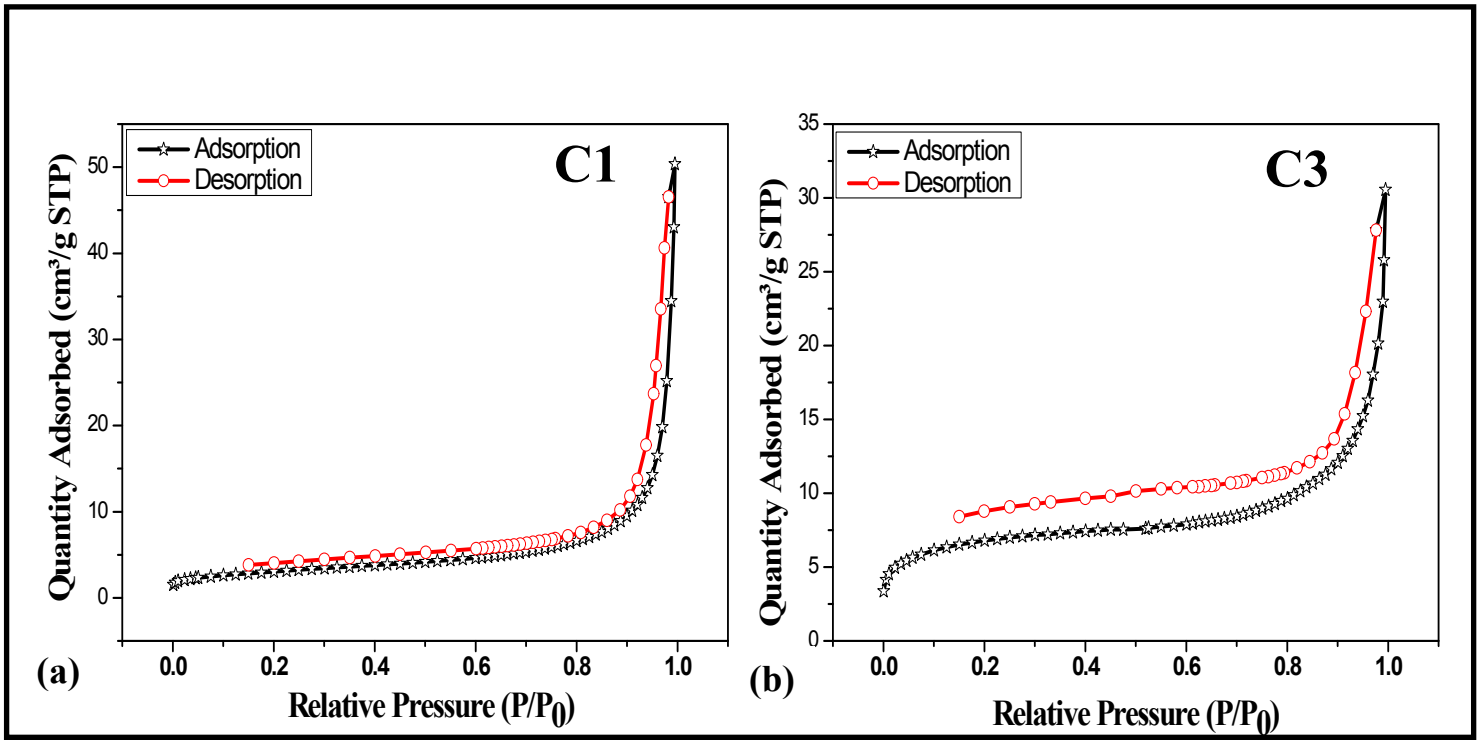

FIG S3. BET adsorption-desorption isotherms of C1 and C3.

