

Symposium P: Joining Technology-adhesion Research and Development

Scope of the symposium

This symposium aims at offering a survey over research, development and technological applications of joining processes and the characteristics of the resulting products. In this way, natural scientists and engineers interested in innovative materials, processes and multi-material joints are addressed.

Driven by the increasing market demands for purposefully designed and increasingly functional materials, many industries nowadays rely on distinct low-temperature joining technologies for lightweight devices. Accordingly, applications of adhesive bonding and related hybrid joining technologies are rapidly increasing, most notably in transport like aerospace, automotive and railway vehicles, but as well in construction and electronics industries and, more traditionally, in furniture and footwear production.

Thereupon, the symposium provides special emphasis on assessing adhesion, depicting processes of surface modification for load transmission and for tailoring interfaces, and interphases formed in contact with modern adhesives. Special attention will be laid to appropriate design and to the quality assurance of processes, in order to finally guarantee a lifelong durability of the joints.

The symposium is an opportunity for the community to discuss the present state of the field and the future trends for research, development and applications.

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

- Topics related to joining comprising low-temperature technologies as well as hybrid technologies
- Fundamental aspects of adhesion, interfaces and three dimensional interphases
- experiments and/or computer simulations permitting access to technologically important properties of surfaces, surfaces interactions, surface modifications, substrate and adhesive material development
- inline quality assurance of industrial material manufacturing processes
- test strategies with respect to material applications
- interdisciplinary approaches permitting a comprehensive multiscale design
- sustainable materials and processes, e.g. profiting from multifunctional materials or biomimetic design

Symposium Organizers

Welchy Leite Cavalcanti (IFAM-Bremen, Germany)

André Avelino Pasa (UFSC, Florianópolis, Brazil)

Invited speakers

Andreia Luisa da Rosa (Bremen University, Bremen, Germany)

Artur Böttcher (Karlsruhe Institute of Technology –KIT, Karlsruhe Germany)

Jan-Ole Joswig (Technical University Dresden, Dresden, Germany)

Horst-Erich Rikeit (Fraunhofer Institute for Manufacturing Technology and Advanced Materials in Bremen - IFAM, Bremen, Germany)

Klaus Rischka (Fraunhofer Institute for Manufacturing Technology and Advanced Materials in Bremen - IFAM, Bremen, Germany)

Suelen Barg (Imperial College London, London, UK)

Tentative list of members of Scientific Committee

Michael Noeske (Fraunhofer Institute for Manufacturing Technology and Advanced Materials in Bremen - IFAM, Bremen, Germany)

Welchy Leite Cavalcanti (Fraunhofer Institute for Manufacturing Technology and Advanced Materials in Bremen - IFAM, Bremen, Germany)

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