

Bio-inspired construction of melanine like polydopamine coated CeO₂ as a high performance visible light driven photocatalyst for hydrogen production

M. Sridharan,^a P. Kamaraj,^{b,*} R. Vennila,^c Yun Suk Huh,^d M. Arthanareeswari,^a

^a Department of Chemistry, SRM Institute of Science and Techonology, Kattankulathur, Chennai, India.

^b Department of Chemistry, Bharath Institute of Higher Education and Research, Chennai, India.

^c Department of Chemistry, Adhiyaman arts & science college for women, Krishnagiri, India.

^d Department of Biological Engineering, College of Engineering, Inha university, Incheon, Korea.

S.No	Catalyst used	Light source	Hole scavengers	H ₂ production rate (μmol·g ⁻¹ ·h ⁻¹)	Refer
1	CdSQDs@CeO ₂	300W xe Lamp	Na ₂ SO ₃ and Na ₂ S	101.1	S1
2	NiP decorated CeO ₂ @TiO ₂	1000mW/cm ²	-	260	S2
3	CeO ₂ @Carbon nanostructure	300W xe Lamp	Methanol	582	S3
4	g-C ₃ N ₄ @CeO ₂	300W xe Lamp	Triethanolamine	860	S4
5	g-C ₃ N ₄ @CeO ₂	300W xe Lamp	Triethanolamine	1100	S5
6	Flower like g-C ₃ N ₄ @PDA	300W xe Lamp	Triethanolamine	1256	S6
7	CeO₂@PDA	300W xe Lamp	Na₂SO₃ and Na₂S	1500	Present work

