**Supplementary Information**

**Characterization and evaluation of the photocatalytic activity of oxides based on TiO2 synthesized by hydrolysis controlled by the use of water/acetone mixtures**

***Werick A. Machado\*a, Antonio E. H. Machadoa,b***

*aUniversidade Federal de Uberlândia, Instituto de Química, Laboratório de Fotoquímica e Ciência de Materiais. Av. João Naves de Ávila, 2121 – Bloco 5K. CEP 38408-100 Uberlândia, MG, Brazil*

*bUniversidade Federal de Catalão, Unidade Acadêmica Especial de Física, Programa de Pós-Graduação em Ciências Exatas e Tecnológicas. Av. Lamartine P. Avelar, 1120. CEP 75704-020 Catalão, GO, Brazil*

# Table

Table S1 - Quality factors of the Rietveld refinement, obtained for synthesized oxides.

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| Oxide | S | Rwp | Rexp |
| W1 | 1.28 | 8.93 | 6.98 |
| W1-25 | 1.31 | 9.21 | 7.00 |
| W1-50 | 1.31 | 9.31 | 7.08 |
| W1-75 | 1.22 | 8.73 | 7.11 |

**Figures**

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**Supplementary Figure 1**- Diffratograms obtained after Rietveld refinement for the synthesized oxides: (a) W1, (b) W1-25, (c) W1-50 and (d) W1-75.



**Supplementary Figure 2-** Particle size distribution histograms of the synthesized oxides: (a) W1, (b) W1-25, (b) W1-50, and (d) W1-75.

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**Supplementary Figure 3-** Degradation of P4R by direct photolysis, and photocatalytic performance in the mineralization (a) and discoloration (b) of P4R by the studied oxides.

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**Supplementary Figure 4 –** Photocatalytic performance in a reuse assay of W1-50 in mineralization (a) and discoloration (b) of P4R: obtaining a mineralization constant of 4.0 x103 min-1 in the first stage, and 10.0 x103 min-1 in the second of the reaction using the recycled catalyst.

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**Supplementary Figure 5 -** Degradation of RR120 by direct photolysis, and photocatalytic performance in the mineralization (a) and discoloration (b) of RR120 by the studied oxides.