

# Prof. Paolo Lugli

Date of Birth:

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**Affiliation** Free University of Bozen-Bolzano  
Faculty of Science and Technology

## Education

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- 1985 **PhD in Electrical Engineering (Colorado State University, USA)**  
Thesis Title: *'Electron-electron Interaction in Semiconductors'*
  - 1980-1981 **MSc in Electrical Engineering, Colorado State University (USA)**
  - 1975-1979 **Laurea in Physics, University of Modena (Italy)**
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## Career

- 2017 **Rector**  
Free University of Bozen-Bolzano
  - 2014 to 2016 **Dean**  
TUM Department of Electrical and Computer Engineering
  - 2013 to 2014 **Vice Dean**  
TUM Department of Electrical and Computer Engineering
  - 2002 to date **Full Professor Chair of Nanoelectronics**  
TUM Department of Electrical and Computer Engineering
  - 1993-2002 **Full Professor for Optoelectronics**  
Faculty of Engineering of the University of Rome „Tor Vergata“
  - 1991-1993 **Associate Professor for Optoelectronics**  
Faculty of Engineering of the University of Rome „Tor Vergata“
  - 1980-1983 **Graduate Research Assistant,**  
Dept. of Electrical Eng., Colorado State University, USA
  - 1984 **Faculty Research Associate,**  
Center for Solid State Electronics Research, Arizona State University, Arizona, USA
  - 1984-1988 **Research Associate, („Ricercatore Universitario“)**  
Physics Dept., University of Modena, Italy
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## Selected honors and awards

- 2015-2016 Member of the Supervisory Board of the TUM Integrative Center for Translational Oncology
- 2015-2016 Member of the Extended Board of the TUM Munich School of Bioengineering
- 2015 to date Member of the Technical Committee for Research and Innovation of the Provincia Autonoma Trento, Italy
- 2015-2016 Member of the Evaluation Committee of the Italian Institute of Technology
- 2013 to date Adjunct Professor at Beijing University of Chemical Technology, Beijing, China
- 2009-2013 Member of the Executive Board of the Cluster of Excellence “Nanosystem Initiative Munich”
- 2006 to date Member of the Board of NanoTUM, the TUM Institute for Nanoscience and Nanotechnology
- 2003 Cofounder of RAPTECH s.r.l. and Xenergia s.r.l., two start-up companies of the University of Rome „Tor Vergata
- 2002-2010 Board member of the Office of Technological Transfer at the National Institute for Astrophysics, Italy
- 2000-2002 Director of the CNR National Group for Solid State Matter, Italy
- 1999-2002 President of the Scientific Council of MDM (Materials and Devices for Microelectronics) Laboratory, a joint venture of STMicroelectronics and Istituto Nazionale di Fisica della Materia
- 1998-1999 DAAD *Guest Professor* at TUM
- 1992-1997 Chairman of the Semiconductor Section of the Italian National Research Council (CNR)
- 1991-1992 *Fellow* of the Alexander von Humboldt-Stiftung at TUM

## Memberships

2011 to date	IEEE Fellow
2011 to date	Member of ACATECH (National Academy of Science and Engineering, Germany)
2011 to date	Coordinator of the Nanoelectronics Panel of the IEEE Nanotechnology Council
2010 to date	Member of the Technical Committee on "RF Nanotechnology", IEEE MTT Society
2007 to date	Member of VDE (Association of German Electrical Engineers)
2007 to date	Chairman of the Arbeitskreis "Mikroelektronik" of VDE-Süd Bayern

