

International Conference on

# 3D Printing Technology and Innovations

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### **Additive Manufacturing of Medical Products**

Medical products require high quality and functionality – manufacturers seek ways of improving them and are willing to adopt new technologies, including for additive manufacturing (AM). Some medical products perform better, if at all, if they closely fit anatomic features of their user – this calls for capabilities to design and manufacture 3-dimensional geometries, much easier to achieve with AM than with more conventional technologies. The presentation will cover methods of designing and producing anatomic models for training and education purposes, models for off-line surgical operation planning or rehearsal and tools supporting such operations – products most valuable for their shapes, based on selected patients' anatomies. More advanced medical products manufactured with AM are implants – either improved versions of established solutions, like hip or knee joint replacements with better biomechanical properties, or totally new types of personalised implants, for example scaffolds supporting bone regrowth in patients with damaged or surgically removed part of a mandible. The presentation will discuss methods of manufacturing such implants and show future potential of additive manufacturing in tissue and organ bioprinting.

### **Biography**

Bogdan Dybala has completed his PhD from the Wroclaw University of Science and Technology and continued for the habilitation procedure, completed in 2014. He is the deputy director of the Centre for Advanced Manufacturing Technologies (CAMT), a research and education group at the University. His research interests include additive manufacturing and reverse engineering, especially in biomedical applications. He has published more than 35 papers in reputed journals and has been serving as a reviewer for journals and funding organizations.

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