Prof. Dr.-Ing. Jens Gobrecht

Laboratory for Micro- and Nanotechnology, Paul Scherrer Institute, Villigen

Born: April 2nd, 1951, in Berlin (West), Germany. Citizenships: German, Swiss and Austrian

Education

1957 – 1970 Elementary school and Gymnasium in Berlin/Germany.

1970 – 1976 undergraduate and graduate study of physics at the Technical University of Berlin, Germany, degree: Dipl.-Ing.

1976 – 1979 PhD work at the „Fritz-Haber-Institut der Max-Planck-Gesellschaft". Doctor of Engineering (Dr.-Ing.) degree from Technical University Berlin in July 1979.

Professional employments

1973 – 1976 Tutor in experimental physics lab course for undergraduates at the TU Berlin

1976 – 1978 PhD scholarship from the "Max-Planck-Gesellschaft"

1979 research assistant at the Fritz Haber Inst. of the Max Planck Society in Berlin

1979 – 1981 post doctoral researcher at Solar Energy Research Institute, Golden, Colo. USA (today: NREL)

1981 – 1992 ABB Corporate Research, Baden, Switzerland. Various functions: Scientific project leader, group leader, department head and international program manager "power semiconductors".

1993 – June 2017: Paul Scherrer Institute (PSI), Villigen, Switzerland. Head of the "Laboratory for Micro- and Nanotechnology" (LMN). Since July 2017 scientific advisor to PSI/LMN (part time).

1999 – 2003 in addition lecturer at the ETH Zürich, dept. of mechanical engineering.

2004 – 2016: Professor at the Univ. of Applied Sciences Nordwestschweiz and head of the institute of polymer nanotechnology. This is in addition to the tasks at the PSI.

Major professional achievements

PhD and post-doc: Pioneering work on electrochemical solar cells. Kinetic and thermodynamic stability problems clarified, first cells with ~10% efficiency realized, first heterostructure tandem cells realized. Several refereed publications, one having been featured by "New Scientist".

Industrial career: Novel metal-ceramic package for high power-dissipating electronic hybrid circuits developed and transferred to production in Germany. This has developed a successful business. Initiated and led the development of first high-voltage insulated gate bipolar transistors (IGBT) at ABB. IGBT-based products are now the main and growing part of the business of ABB Semiconductors AG, a leading power semiconductor company. Initiated and supervised the development of the "integrated gate controlled thyristor" (IGCT) technology with extremely low inductance gate drive. Transfer of this development to "ABB Industrie AG" where this technology meanwhile has generated business of hundreds of millions CHF.

Academic career: Built up and led the "*laboratory for micro- and nanotechnology*" at the PSI from scratch. The "LMN" today is a research group of about 50 scientists and technicians, including about 15 PhD students. Research areas: molecular nanotechnology (combining SPM and synchrotron X-ray surface analysis), strained Ge-devices, quantum technologies, X-ray optics, SiC and CdTe detectors and micro- and nanofabrication technologies with specialization on nanolithography (EUV and e-beam) and polymer replication processes. LMN holds world records in resolution in X-ray microscopy and extreme-UV-interference lithography. From 2005 on J. Gobrecht has been building up the "institute of polymer nanotechnology", a joint research unit between PSI and the Univ. of Appl. Sciences of Northwestern Switzerland. July 2016 he retired from this task.

J. Gobrecht is author or co-author of more than 130 publications in refereed scientific journals, inventor or co-inventor on 26 patents. He is main or co-applicant on over thirty successful research proposals to various national and international funding agencies such as SNF, CTI, SNI, ETH-priority programs, EU etc. and also initiated projects funded directly by industry. J. Gobrecht serves regularly in national and international review committees. He acts currently as "past-president" of the Swiss Micro- and Nanotechnology Network.

In 2007 J. Gobrecht co-founded the company EULITHA AG where he acts as board member. This company commercializes nanolithography equipment and technologies and related products developed at PSI. In 2016 he helped founding the PSI startup-company InterAx Biotech AG, where he is a member of the board.

J. Gobrecht is married to Dr. Barbara Gobrecht. They have three grown up children.