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**Topic of the Speech:**
Melt Electrospun Fibrous Architectures of Different Geometries

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**Professor Budimir Mijovic** is employed as a full time professor and researcher at the Department of Basic Natural and Technical Sciences, Laboratory of Nanotechnology, at the University of Zagreb, Faculty of Textile Technology, Zagreb, Croatia. He finished his PhD degree in the field of biomaterials and bioengineering at the Faculty of Mechanical Engineering and Naval Engineering, University of Zagreb. After his PhD his research was focused on the mechanics of blood vessels and biorheology.

His scientific area of interest is nanofibers production via electrospinning and their application in the field of: soft tissue cells culture for potential tissue regeneration, thermally insulating materials, UV-protective materials etc. His future focus will be on the realization of a project proposal funded by the Croatian Science Foundation concerning the development of a custom tailored scaffold prototype for skin and ocular tissue growth.

**ABSTRACT SUBMISSION**
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# Melt Electrospun Fibrous Architectures of Different Geometries

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**ABSTRACT (NO MORE THAN 500 WORDS:)**

In melt electrospinning technique the polymer melt is stretched with the aid of a high voltage and cooled down to form microfibers structures with the fibres diameters mostly in the ten micrometres range, although studies reported on the diversity in this range starting from hundreds of nanometres to hundreds of microns. Within this respect the technique is of importance in the biomedical field where tissue engineering scaffolds with bimodal (nano and micro) fibrous structures are preferred in regard to cells adhesion, spreading and infiltration to final tissue reconstruction. There are not many researches, compared to solution electrospinning, dealing with the melt spun fibrous structures and the existing ones differ in their set-ups configurations with differences generally coming from the heating system (or the melt head) and the collector type. In direct melt electrospinning writing the electrified polymer melt is driven by a moving collector to provide precise deposition according to previously defined geometry. In this work a review of the recently reported melt electrospinning devices especially those based on the direct writing principle will be given, followed by their comparison with the new melt Spraybase electrospinning device. The Spraybase device provides high precision melt jet deposition into 2D and 3D programmed architectures, with versatile translational speeds of the collector plate in the X-Y and the melt head in the Z direction. The melt spun fibrous architectures are designed depending on the types of tissue cells used for the development of scaffolds.

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