

Programme & The Book of Abstracts

Twenty-first Annual Conference

YUCOMAT 2019

&

Eleventh World Round Table Conference

on Sintering –

Science of Sintering & Its Future: Fifty Years Later

WRTCS 2019

Herceg Novi, Montenegro September 2 - 6, 2019

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Organised by:
Materials Research Society of Serbia
&
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The effect of pH on visible-light photocatalytic properties of pseudobrookite nanoparticles

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In this study, pseudobrookite (Fe_2TiO_5) nanoparticles were fabricated by a modified sol-gel method using $\text{Fe}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$ and $\text{Ti}(\text{OC}_3\text{H}_7)_4$ as starting reagents and ethanol as solvent. Oxalic acid was used as a chelating agent while cetyltrimethylammonium bromide (CTAB) and citric monohydrate were used as surfactants. Structural and morphological characterization using X-Ray Diffraction (XRD) and Field Emission Scanning Electron Microscopy (FESEM) analysis confirmed the formation of pseudobrookite nanoparticles. As synthesized Fe_2TiO_5 nanoparticles were utilized as photocatalysts for decolorisation of Methylene blue (MB) under visible light irradiation. It was observed that the adsorption of MB onto Fe_2TiO_5 nanoparticles is strongly dependent on the solution pH. Maximum decolorization was observed for Fe_2TiO_5 nanoparticles prepared with CTAB under alkaline conditions (pH=10.5).

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