



University of Zagreb Faculty of Textile Technology & AMCA TTF

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# SCIENTIFIC LECTURE

entitled

## FROM FIBER TO FUNCTION - RESEARCH AT DTNW - PAST, PRESENT & FUTURE

by

**Klaus Opwis, PhD**

Deutsches Textilforschungszentrum Nord-West (DTNW), Krefeld, Germany

**on Wednesday, September 6<sup>th</sup> 2023 at 10:30 AM**

in lecture hall **A-103**, Prilaz baruna Filipovića 28a, Zagreb

### Abstract:

Functionalized fibers and fabrics are essential in the field of technical textiles used for aircrafts, cars, in construction industry, filter materials, or in medical products. Deutsches Textilforschungszentrum Nord-West gGmbH (DTNW) performs fundamental and applied research aiming at new and innovative technologies for future developments in technical and functional textiles. In this context, DTNW is a competent partner in the fields of functionality, finishing, ecology and testing. Our main research concerns the surface modification of fibrous materials by chemical and physical methods, such as photochemistry, supramolecular chemistry and nanotechnology. DTNW acts as mediator between basic research and industry through a close co-operation with companies along the whole textile chain, chemical industry, as well as manufacturers and users of products made from functional textiles. In addition, DTNW works in close contact with the Hochschule Niederrhein University of Applied Science and the University Duisburg-Essen, and is active in the education of a new generation of engineers, scientists and entrepreneurs. Here, Klaus Opwis will present some highlights of DTNW research within the last 30 years, e.g., the water-free dyeing of polyester fibers in supercritical CO<sub>2</sub>, the introduction of the sol-gel process in textile finishing, the development of textile-based solar cells or the development of noble metal adsorbing textiles. In addition, he will give an overview of ongoing and future research projects, namely, the immobilization of catalysts on fabrics, the use of new bio-based flame retardants for textile applications and new approaches in supercritical CO<sub>2</sub> technology.

### Biography:

Klaus Opwis, born in 1970 has PhD in chemistry. Since 1998 he is member of research staff and since 2007 Head of Working Group „Environmental Technology & Catalysis“ at Deutsches Textilforschungszentrum Nord-West (DTNW), Krefeld, Germany.



#### Key Activities:

- Textile-fixed Catalysts
- Adsorbing Polymers/Textiles for noble metals, resources and pollutants
- Flame Retardant Finishing
- Ionic Liquids in Textile Finishing
- Conductive Textiles.

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