

A Green and Energy efficient Photocatalytic Process for accelerated synthesis of Lactic Acid Esters using functionalized quantum dots

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Supplementary Information

S1. TEM Micrographs (a) QD-TiO₂ (b) QD-TiO₂@S and (c)Re-QD-TiO₂@S

S2. (a) XRD pattern QD-TiO₂@S calcined at 300 °C at various calcinations temperatures . (b) XRD pattern QD-TiO₂@S calcined at 573K at various calcinations times from 1 hr to 4hrs.

S3. EDS data of (a)QD-TiO₂@S , (b)P25-TiO₂@S and (c)COM-TiO₂@S and (a1)Re-QD-TiO₂@S , (b1)Re-P25-TiO₂@S and (c1)Re-COM-TiO₂ .

S4. Elemental dispersion mapping of QD-TiO₂@S (a) Combined elemental mapping (b) O mapping (c) S mapping (d) Ti mapping.

S5. XPS survey scan of QD-TiO₂, QD-TiO₂@S and Re-QD-TiO₂ compared with P25-TiO₂@S and COM-TiO₂@S.

S6. Reusability test of catalyst at 303.15K , catalyst dose 0.05g/ml and initial feed ratio (1:10) lactic acid to alcohol.

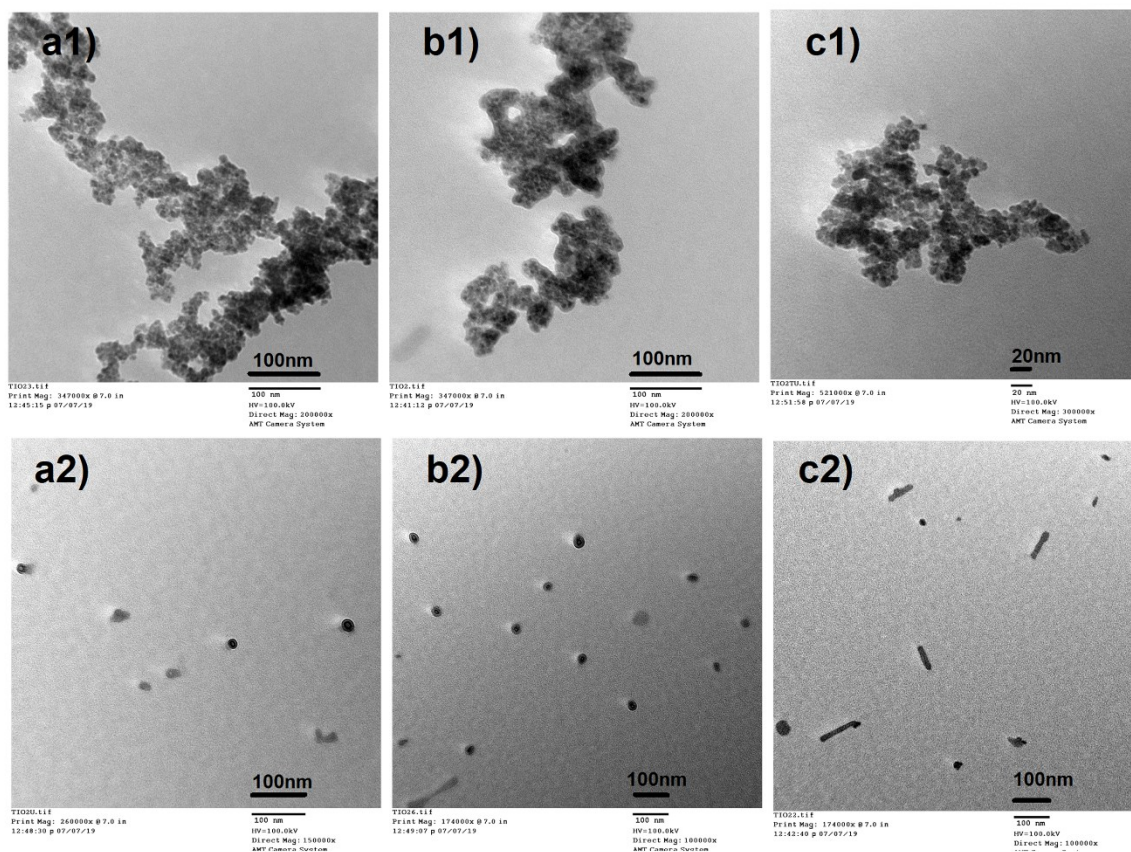


Figure-S1- TEM Micrographs (a1-a2) QD-TiO₂ (b1-b2) QD-TiO₂@S and (c1-c2)Re-QD-TiO₂@S

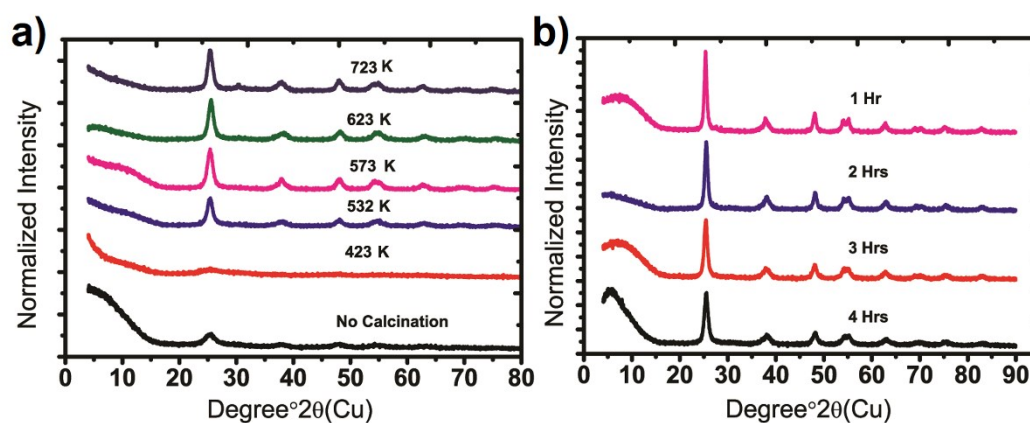


Figure-S2-. (a) XRD pattern QD-TiO₂@S calcined for 1 hr at various calcinations temperatures . (b) XRD pattern QD-TiO₂@S calcined at 573 K at various calcinations times from 1 hr to 4hrs.

