Pieter De Beule

Group Leader Applied Nano-Optics team @ International Iberian Nanotechnology Laboratory
Avenida Mestre José Veiga s/n, 4715-330, Braga, Portugal (E-mail & Website)

ABOUT

Date of birth: 15th July 1980
Nationality: Belgian
Language skills:
Dutch (native), English (proficient)
French, German, Portuguese (advanced)
Spanish, Polish (basic)
Professional aim:
development of new optics inspired technology for the nanosciences

EMPLOYMENT

Staff Researcher (2013-Present)
Research Fellow (2011-2013)
International Iberian Nanotechnology Laboratory (INL), Braga, Portugal

Research Fellow (2009 – 2010)
INL, Braga, Portugal
Secondment to
Laboratory of Cellular Dynamics
Max-Planck Institute for Biophysical Chemistry, Göttingen, Germany

Senior Physicist (2007 – 2008)
Chemical Research Group
Smiths Detection, Watford, UK

Research Associate (2007)
Physics Department

EDUCATION

PhD in Physics (2003 – 2006)
Photonics Group
Imperial College London, UK

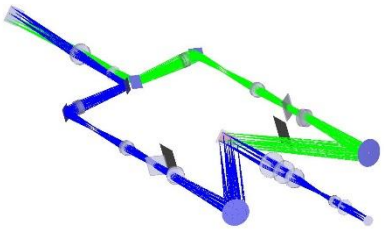
MSc in Engineering Physics (2000 – 2003)
University of Ghent, Belgium &
Eidgenössische Technische Hochschule Zürich, Switzerland

BSc in Engineering (1998 – 2000)
University of Ghent, Belgium

SKILLS

Scientific instrumentation development
Scientific project management
Multidisciplinary Research
Analogue electronics prototyping
Mechanical engineering prototyping

Optical Ray Tracing (ZEMAX)



Software development for instrumentation control and data analysis

KNOWLEDGE

Expert
- Atomic Force Microscopy
- Fluorescence instrumentation
- Optical microscopy
- Polarimetry
- Gas sensing

Basic
- X-ray Photon Scattering
- Gas chromatography

First Aid

Laser, chemical and biological safety

Optical microscopy suite management

MEMBERSHIPS

Biophysical Society (BPS)
Optical Society of America (OSA)
Society of Photo-Optical Instrumentation Engineers (SPIE)

REFERNCES

Prof. P.M.W. French
Imperial College London, UK
Dr. Donna J. Arndt-Jovin
Max-Planck Institute for Biophysical Chemistry, Germany

Further references are available upon request

RESEARCH PROFILE

PLEASE CONSULT GOOGLE SCHOLAR OR ORCID FOR A COMPLETE LIST OF SCIENTIFIC DISSEMINATIONS

Group leader

- **Institute:** International Iberian Nanotechnology Laboratory (INL), Braga, Portugal

Noteworthy achievements:

JOURNAL ARTICLE
Simultaneous differential spinning disk fluorescence optical sectioning microscopy and nanomechanical mapping atomic force microscopy
Miranda A., Martins M. and De Beule P. A. A.
Review of Scientific Instruments, **87**(4): 043701 (2015)

JOURNAL ARTICLE
Simultaneous differential spinning disk fluorescence optical sectioning microscopy and nanomechanical mapping atomic force microscopy
Miranda A., Martins M. and De Beule P. A. A.
Review of Scientific Instruments, **86**(9): 093705 (2015)

JOURNAL ARTICLE
Surface scattering of core–shell particles with anisotropic shell
De Beule P. A. A.
Journal of the Optical Society of America A, **31**(1): 162 (2014)

Post-doctoral Researcher

- **Institute:** International Iberian Nanotechnology Laboratory (INL), Braga, Portugal
  Topic: Optical properties of lipids & Gas sensing of volatile organic compounds
  Supervisor: Prof. Paulo J. P. Freitas (INL Scientific Director)

Noteworthy achievements:

PATENT APPLICATION
Transmission window for a vacuum ultraviolet gas discharge lamp
De Beule P.A.A.
International Iberian Nanotechnology Laboratory
European Patent Office Application (2013)

