CURRICULUM VITAE of Jovana Petrovic, PhD, Dipl.-Ing.

EDUCATION

Ph.D. in Optical Physics and Photonics, 2002 - 2006
Aston Institute of Photonic Technologies, Aston University, UK
Thesis: Modelling of Long Period Gratings in PCFs Inscribed by an Electric Arc and Gratings in SMF Inscribed by Femtosecond Laser Pulses
Training: ultrafast lasers, direct laser writing, fibre-grating sensors, numerical modelling of nonlinear laser-matter interactions, numerical modelling and design of photonic sensors

Dipl. in Optoelectronics and Laser Engineering, 1997-2002
School of Electronic Engineering, University of Belgrade, Serbia
Thesis: Quantum Cryptography
Training: laser engineering, photonics, electronics, quantum mechanics, programming (C, MATLAB, Mathematica)

FURTHER QUALIFICATIONS

Postgraduate Diploma in Learning and Teaching in Higher Education, 2008-2009
Institute of Learning, University of Oxford, UK
Thesis: Supervision of Doctoral Students - the Role of a Postdoctoral Researcher
Training: assessment and improvement of teaching, course design and alignment with practice, motivation and formative assessment of students, modes of instruction

Laser Safety Officer, 2019-2024
Laser Akademie, Laser Zentrum Hannover, Germany

RESEARCH

Laser Scientist – Nov 2018 - present
Centre for Free-Electron Laser Science, Deutsches Elektronen-Synchroton DESY, Hamburg, Germany
Responsibilities:

- Development of optical methods for ultraprecise ultrafast imaging of molecules
- Laboratory management: equipment maintenance, upgrade, scheduling, safety
- Project proposal preparation (DFG, Horizon2020)
- Research at large X-ray facilities (beam time proposals and execution)

Research Professor – June 2019 – present
Research Associate Professor – Feb 2013 - June 2019
Research Assistant Professor – Aug 2011- Jan 2013
Vinca Institute of Nuclear Sciences, Belgrade, Serbia
Responsibilities:

- Research project management, team and consortia leadership
- Establishment of new femtosecond-laser and fibre-optic laboratories
- Research in high-precision photonic and cold-atom sensors
- Modelling and numerical design of innovative integrated and in-fibre photonic devices
- Development and clinical testing of fibre-optic sensors for medicine (up to TRL 7)
- Collaboration with industry and stakeholders
- Student supervision (3 PhD and 2 MSc students)

Postdoctoral Researcher - Feb 2010 - July 2011
European Laboratory for Nonlinear Spectroscopy (LENS), Florence, Italy
Responsibilities:

- Development of high-precision interferometric sensors with atom chips
- Laser and microwave manipulation of ultra-cold atoms on chip
- Numerical modelling of (non)linear interaction of atoms with external fields
- Technical supervision of postgraduate students (2 PhDs)
- Project proposal preparation

Postdoctoral Research Associate - Oct 2007 - Nov 2009
Department of Physics, University of Oxford, UK
Responsibilities:

- Lead scientist on an EPSRC project
- Ultrafast photoassociation and coherent control of cold atoms
- Construction and maintenance of ultrafast lasers and parametric amplifiers
- Laboratory manager: equipment purchasing, upgrade, scheduling, safety
- Technical supervision of postgraduate students (4 PhD and 1 MSc)
- Project proposal preparation

Postdoctoral Research Fellow - Oct 2006 - Sept 2007
Aston Institute of Photonic Technologies, Aston University, Birmingham, UK
Responsibilities:

- Numerical modelling of laser-written fibre-optic sensors
- Collaboration with West Midlands photonic industry

TEACHING:

University courses:

- **Doctoral School of Biophotonics, University of Belgrade, 2015 – present**
  Course: Integrated and fibre-optic biosensors, optional, ECTS 9, 2 h/week
- **Doctoral Degree in Photonics and Lasers, Department of Physics, University of Belgrade, 2016 – present**
  Course: Photonic sensors, optional, ECTS 15, 3 h/week

Student supervision:

- 3 PhD students, University of Belgrade
- 2 Master students, University of Belgrade
- Technical supervision of 3 DPhil and 1 Master student, University of Oxford
- 2 Doctoral theses, University of Belgrade

THE MOST IMPORTANT RESEARCH CONTRIBUTIONS:

- A new optomagnetic material with negative permeability in the visible (Nature, 2005)
- Numerical model of a long-period grating in photonic crystal fibre (J. Lightwave Technol. 2007)
- Multi-state interferometer on atom chip(New J. Phys, 2013)
- Novel integrated optical couplers without bending (Opt. Lett, 2015)
- Optical fibre-grating trigger for non-invasive mechanical ventilation (Biomed. Opt. Express 2014, Phys. Meas. 2018)

CONSULTANCY and INNOVATION

Expert evaluator and monitor of FET-Open projects, July 2012 - present
Research Executive Agency, European Commission, Brussels, Belgium
Responsibilities:

- proposal evaluation,
- participation in proposal-ranking panels,
- assessment of project progress,
- recommendations on project execution and financing

Expert evaluator of MSCA projects, October 2018 - present
Research Executive Agency, European Commission, Brussels, Belgium
Responsibilities:

- proposal evaluation
- participation in proposal-ranking panels

Chief Technology Officer – Jan 2012 - present
Diasens, Ltd., Serbia (spin-off from Vinca Institute and Aston Unviersity)
Responsibilities:

- technical-team leadership
- development of fibre-optic sensors for applications in medicine
- clinical trials
- communication with potential investors & pitching