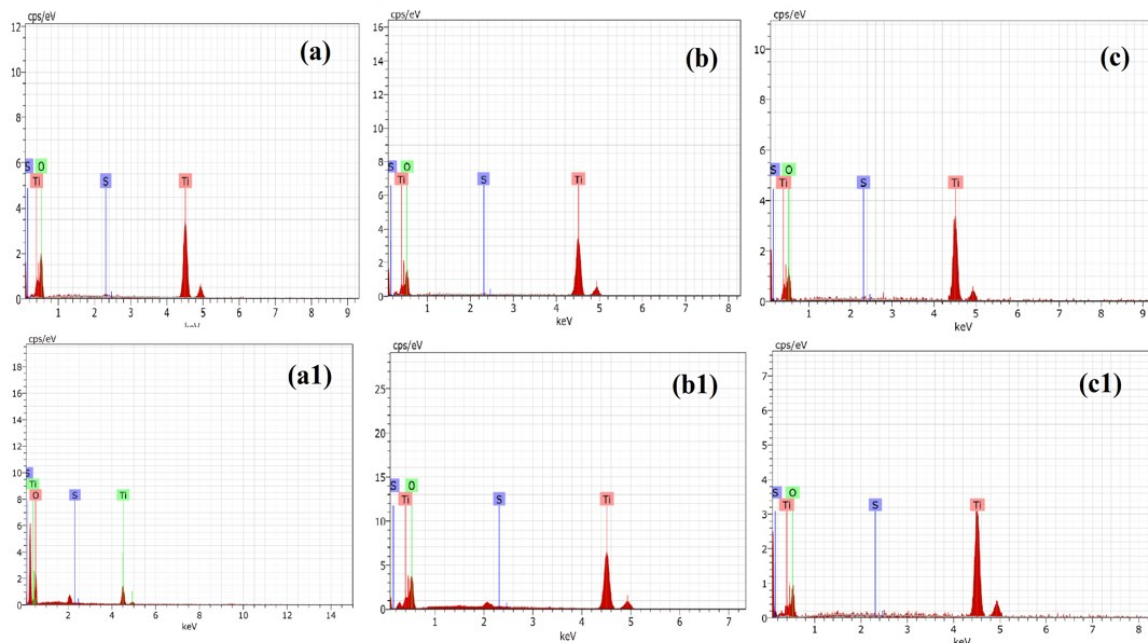


Figure-S3- EDS data of (a)QD-TiO₂@S , (b)P25-TiO₂@S and (c)COM-TiO₂@S and (a1)Re-QD-TiO₂@S , (b1)Re-P25-TiO₂@S and (c1)Re-COM-TiO₂ .

