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Preparation of ZrO_2:Tb via microwave hydrothermal method

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Keywords

zirconia, terbium, microwave, hydrothermal

Abstract

Terbium doped zirconium dioxide was successfully synthesized using microwave hydrothermal method. The powder is strongly agglomerated and has mean crystallite size around 6 nm. The density of obtained powders is significantly lower than density of bulk zirconium dioxide indicating the existence of zirconium and dopant hydroxides remaining after the hydrothermal process. The effect of terbium on morphology, phase composition, specific surface area and density of the samples was determined.