



Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION IX
New Frontiers in Multifunctional Material Science and Processing

Serbian Ceramic Society
Institute of Technical Sciences of SASA
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
Institute for Technology of Nuclear and Other Raw Mineral Materials

PROGRAM AND THE BOOK OF ABSTRACTS

Serbian Academy of Sciences and Arts, Knez Mihailova 35
Serbia, Belgrade, 20-21. September 2021.

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ORL

Fractal reconstruction of fiber-reinforced polymer composites

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Polymers offer the possibility of different reinforcement incorporation due to a broad range of chemical structures. Along with this feature, their light weight and processing ease made them a class of materials that have been applied in construction parts, drug delivery agents or electronic devices. Epoxy-based composites have used as insulators in microelectronic devices due to its chemical resistance, good adhesion properties and endurance. As epoxies have low fracture resistance, they are often reinforced with different kinds of fibers. With thorough knowledge of the structure, physical properties can be predicted and included in the processing of future composites, especially that electronic materials minituarization brought micro- and nanoscale level properties at spotlight. Fractal nature analysis is a mathematical method that has proved to be efficient in grain interface properties applied on perovskite ceramic materials. In our study, fiber shape reconstruction and determination of Hausdorff dimension have been achieved with the application of fractal regression model employed in software Fractal Real Finder opening a new path for the prediction of reinforcement shape and size, all with the aim of processing composite materials with desired properties.