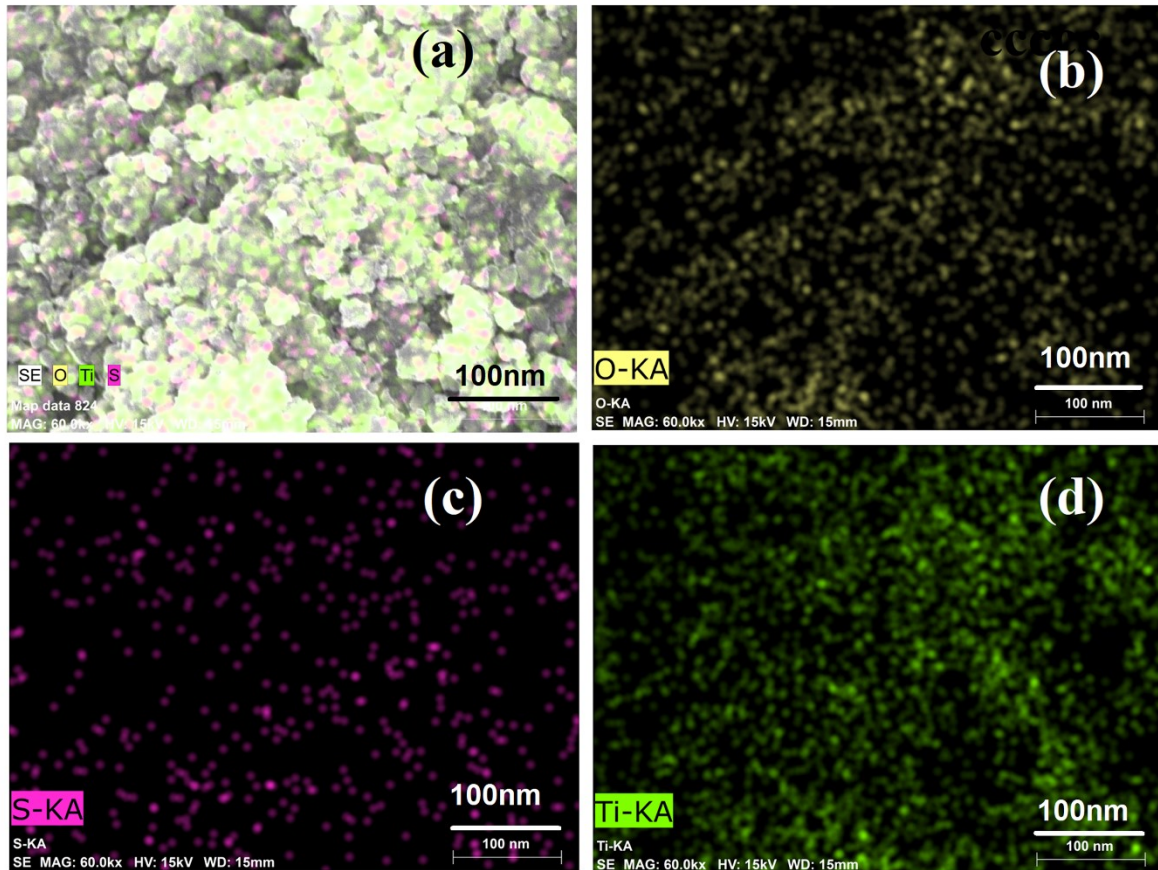


Figure S4- Elemental dispersion mapping of QD-TiO₂@S (a) Combined elemental mapping (b) O mapping (c) S mapping (d) Ti mapping

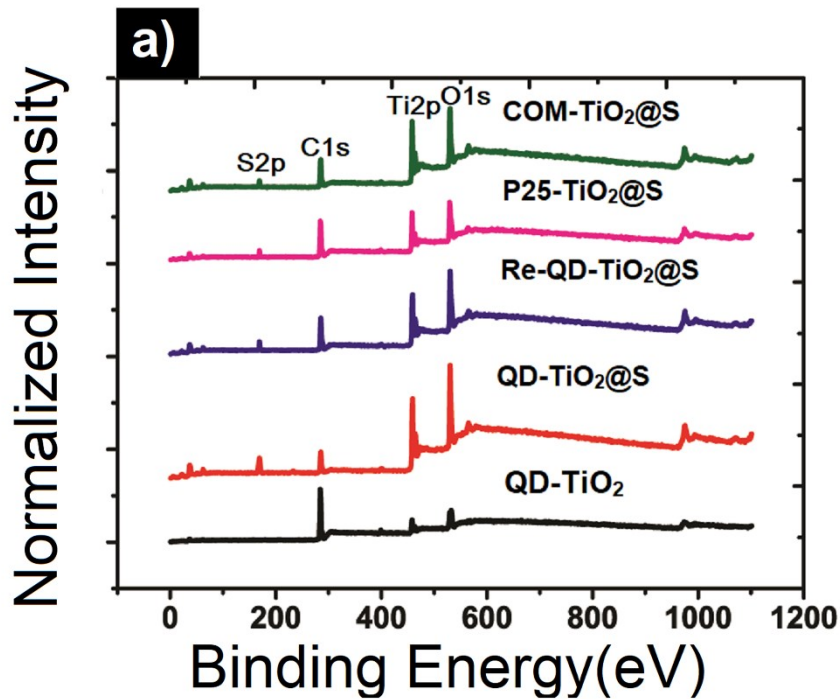


Figure S5- XPS survey scan of QD-TiO₂, QD-TiO₂@S and Re-QD-TiO₂ compared with P25-TiO₂@S and COM-TiO₂@S

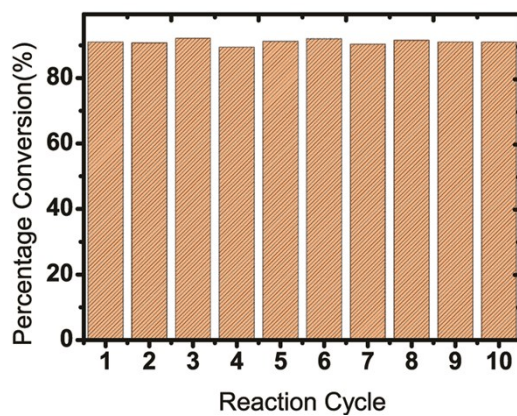


Figure -S6- . Reusability test of catalyst at 303.15K , catalyst dose 0.05g/ml and initial feed ratio (1:10) lactic acid to alcohol.