CMM-SolMech 2022 conference

S08 Nanomaterials and nanocomposites, their properties and applications

List of abstracts

ID 185: *A new concept of epoxy resin composite doped with carbon-based nanoparticles: manufacturing, experiment and modeling* – S. Wilczewski, Z. Nowak, R. Pęcherski, M. Giersig

ID 225: *Critical thickness evolutution during the subsequent epitaxial layers growth* – P. Dłużewski

ID 268: *Design of nanostructures based on molybdenum* – T. Burczyński, W. Kuś, M. Maździarz, A. Mrozek

ID 282: *Development of constitutive relations of viscoplasticity accounting for shear banding* – R. Pęcherski, Z. Nowak

ID 306: *Specific properties of nanomaterials and their potential in technical applications* (keynote) – M. Giersig

SPECIFIC PROPERTIES OF NANOMATERIALS AND THEIR POTENTIAL IN TECHNICAL APPLICATIONS

Michał Giersig[1]

[1] Institute of Fundamental Technological Research, Poland

mgiersig@ippt.pan.pl

Nanomaterials can generally be divided into single nanoparticles and two- and three-dimensional structures based on them. In my talk, I will address nanomaterials' structural, electronic, and mechanical properties that make them superior to traditional materials. The current state of research and the range of applications of nano-materials, their possible applications based on nanoparticle selection, manufacturing processes, particle size and composition, and the influence on their mechanical properties are presented and discussed using examples. This underlines the growing future importance of nanomaterials in the development and application of materials science.