**SUPPORTING INFORMATION**

**Hydrothermal Synthesis of Carbon Nanotube-Titania Composites for Enhanced Photocatalytic Performance**

Brian M. Everhart,a Montgomery Baker-Fales,a Haider Almkhelfe,a Eric Banning,a Tyson C. Back,a Bailey McAuley, Placidus B. Amamaa

 *aTim Taylor Department of Chemical Engineering, Kansas State University, Manhattan, KS 66506, USA.*

*bMaterials and Manufacturing Directorate, Air Force Research Laboratory, WPAFB, OH 45433*

**TABLE SI.** Summary of phase composition of photocatalysts: calculated ratio of anatase and rutile determined from Equation 1 and the phase composition determined via RIR method.

|  |  |  |
| --- | --- | --- |
|  | Calculated Ratio (%) | RIR Method (wt%) |
|  | Anatase | Rutile | Anatase | Rutile | Brookite |
| TiO₂ | 92 | 8 | 82.5 | 9.6 | 7.9 |
| TiO₂/MWCNT-1% | 98 | 2 | 87.6 | 9.7 | 2.7 |
| TiO₂/MWCNT-5% | 66 | 34 | 58.6 | 15.5 | 25.9 |

“The Reference Intensity Ratio (RIR) is a general, instrument-independent constant for use in quantitative phase analysis by the X-ray powder diffraction internal standard method.”**1**

1. Hubbard, C. R.; Snyder, R. L., RIR - Measurement and Use in Quantitative XRD. *Powder Diffraction* **1988,** *3* (2), 74-77.



FIG. S1. Raman spectra of TiO2, TiO2/MWCNT-1%, and TiO2/MWCNT-5% using 514 nm laser excitation.



**FIG S2.** Adsorption-desorption isotherms of TiO2, TiO2/MWCNT-1%, and TiO2/MWCNT-5% photocatalysts.



FIG S3. UV-Vis absorbance spectra of TiO2, TiO2/MWCNT-1%, TiO2/MWCNT-5%, and P25 as a reference sample.