Table S1. Comparison of photocatalytic activity

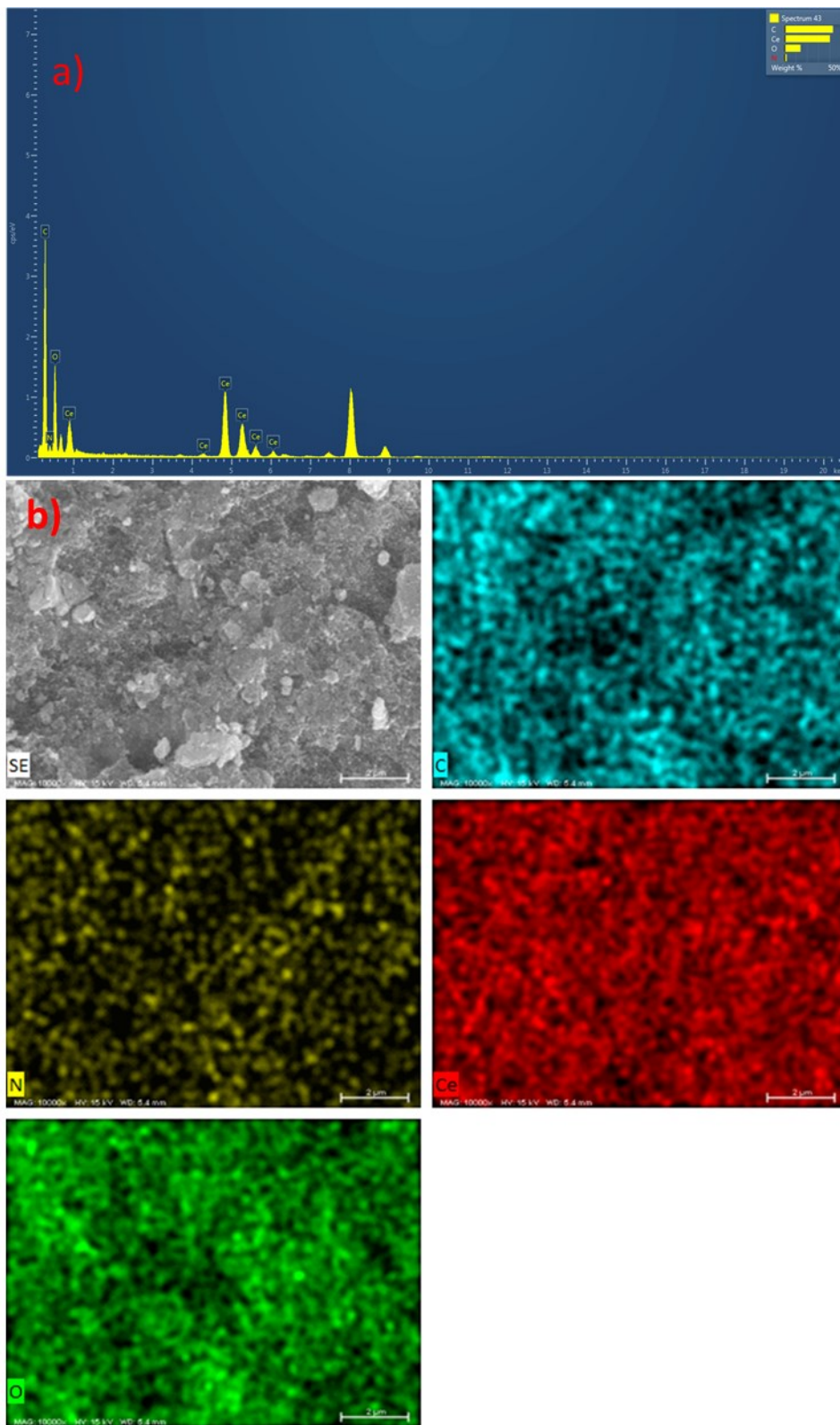


Figure S1. (a) EDS pattern of CeO₂@PDA-C composite and (b) EDS mapping of CeO₂@PDA-C composite

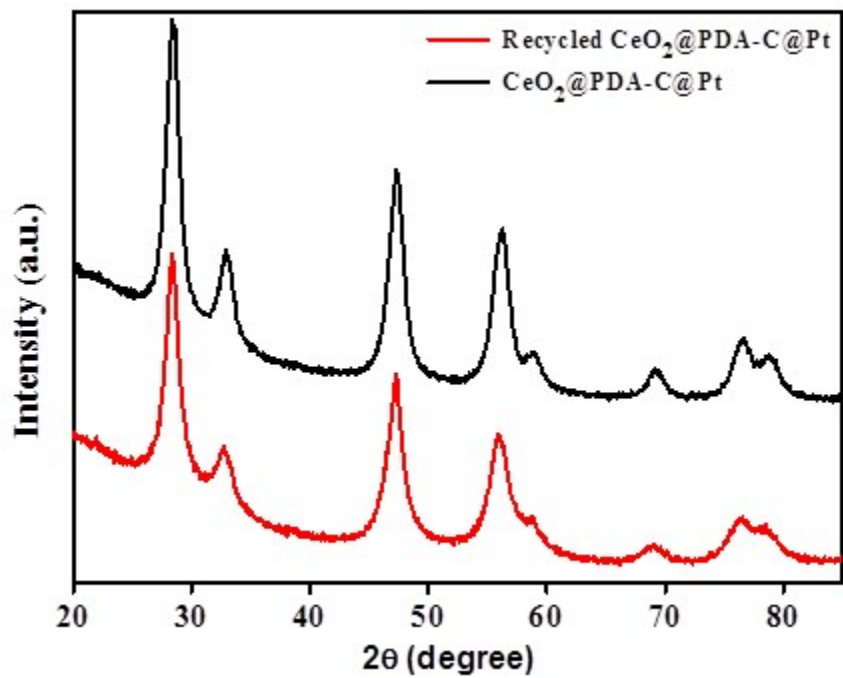


Figure S2. XRD pattern of the CeO₂@PDA-C@Pt composite before (a) and after (b) photoreaction

