



**Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION V
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
School of Electrical Engineering and Computer Science of Applied Studies**

PROGRAM AND THE BOOK OF ABSTRACTS

**Serbian Academy of Sciences and Arts, Knez Mihailova 35
Serbia, Belgrade, 21st-23rd September 2016.**

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Professional forensic laboratories, usually associated with national police departments, are often understaffed with experts on the environmental investigation techniques. Thus, all efforts need to be made to provide appropriate education to all stake holders – from first response teams to law-enforcement professionals, at torney and judges.

KN6

Fractals, Materials and Energy Technologies

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World's perennial need for energy yields the whole spectra of technological challenges and scientific tasks. An important stream in finding new solutions leads over materials characterized by precise microstructural architecture based on fractal geometry/analysis covering wide size ranges down to nano scale. Having such a deep geometric hierarchy opens new possibilities in energy storage capacities supported by fractal resources. These novel ideas are natural continuation of some early fractal applications have been used as a tool in energy research, applying on diverse energy technologies, from photovoltaics to fuel cells and carbon capture.

All three items that are essential regarding energetic questions, free energy stocks location, energy harvesting and short/ long term energy storage have their specific common points with fractal nature. Also, the concept of energy as physical objects property, share some features characteristic to fractal objects. In other words, fractal, as a crucial concept of modern theoretical-experimental physics is tightly connected with the process of cultivating the wild energy as well. Here, the above items will be discussed. The term “geometry” as it is custom in plain language, understands “shape” rather than the science of geometry. In this sense, “geometry” describes property of hierarchy that is more present in every day's life than we are usually aware of. Just note that all our senses often convey information on the quality of some matter by absorbing certain hierarchical order. The touch feeling of smooth or rough surface, olfactory or taste data differ by energetic level that generates according to geometry of particles or clusters that follow fractal patterns. Adjusting specific, a priori constructed fractal micro or nano architecture make the energetic flow more effective by decrease losses made by non-conformal geometry.