

Environment friendly template free microwave synthesis of sub-micron sized hierarchical titania nanostructures and their application in photovoltaics

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Supporting information

The UV/VIS spectra of the samples were obtained using unico UV-2800 UV/VIS spectrophotometer. The band gap values are calculated by $E=hc/\lambda$ from the absorption onset wavelength value. The spectra (fig. SI1) and the absorption onset values (fig. SI 2) are shown below.

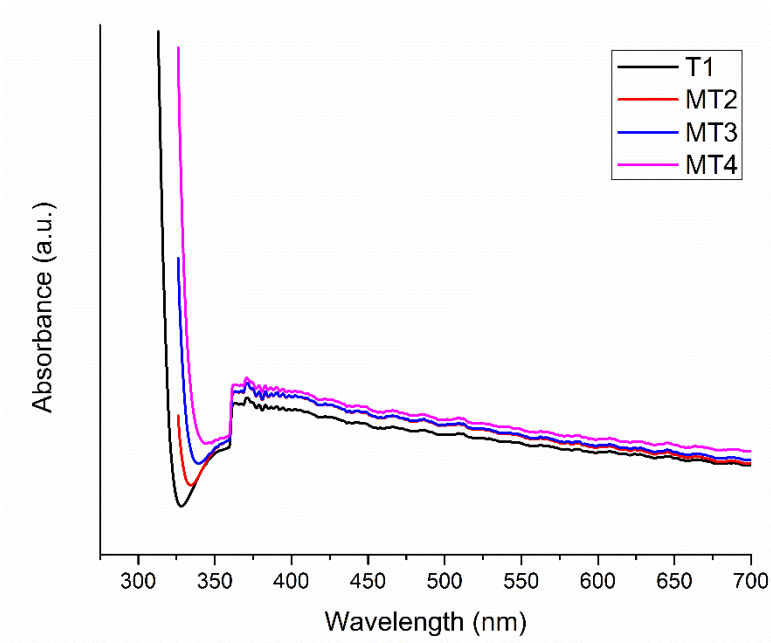


Fig. SI 1: UV/vis absorption spectra of samples T1, MT2, MT3 and MT4

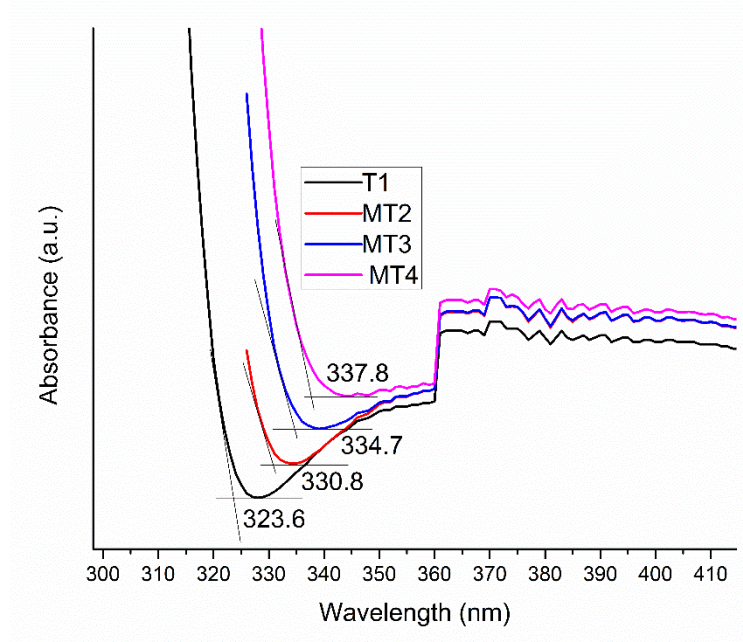


Fig. SI 2: Absorption onset values for band gap estimation for the samples T1, MT2, MT3, MT4.

FESEM images for the test experiments i.e hydrothermal treatment of anatase in 10M NaOH aq. solution at 100°C (fig SI 3) and reflux condensation of same contents (fig. SI 4) are given. There is no nanoflower formation in both these experiments indicating a specific role played by microwaves in the production of hierarchical nanostructures.

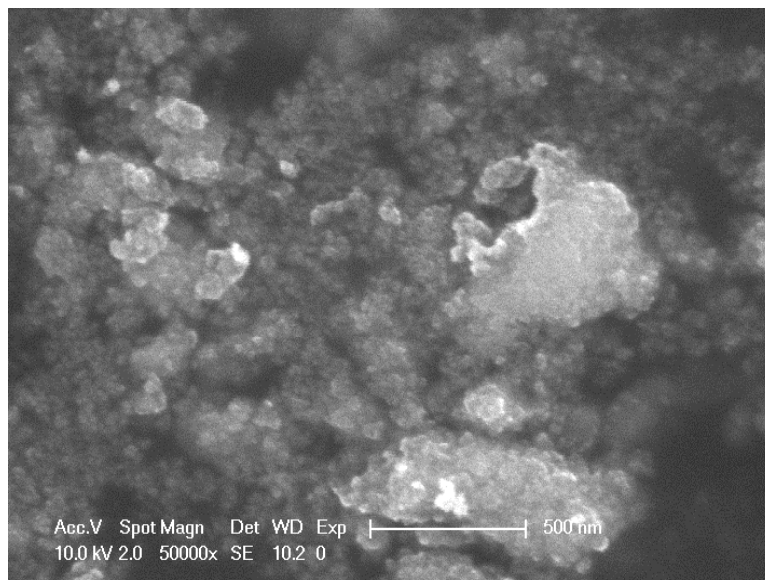


Fig SI 3: Titania powder after hydrothermal treatment in 10 M NaOH aq. Solution at 100°C for 20 minutes

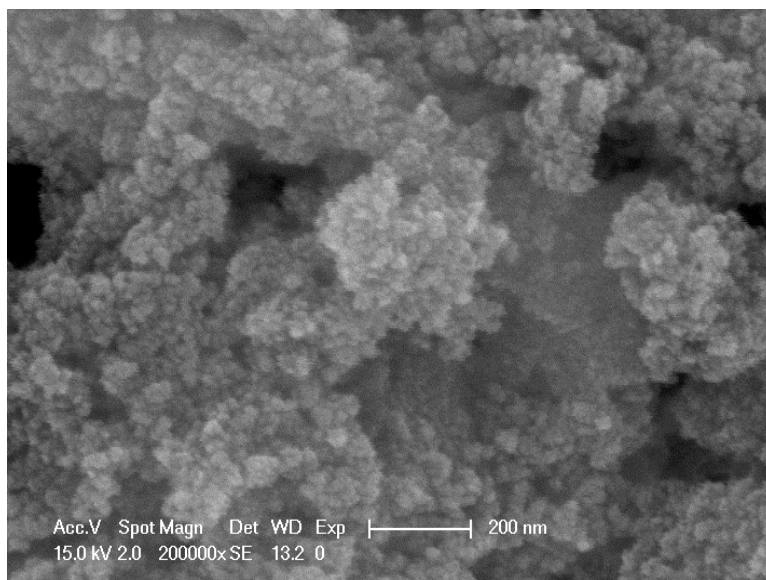


Fig SI 4: FESEM image of titania nanopowder after 20 minutes reflux condensation in 10M NaOH aq. Solution.