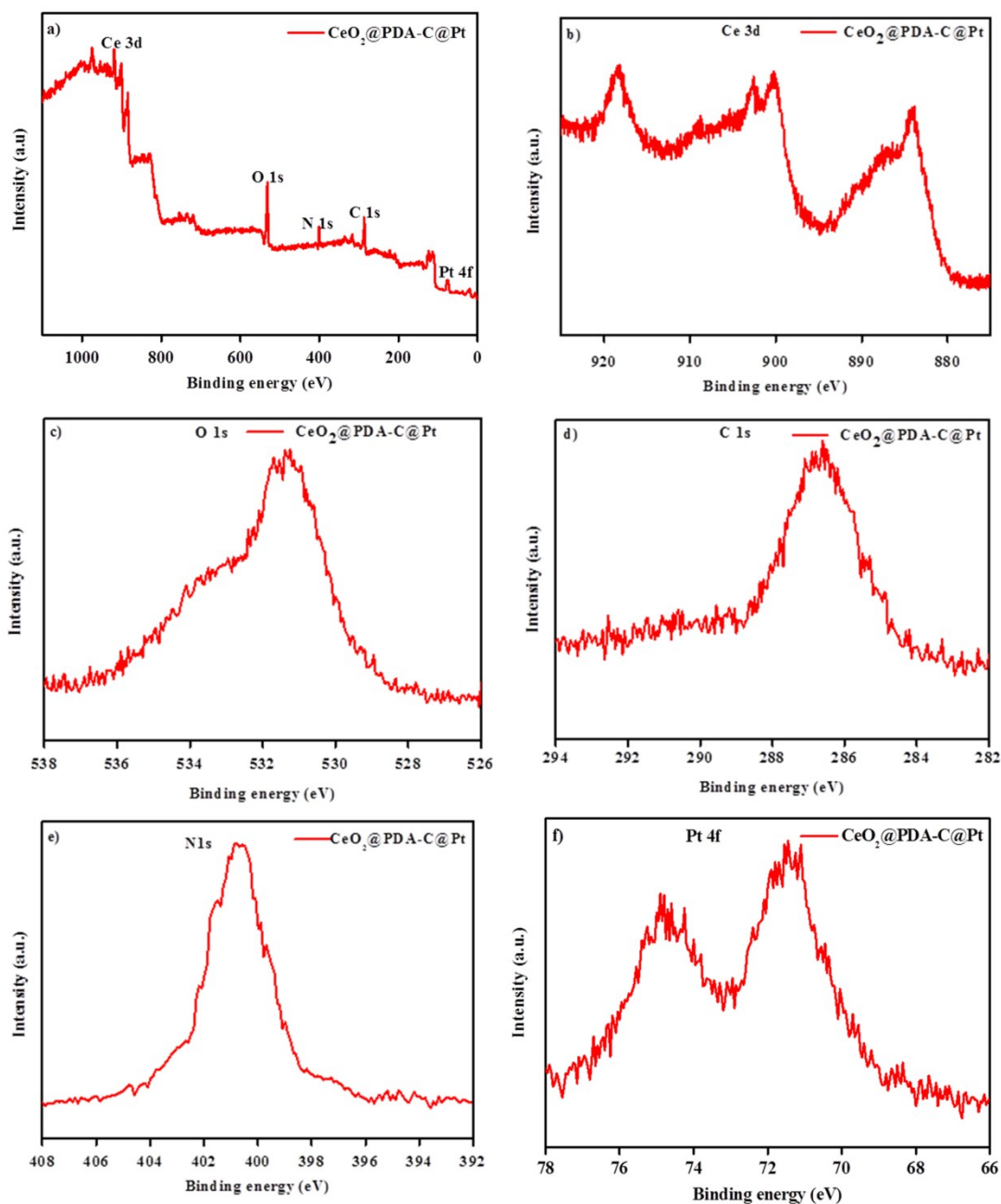


Figure S3. (a) XPS survey spectra of $\text{CeO}_2@\text{PDA-C@Pt}$ nanocomposite, high resolution XPS spectra of Ce 3d (b); O 1s (c); C 1s (d) N 1s (e) and Pt 4f (f).

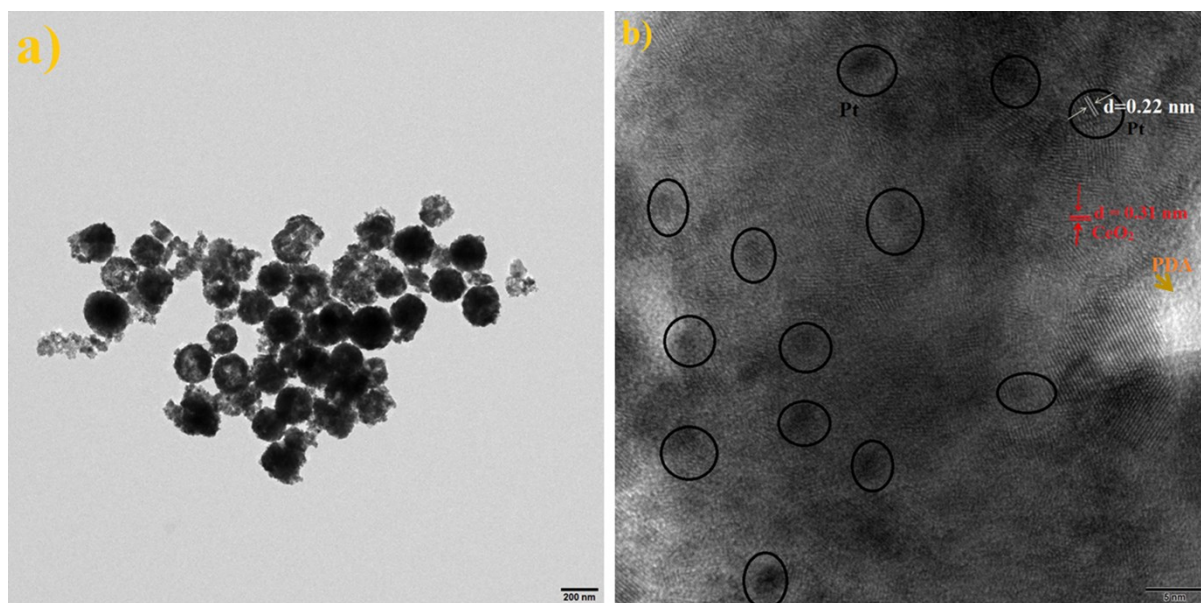


Figure S4. (a) TEM image and (b) HRTEM image of CeO₂@PDA-C@Pt

References

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