IV. HRTEM and SAED pattern of Samples C1, C2 and C3

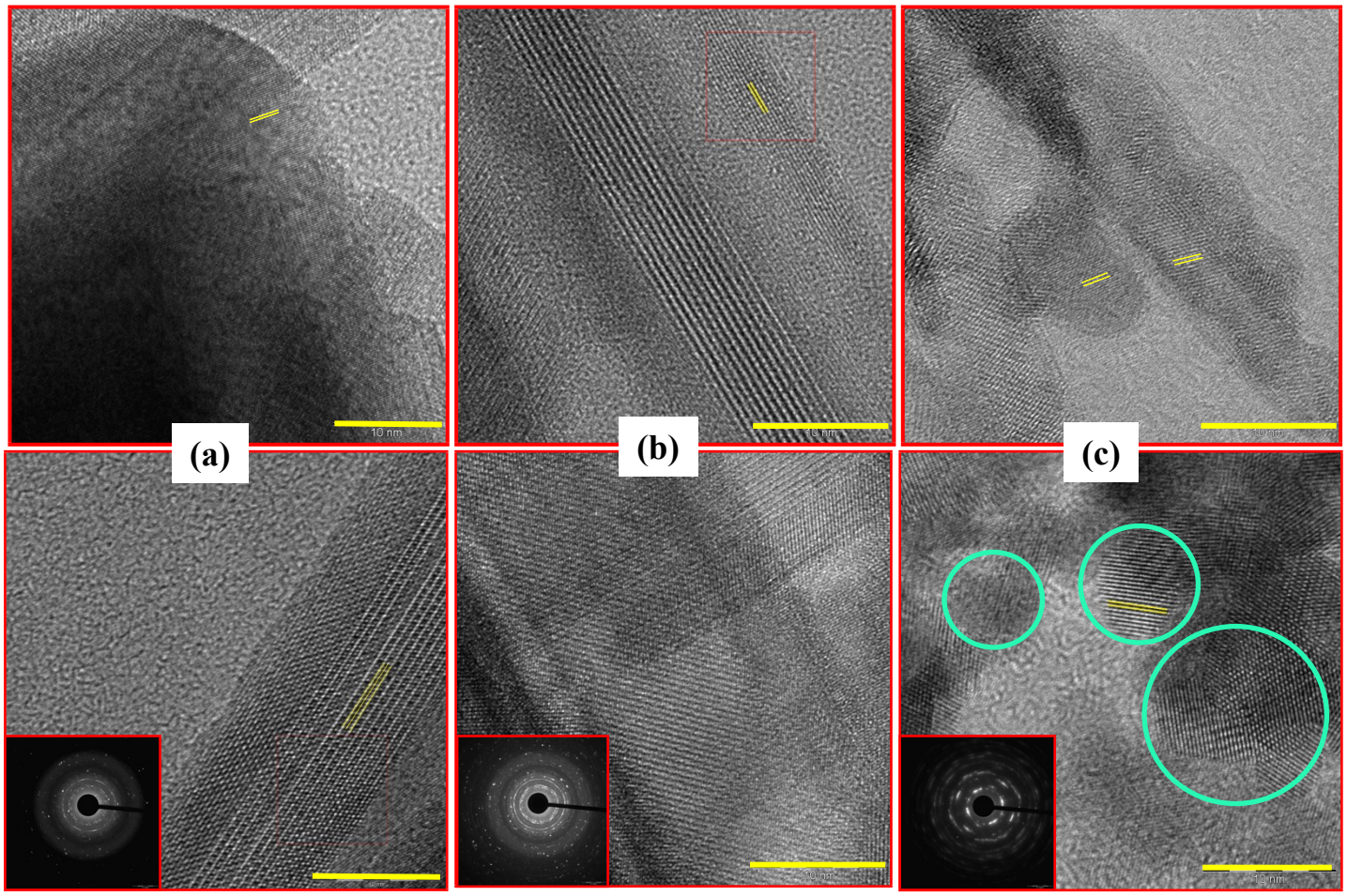

FIG S4. HRTEM images of CeO_2 particles (a) C1, (b) C2 and (c) C3.

Dotted rings: CeO_2 Particles of smaller than 10 nm.