

Symposium X : Materials for Additive Manufacturing

Scope of the Symposium

Industry 4.0 is appointed by government and industry leaders as a new industrial revolution, which is based on the integration of intelligent production processes and advanced information technologies. Additive manufacturing (AM) or 3D printing is an important tool towards its implementation. It allows increasing flexibility, sustainability and automation in order to promote this integration. AM processes build parts layer by layer and may use different heating systems (laser, resistive heating, electron beam, etc.) and different raw materials (powder, wires, filaments, laminates, liquids, etc.). There is a crescent interest in the development of new materials to be used in these processes in order to satisfy their requirements and expand the AM application range. The specifics of each process make necessary the use of materials with adequate characteristics in order to produce products with superior properties for high performance applications. AM has not only fastened the development of new manufacturing solutions, but also driven a renewed interest in existing architectures in materials science and novel designs. The present symposium aims to allow participants to present and share experiences, explore new developments and discuss AM topics with researchers from different institutions around the world. It will cover areas of development, processing and characterization of materials for AM, materials selection, final properties and applications and also post-processing and testing of AM products. Perspectives on the future directions on 3D printing on materials science will also be discussed.

Abstracts will be solicited in (but not limited to) the following areas

- *Polymers, metals, ceramics and composites for additive manufacturing*
- *Processing and characterization of materials for additive manufacturing*
- *Post-processing of additive manufacturing products*
- *Testing of additive manufacturing products*
- *Development of hydrogels and bioinks for additive manufacturing*
- *Cell laden materials for 3D printing*
- *New 3D printing and additive manufacturing technologies*

Tentative list of invited speakers (To be confirmed)

Simon Pauly (*IFW-Dresden and University of Applied Sciences Aschaffenburg/Alemanha*) **Carlos Henrique Ahrens** (*Universidade Federal de Santa Catarina/Brazil*) **Luiz Antonio Pessan** (*Department of Materials Engineering - Federal University of So Carlos*) **Jorge Vicente Lopes da Silva** (*Centro de Tecnologia da Informao Renato Archer - Diviso de Tecnologias Tridimensionais/Brazil*) **Prashanth Konda Gokuldoss** (*Erich Schmidt Institute/Austria and Tallin UT/Estonia*) .

Symposium Organizers

Piter Gargarella (*Department of Materials Engineering - Federal University of So Carlos/Brazil*) **Lidiane Cristina Costa** (*Department of Materials Engineering - Federal University of So Carlos/Brazil*) **Murilo C. Crovace** (*Department of Materials Engineering - Federal University of So Carlos/Brazil*) **Marcos Akira d'vila** (*Universidade Estadual de Campinas - UNICAMP/Brazil*) **Edvani Curti Muniz** (*Universidade Estadual de Maring - UEM/Brazil*) **Guilherme Mariz de Oliveira Barra** (*Universidade Federal de Santa Catarina - UFSC/Brazil*) **Varlei Rodrigues** (*Universidade Estadual de Campinas - UNICAMP/Brazil*) .