Supporting Information

Selective Photocatalytic Oxidation of 4-Substituted Aromatic Alcohols in Water with Rutile TiO₂ Prepared at Room Temperature

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SEM Images

SEM images were recorded in order to measure the particles agglomerations. SEM images of home-made rutile photocatalysts prepared at room temperature are presented below along with the commercial sample (Sigma Aldrich, rutile) used for the sake of comparison.

SIGMA-ALDRICH
HP1/50

(d)

HP1/75

(e)
Figure S1. Selected SEM micrographs of rutile Sigma Aldrich sample (a) and home prepared (b-f) TiO$_2$ samples.

NMR Analysis

Figure S2 shows the NMR $^1$H and $^{13}$C spectrum of 4-metoxybenzyl aldehyde, MBAD, (the main partial oxidation product of 4-metoxybenzil alcohol). It can be noticed that no peaks coming from impurity are present thus indicating that the aldehyde is quite pure, more than 99%.
1H-NMR Spectrum of MBAD

(a)
Figure S2 $^1$H (a) and $^{13}$C (b) NMR spectra of purified MBAD of a representative sample in the presence of the best selective rutile photocatalyst HP1/50.