Electronic Supplementary Information (ESI)

(100) surface exposed CeO$_2$ Nanocube as Efficient Heterogeneous Catalyst in Tandem Oxidation of Benzyl Alcohol, para-Chlorobenzyl Alcohol and Toluene to Corresponding Aldehydes Selectively

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**Figure S1.** Particle size distribution histogram of as synthesized CeO$_2$ nanorods. (a) Length and (b) diameter distribution of nanorods

**Figure S2.** Dark field TEM image of ceria nanocube sample.
Figure S3. FT-IR spectrum of as prepared benzaldehyde in the reaction condition of 1 mmol benzyl alcohol, 10 mL water and 10 mg CNC in the presence of molecular oxygen at 35°C and 1 bar for 30 minutes.

Figure S4. GC chromatograph of the reaction product obtained from benzyl alcohol oxidation with CNC catalyst at 35 ºC for 30 minutes in the reaction condition of 1 mmol benzyl alcohol and 10 mL water in the presence of molecular oxygen at 35 ºC.
Figure S5. NMR spectrum of the reaction product obtained from benzyl alcohol oxidation with CNC catalyst at 35 ºC for 30 minutes in the reaction condition of 1 mmol benzyl alcohol and 10 mL water in the presence of molecular oxygen.
Figure S6. GC chromatograph of the reaction product obtained from para-chlorobenzyl alcohol oxidation with CNC catalyst at 35 ºC for 1 hour in an optimum reaction condition of 1 mmol PCBA and 10 mL chloroform in the presence of 0.05 mmol H₂O₂.

Figure S7. GC chromatograph of the reaction product obtained from toluene oxidation with CNC catalyst at 90 ºC for 12 hours in the reaction condition of 1 mmol toluene and 10 mL water in the presence of molecular oxygen.
Figure S8. TEM image of as synthesized CeO$_2$ nanoparticles under the similar reaction condition as described in experimental section however without the use of oleic acid.