World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:12, No:10, 2018

Investigation of the Effects of Simple Heating Processes on the Crystallization of Bi_2WO_6

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Abstract : In this study, the synthesis of photocatalytic Bi_2WO_6 was practiced with simple heating processes and the effects of these treatments on the production of the desired compound were investigated. For this purpose, experiments with $Bi(NO_3)_3.5H_2O$ and H_2WO_4 precursors were carried out to synthesize Bi_2WO_6 by four different combinations. These four combinations were grouped in two main sets as 'treated in microwave reactor' and 'directly filtrated'; additionally these main sets were grouped into two subsets as 'calcined' and 'not calcined'. Calcination processes were conducted at temperatures of 400°C, 600°C, and 800°C. X-ray diffraction (XRD) and environmental scanning electron microscopy (ESEM) analyses were performed in order to investigate the crystal structure of powdered product synthesized with each combination. The highest crystallization of produced compounds was observed for calcination at 600°C from each main group.

Keywords : bismuth tungstate, crystallization, microwave, photocatalysts
Conference Title : ICCBEE 2018 : International Conference on Chemical, Biological and Environmental Engineering
Conference Location : Los Angeles, United States
Conference Dates : October 30-31, 2018