

SYNTHESIS OF NANO-SIZED TiO₂/ZrO₂/SiO₂
DISPERSIONS AND STUDY OF THEIR
STRUCTURAL, OPTICAL,
AND PHOTOCATALYTIC
PROPERTIES

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S u m m a r y

The sol-gel method was applied to synthesize TiO₂/ZrO₂/SiO₂ powders (a content of 21:9:70 mol.%) with the use of various silicon dioxide sources. Using the X-ray fluorescence analysis (XFA), we found that two phases (the anatase and srilankite ones) are crystallized simultaneously in all synthesized composites. The electron paramagnetic resonance (EPR) method was used to study the paramagnetic centers, which are formed on the anatase surface, and the influence of high-energy radiation on a change of the defect structure in corresponding specimens. A relationship between the defect structure of ternary composites and their photocatalytic activity has been established.