Dr.-Ing. Helmut Schift - Professional Curriculum Vitae

Head of Polymer Nanotechnology Group,
Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut (PSI)
5232 Villigen PSI, Switzerland

Education

1985-1991	Study of Electrical Engineering at the University of Karlsruhe (TH), Germany
1990-1991	Diploma Work at the École Nationale Supérieure de Physique de Strasbourg (ENSPS), France; Degree obtained from Faculty of Electrical Engineering, University of Karlsruhe (TH) : Dipl.-Ing.
1991-1994	Applied Research at the Institute of Microtechnology (IMM) Mainz, Germany; Thesis examination, University of Karlsruhe, degree and title obtained : Dr.-Ing.

Employment and Professional Experience

1994 - today:	Research Staff Member, Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut (PSI), Switzerland
since July 2002:	Head (project leader) of Polymer Nanotechnology (INKA-PSI) Group
since 2001	Lecturer at the University of Applied Sciences and Arts (Fachhochschule) Nordwestschweiz, on "Micro- and Nanotechnology", and in various master courses
2011	Visiting professor (Velux grant) in the Optofluidics group in the Department of Micro- and Nanotechnology at the Danish Technical University (DTU) (from April-Aug. 2011)

Memberships in External Committees

- SPIE Advanced Lithographic (AL) conference, Program Committee Alternative Lithographic Technology
- Micro and Nanoengineering (MNE) conference, International Program Committee
- Nanoprint and Nanoimprint Technology (NNT) conference, International Steering Committee and Conference Co-chair in Barcelona, 2013; Program Chair in Braga, 2016
- Electron Ion Photon Beam and Nanotechnology (EIPBN), International Program Committee
- EULITHA Inc., Villigen PSI, Advisory Board

Major professional achievements

Over the last 22 years, H. Schift has gained a vast experience in polymer processing using molding techniques. As one of the pioneers in nanoimprint lithography (NIL), a next generation manufacturing technique for a range of future applications with down to sub-20 nm resolution, he has developed enabling techniques for the patterning of functional surfaces with topological and chemical surface contrast, and used these processes in different research and application fields. In particular, he has contributed to the development of the basic understanding of the rheology of thermoplastic thin films used as resists in thermal NIL. At PSI, NIL is used in a range of applications in the area of nano-electrodes, nano-sieves, photonic crystals, liquid-crystal displays, etc. The developments also comprise surface energy related topics such as antiadhesive coatings, chemical patterning of surfaces, hierarchical and hybrid structuring, 3D surface patterning and upscaling using fast imprint processes, roll-to-roll imprint and injection molding. The polymer nanotechnology group contributed via development of technology, tools, and processes, i.e. the full toolbox for replication processes needed for academic research and industrial applications. This **toolbox** is further enlarged within the framework of the Institute for Polymer Nanotechnology **INKA** (a "joint venture" between **PSI** and the University of Applied Sciences Nordwestschweiz **FHNW)** and via collaborations with industry and research partners on national and international level. H. Schift has supervised many scientific projects and participated in juries of several PhD theses. In the European FP7 NaPANIL project (2008-2012), H. Schift was sub-project leader with over 1000 person months. He is a co-author of 130 scientific papers, including reviews and book chapters, and editor of the NaPa Library of Processes (http://www.psi.ch/lmn/helmut-schift).