Technical consultant – Oct 2015 - May 2016
HeartBeam, Inc., US
Responsibilities:

- technical-team leadership
- delivery of the beta-version of a new ECG signal processing and analysis software
- delivery of a decision making software integrating ECG results with the questionnaires replacing interrogation by a doctor
- day-to-day communication with medical doctors, engineers, researchers and programmers

Entrepreneur Consultant – Oct 2015 – Feb 2017
Physics Pro, Belgrade
Responsibilities:

- management of the enterprise
- technical consultancy services to high-tech start-ups working with optical and medical technology

Patents
Patent application number PCT/RS2013/000016, WO 2014035272 A1
B. Bojovic, M. Vukcevic, J. Petrovic, M. Petrovic, I. Ilic, A. Danicic, T. Allsop and Lj. Hadzievski, Apparatus and method for monitoring respiration volumes and synchronization of triggering in mechanical ventilation by measuring the local curvature of the torso surface

Reviewer for 14 scientific journals (Nature Group, OSA, IoP, Elsevier):
Scientific Reports, Optics Express, New J. Physics, J. Optics, Optics Communications, J. Modern Optics, J. Physics D, Photonics Technology Letters, Sensors, J. Micromechanical Microengineering, Physica Scripta, Optical and Quantum Electronics, Journal of Physics: Photonics, Review of Scientific Instruments

THE THIRD-PARTY-FUNDED PROJECTS ATTRACTED BETWEEN 2011 and 2019 as the PRINCIPLE INVESTIGATOR (PI)

Title: Photonics of micro- and nano-structured materials
Duration: Feb 2011 – Jan 2015
Participants: Vinca Institute of Nuclear Sciences, Serbia
School of Medicine, University of Belgrade, Serbia
Project Coordinator: Ljupco Hadzievski
PI for experimental WPs: Jovana Petrovic
Founding body: Ministry of Education, Science and Technological Development of Serbia
Budget: 1,850,000.00 EUR (450,000.00 for equipment)

Title: Mikro-und Nanostrukturierung mittels Laserstrahlen fur biomedizinische Sensorik – JIVE
Duration: Aug 2017 – July 2019
Participants: University of Rostock, Germany
Vinca Institute of Nuclear Sciences, Belgrade, Serbia
National Institute for Laser, Plasma and Radiation Physics, Bucharest, Romania
Extreme, Ltd., Ljubljana, Slovenia
Project Coordinator: Alexander Szameit
PI for Serbia: Jovana Petrovic
Founding body: BMBF, Ideenwettbewerb Donauraum 2015
Budget: 78,000.00 EUR

Title: Development and Regulation of the University of Belgrade Laser-Laboratory Infrastructure for Education and Research, Grant. No. 1206.004-16
Duration: Jan 2017 – Dec 2018
Participants: Laboratory for Nonlinear Spectroscopy (LENS), Florence, Italy
University of Belgrade, Serbia
National Institute for Laser, Plasma and Radiation Physics, Bucharest, Romania
Project coordinator: Francesco Cataliotti
PI for Serbia: Jovana Petrovic
Funding body: Central European Initiative (CEI), Know-How Exchange Programme (KEP - Italy)
Budget: 40,000.00 EUR

Title: Multi-State Atom Interferometers, Grant. No. 680-00-566/2013-09/10
Duration: 2013-2015
Participants: Vinca Institute of Nuclear Sciences, Belgrade, Serbia
Laboratory for Nonlinear Spectroscopy (LENS), Florence, Italy
PI for Serbia: Jovana Petrovic
PI for Italy: Francesco Cataliotti
Funding bodies: Ministry of Education, Science and Technological Development, Serbia, Ministry of Foreign Affairs, Italy
Budget: 2000 EUR

Title: Advances in Optofluidics: Integration of Optical Control and Photonics with Microfluidics, COST Action MP 1205
Duration: 2013 - 2016
Participants: 25 European countries
Coordinator: Garbiela Cipparrone
PI for Serbia: Jovana Petrovic

AWARDS AND PRIZES

- Stephenson Distinguished Visitor Programme, DESY, Hamburg, Germany, 2016
- L'Oreal For Women in Science Scholarship, Serbia, 2011
- British Council Researcher Exchange Programme Grant, 2009
- Aston University Colours for Exceptional Committee Service, 2006
- Overseas Research Student Award, UK Government, 2003 - 2005
- Scholarship for gifted students, City Council of Krusevac, Serbia, 1996 - 2003
- Norwegian Embassy Award to the best student in the class, Serbia, 2002
- The Best Student Award, School of Physical Electronics, Univ. of Belgrade, 2002

OUTREACH (selection)

- Vinca Outreach activities 2013-2016
    - Vinca Open Door - for general public
    - Vinca Classrooms - for secondary school pupils
- TV programme on fibre-optic sensors for applications in pulmonology, 2016 https://www.youtube.com/watch?v=OiWylOqcVtI
- Presentation and demonstration "A Fibre-Optic Sensor vs. Spirometer", 5-day activity at the Technical Fair, Belgrade, May 2014, Covered by the national radio-television
- Lectures at Petnica Science Centre, Serbia, 2012-2015
- Television debate with the State Secretary of Science, 2012 https://www.youtube.com/watch?v=7E7lxPsSk38

- Wide media coverage of the work on optical fibre sensing for medical applications upon reception of the L'Oreal Women in Science Award, Serbia, 2012
- The Economist, Laser Focus World, Optics and Photonics News, Physics World and other coverage of the research published in Nature, 2005