

## **Special Session SS\_15**

### **Design and rapid manufacturing of customized medical products**

#### **Brief description of the specific scientific scope of the Special Session:**

Medicine and biomedical engineering are today among the most vital applications of computer aided design and 3D printing (additive manufacturing). Both doctors and patients, as well as scientists can benefit from recent advancements in this technology and its increasing availability at acceptable cost. Customized medical products, both for doctors and patients, become a standard and their design and production processes must be studied, optimized and improved in order to obtain tangible progress. Therefore, this Special Session is dedicated to research and review papers tackling the problems of computer aided design and rapid manufacturing in medical and biomedical engineering applications, especially for customized implants, orthopaedic and prosthetic devices, other artificial organs and new methods of treatment, utilizing devices designed and manufactured individually for a specific patient.

#### **List of topics of interest**

1. CAD design of anatomical models,
2. Processing of medical imaging data for development of customized, anatomically adjusted products,
3. 3D scanning and reverse engineering techniques in medicine and biomedical engineering,
4. Mass customization in medicine, design automation,
5. Selection and improvement of materials for 3D printed medical products,
6. Optimization of 3D printing processes of customized medical products,
7. XR techniques (Virtual and Augmented Reality) in design of medical products,
8. Numerical simulation of 3D-printed structures used in medicine,
9. Destructive and non-destructive testing of 3D printed individualized medical products.

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