- **Institute:** Max Planck Institute for Biophysical Chemistry MPIbpc, Göttingen, Germany
  Topic: Development of a novel programmable array microscope for confocal fluorescence microscopy
  Supervisors: Dr. Thomas M. Jovin & Dr. Donna J. Arndt-Jovin (Laboratory of Cellular Dynamics)

Noteworthy achievements:

SPIE PHOTONICS WEST CONFERENCE PROCEEDINGS
Generation-3 programmable array microscope (PAM) with digital micro-mirror device (DMD)
De Beule P.A.A., de Vries A.H.B., Arndt-Jovin D. and Jovin T.M.
Proceedings Vol. 7932 (February 14, 2011)

Industrial R&D Researcher

- **Company:** Smiths Detection Ltd, Watford, United Kingdom
  Job title: Senior Phsycist
  Responsibilities: Consolidation of new gas detection technology for military, contraband surveillance and industrial safety
  Manager: Dr. Alistair Clark (R&D team manager for chemical gas sensing)

Noteworthy achievements:

GAS SENSOR PRODUCT VALIDATION
Experimental validation of prototype instrumentation with Chemical Warfare Agents (CWA) at the Defence and Science and Technology Laboratory (DSTL) of the Ministry of Defence (MoD), Porton Down, UK

Education

- **Type:** Doctor of Philosophy
  Institution: Imperial College London, London, United Kingdom
  Department: Physics
  Topic: Development of Multidimensional Fluorescence Instrumentation for Biomedical Applications
  Supervisor: Prof. P.M.W. French (head photonics group) and Prof. M.A.A. Neil (lecturer optical communications)

  Noteworthy achievements:

  JOURNAL ARTICLE
  Rapid Hyperspectral Fluorescence Lifetime Imaging
  De Beule P.A.A., Owen D.M., Manning H.B., Talbot C.B., Requejo-Isidro J., Dunsby C., McGinty J., Benninger R.K.P., Elson D.S., Munro I., Lever M.J., Anand P., Neil M.A.A. and French P.M.W.
  Microscopy Research and Technique, **70**: 481 – 484 (2007)

  JOURNAL ARTICLE
  A hyperspectral *fluorescence lifetime probe for skin cancer diagnosis*
  De Beule P.A.A., Dunsby C., Galletly N.P., Stamp G.W., Chu A., Anand U., Anand P., Benham C.D., Naylor A. and French P.M.W.
  Review of Scientific Instruments, **78:** 123101 (2007)

  SPIE PHOTONICS WEST CONFERENCE PROCEEDINGS
  A novel hyperspectral lifetime probe for autofluorescence
  De Beule P., Dunsby C., Owen D., et al.
  Proceedings Vol. 6433 (February 14, 2007)

  WORKSHOP ATTENDANCE AWARD
  Functional Imaging in Cell and Developmental Biology
  European Molecular Biology Organization (EMBO) and National Centre for Biological Sciences (NCBS, Bangalore, India)
  Banglore, India (2004)

- **Type:** Master of Science in Engineering Physics
  Institution: UGent, Ghent, Belgium
  Department: Engineering and Architecture
  Thesis topic: Measurement of the Ion Temperature in the Scrape-off Layer of a Tokamak with a Tunnel Probe
  Thesis supervised by: Prof. Guido Van Oost (department of applied physics)
  Noteworthy achievements:

  ERASMUS EXCHANGE PROGRAMME
  Study grant from Swiss Federal Government
  Exchange student at the physics department of the Eidgenössische Technisch Hochschule Zürich (ETHZ)
  Academic year 2001-2002

  MASTER THESIS
  Awarded score (18/20) ranked top 50 university wide for academic year 2002-2003

  JOURNAL ARTICLE (master thesis project)
  Measurements of the Parallel and Perpendicular Ion Temperatures by Means of an Ion-sensitive Segmented Tunnel Probe
  Balan P., Schrittwieser R., Adámek J., Barina O., De Beule P., Duran I, Gunn J.P., Hrach R, Hron M, Ionita C., Martines E, Pánek R., Stöckel J., Van Den Berge G., Van Oost G., Van Rompuy T. and Vicher M.
  Contrib. Plasma Phys. **44**(7-8): 683 – 688 (2004)

  SUMMER SCHOOL ATTENDANCE
  Carolus Magnus Summer School on Plasma and Fusion Energy Physics, Brussels, Belgium (2003)