## Selected Publications

1. C. Jacoboni and P. Lugli, "*The Monte Carlo Method for Semiconductor Device Simulation*" Springer Verlag, Wien 1989
2. V. Fiorentini, F. Bernardini, F. Della Sala, A. Di Carlo, P. Lugli, *Effects of macroscopic polarization in III-V nitride multiple quantum wells*, Phys. Rev. B 60, 8849 (1999)
3. D. Baierl, L. Panzeri, M. Schmidt, D. Stoppa, G. Dalla Betta, G. Scarpa, P. Lugli, *A hybrid CMOS-imager with a solution-processable polymer as photoactive layer*, Nature Communications 3, 1175 (2012)
4. Abdellah, A. Abdelhalim, F. Loghin, P. Kohler, Z. Ahmad, G. Scarpa, P. Lugli, *Flexible Carbon Nanotube Based Gas Sensors Fabricated by Large-Scale Spray Deposition*, IEEE Sensors Journal 13, 4014 (2013)
5. F. Arca, M. Loch, P. Lugli, *Enhancing Efficiency of Organic Bulk heterojunction Solar Cells by Using 1,8-Diiodooctane as Processing Additive*, IEEE Journal of Photovoltaics 4, 1560 (2014)

## Publication facts and statistics

Number of peer reviewed publications

- 2010-2014 167
- Total 560

Number of Patents

9

Citations of peer reviewed publications

- 2010-2014 557
- Total 6128

**Complete H-index (Google Scholars)**

**49**

## External and Internal Funding (2010-2014)

Funding body	Average annual amount in €	Total amount in €
EU	268.801 €	1.344.006 €
DFG	412.698 €	2.063.488 €
Governmental Funding	0	0
Private Funding	75.783 €	378.916 €
<b>Total Funding</b>	<b>757.282 €</b>	<b>3.786.410 €</b>

## Research Focus

- Printed electronics: solution-based technologies for the fabrication of organic devices, such as sensors, transistors, and solar-cells
- Nanofabrication: nanoimprinting and nanotransfer printing for electronic and optoelectronic devices
- Computational nanoelectronics: multiscale simulation of nanostructures, devices and circuits

My group explores a wide range of topics in the fields of nanotechnology and printed electronics. At an experimental level, the research effort deals with the fabrication and characterization of organic devices on a variety of substrates, including flexible ones. This highly interdisciplinary activity involves (i) the development of innovative coating techniques for solution-based materials, (ii) the implementation of alternative lithographic methods such as nanoimprinting and nanotransfer for patterning materials in the nanoscale range, (iii) the fabrication of organic devices such as thin-film transistors, sensors, solar cells and (iv) the characterization of materials and devices at the nanoscale. The experimental activities are supported by extensive theoretical work, which includes (i) the modeling of electronic, electrical and optical and microwave properties of nanostructures, (ii) the multiscale simulation of quantum structures and organic devices, and (iii) the design of circuits and systems based on nanodevices. The research has been funded by various national and international sources including the US National Science Foundation, the European Union, the German Science Foundation, the German Federal Ministry for Education and Research, the Bavarian Ministry of Education, Science and the Arts, the TUM International Graduate School of Science and Engineering and the TUM Institute of Advanced Study.

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## Teaching and training activities

Since 1989 I gave lectures, seminars and laboratories first in Rome and, since 2002, in Munich, either in Italian, German or English. At TUM I am teaching in the Bachelor and Master Programs of Electrical Engineering and Information Technology, as well as in the international Masters “Communication Engineering” and “Power Engineering”. I am coordinating the joint MSc program with Nanyang Technological University of Singapore in “Green Electronics” and I am involved in a second one in “Integrated Circuit Design”.

I have made sustained contributions to engineering education as a university faculty for over 30 years, having supervised more than 300 Bachelor, Master and Diplom/Laurea students and more than 100 doctoral candidates, many of whom now hold significant positions in academic, research and industrial institutions. Among others, M. Saraniti, A. Di Carlo and A. Neviani are full professors at Arizona State University, and at the University of Rome Tor Vergata and at the University of Padova, respectively, M. Berliocchi and A. Bolognesi have created the spin-off Raptech in Rome, S. Harrer is senior researcher at the newly established IBM Melbourne Laboratory. I am currently supervising more than 10 PhD students.