

Faculty Profile

*Joint Research and Education Programme “Palestinian-German Science Bridge PGSB”
Forschungszentrum Jülich GmbH & Palestine Academy for Science and Technology*

Personal Details

Title*	Degree	First name*	Surname*
Mr.	Assoc. Prof. Dr.	Othman	Zalloum

Home university and faculty/department*	E-mail*
Palestine Polytechnic University	ozalloum@ppu.edu

Degrees with date, topics and granting institutions*

<input type="checkbox"/> BSc	Date: 1990	Topic: Engineering (Mechanical)	Institution, country: The National University of Ireland, University College Dublin, Dublin, Ireland.
<input type="checkbox"/> MSc	Date: 1991	Topic: M.Sc. in Physics	Institution, country: The National University of Ireland, University College Dublin, Dublin, Ireland.
<input type="checkbox"/> PhD	Date: 1994	Topic: Ph.D. in Physics	Institution, country: The National University of Ireland, University College Dublin, Dublin, Ireland.
<input type="checkbox"/> other	Date: 1986	Topic: Electronics Engineering	Institution, country: Waterford Institute of Technology, Ireland.

Current position and teaching activities at home university*

<p>Current position: Associate Professor of Physics Teaching Activities at home university: Physics of Medical Imaging, Radiation Physics, Radiation Protection and Safety, Particle and Applied Nuclear Physics, Modern Physics, Optics, Physics of Sensors, Mathematical Physics, General Physics Series, General Physics Laboratories, Advanced Physics Laboratories, Graduation Seminars.</p>

Research/collaboration experience abroad

<p>1) University College Dublin, Dublin, Ireland. 07/1990-10-1994: (MSc and PhD Research) Remote Optical Sensing, Instrumentation for the characterization of the optical properties of marine waters, and modelling and simulation studies related to scattering and absorption characteristics of axially oriented, polydisperse spherical and nonspherical particles with small to large size parameters. Special interest applies to radiation transport, radiative transfer calculations, light-matter interaction, and the angular distribution of light scattering in the form of laser diffractometry.</p> <p>2) The University of Tennessee, Space Institute, Goethert Parkway, Tullahoma, TN, USA, 05/2008 – 03/2010. Development of an amplified femtosecond laser system for material micro/nanostructuring with an integrated Raman microscope and Femtosecond micromachining of HPHT single-crystal diamond with direct laser writing using tight focusing.</p>

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3) McMaster University Faculty of Engineering Physics, Hamilton, Ontario, Canada, 03/2004 - 12/2007.

Involved in the development of new electro-optical characterization facilities and in the advanced characterization of new silicon-based semiconductor nanoclusters with or without rare-earth doping including Synchrotron studies to investigate the luminescence mechanisms in rare earth doped, silicon-based structures. This research has potential applications for use in a variety of applications including solar cells and solid state lighting. Semiconductor nanoclusters can be utilized to produce novel LED's and optical devices.

4) The Johns Hopkins University, School of Medicine, The Wilmer Ophthalmological Institute, The John Hopkins Hospital, USA. January 13, 2003 – December 31, 2003.

I have joined Professor David Guyton's group for a one-year Research Fellowship in Ophthalmic Instrumentation, and I was soon promoted to Research Associate in Ophthalmology (faculty rank). The primary projects that I have contributed to were applications in pediatric vision screening, remote control via visual fixation, monitoring of eye alignment, and eye tracking. I conducted a comprehensive PSpice simulation of a complete and sophisticated electronic control system for retinal birefringence scanning devices. In my work, I have modeled the electronic signal processing unit used to measure changes in retro-reflected, polarized, near-infrared light to detect the projection into space of the uniquely oriented nerve fibers surrounding the fovea (the area of the retina used for fixation). I have also contributed significantly to the optical and mechanical designs of a new no-moving-parts eye fixation monitor. The advantages of this new device are that it:(i) requires no

5) International Atomic Energy Agency (IAEA) Fellowship in Medical Physics, Queensland University of Technology, School of Physical and Chemical Sciences, Brisbane, Queensland, Australia, 15/07/2013 – 17/09/2013. The fellowship was related to the IAEA's TC project entitled: Supporting Education and Training in Radiation Protection and Medical Physics (Oracle Project Number:3060293) (PAL9007). The fellowship placement was coordinated by The Australian Nuclear Science and Technology Organisation (ANSTO), and was intended to provide an in depth exposure to a research and academic environment as well as the skills and experience to effectively teach in a medical physics program. Focus was on Radiotherapy Physics, Medical Imaging Physics, and Health and Occupational Physics-Radiation Protection and Safety.

Foreign scholarships (e.g. DAAD, ...; also from other nations)

1) IAEA Fellowship in Medical Physics, Queensland University of Technology (QUT), School of Physical and Chemical Sciences, Brisbane, Queensland, Australia, 2013.

2) Canon Scholarship Award and Certificate of Distinction from Cantec in Ireland in Association with the Dublin Institute of Technology for outstanding project work at University College, Dublin. 1990

3) Full scholarship for Masters Degree research study at University College Dublin.

4) Full scholarship for Doctor of Philosophy research study at University College Dublin.

Research fields/topics of interest*

Topics include:

1) Atomspheric Physics/ Energy and Climate Research: Simulation studies of light-matter interaction, scattering of light by small particles and instrument development.

2) Medical imaging physics: Development, experimental validation and clinical implementation of novel imaging methods.

3) Energy and Environment (materials research, and photovoltaics)

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Collaboration interest in Jülich

Relevant institute/group in Jülich (starting from http://www.fz-juelich.de/portal/EN/Research/_node.html or http://www.fz-juelich.de/portal/EN/AboutUs/organizational_structure/Institutes/_node.html if you have no personal contacts yet)*

1) Dr. Martina Krämer
 Forschungszentrum Jülich
 Institut für Energie- und Klimaforschung
 IEK-7: Stratosphäre
 Arbeitsgruppe `Wasserdampf+Wolken`
 52425 Jülich, Deutschland
 email: m.kraemer@fz-juelich.de
 Telefon: +49 (0) 2461 - 613238
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2) Institute of Neurosciences and Medicine (INM): Medical Imaging Physics (INM-4)
 Prof. Dr. N. J. Shah
 Institute of Neuroscience and Medicine (INM-4)
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3) Prof. Dr. Uwe Rau
 Director
 Head of the institute
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4) Department: Materials and Solar Cells
 Department Head:
 Dr. Friedhelm Finger
 Phone: +49 2461 61-2614
 email: f.finger@fz-juelich.de

Number and background of potential candidates for thesis projects

1-2 candidates. Background: Physics.

Date*	Signature*
22 October 2016	Associate Prof. Dr. Othman Zalloum

* required field

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