

## NIKOLAY UZUNOV

### PERSONAL DETAILS

Name:	Nikolay Mihaylov Uzunov
Nationality:	Bulgarian
Place and Date of Birth:	Shumen, Bulgaria, October 13, 1955
Permanent Address:	26 Madara str, ap. 20 9700 Shumen, Bulgaria Cel. tel.: +39 349 420 8535 +359 896 626 059 e-mail: nuzunov@msn.com
Marital Status:	Married

### EDUCATION

1975 – 1979	MSc., Shumen University “K. Preslavski”, Shumen, Bulgaria Dissertation “Secondary Quantisation of Relativistic two- and three-dimensional objects: membranes and resonators”
November 9, 2000	Ph. D. degree, Dissertation “Development of some nuclear techniques for thin-layer and volumetric analyses”

### EMPLOYMENT HISTORY

1981 – 1982	Teacher of Physics at Mathematical School in Shumen, Bulgaria
1982 – 1983	Physicist at the Faculty of Physics, Shumen University, Shumen, Bulgaria
1983 – 2004	Assistant professor at Dept. of Applied Physics, Faculty of Nat. Sciences, Shumen University, Shumen, Bulgaria
2006 – 2011	Associate Professor of Nuclear Physics at Dept. of Applied Physics, Faculty of Natural Sciences, Shumen University, Shumen, Bulgaria
2012 –	Full Professor of Nuclear Physics at Dept. of Applied Physics, Faculty of Natural Sciences, Shumen University

### QUALIFICATIONS AND SPECIALISATIONS

1979	MSc, Physicist, Teacher of Physics in secondary school
1979 – 1981	Postgraduate specialisations on High Energy Physics and Elementary Particle Physics at the University of Sofia
April 1983 – June 1983	Specialisation on techniques for energy dispersive X-ray analysis at Institute for Nuclear Research and Nuclear Energy, Sofia
April 1989 – May 1989	Specialisation on nuclear techniques for elemental analysis at University of Debrecen, Hungary
Feb. 1991 – Aug. 1991	Specialisation on Ion Beam Analysis techniques at Eindhoven University of Technology, the Netherlands
Aug. 1992 – Oct. 1992	40-th Scottish Summer School on Micro-beam Analysis Techniques, Dundee, UK
Oct. 1992 – Dec 1992	Specialisation on Ion Beam Analysis techniques at Eindhoven University of Technology, the Netherlands
Sept. 1999 – Jan. 2000	Specialization on developing of new methods for thin layer analysis, Eindhoven University of Technology, the Netherlands
November 9, 2000	Ph. D. degree, Dissertation “Developing of nuclear techniques for thin-layer and volumetric analyses”

Apr. 2003 – Nov 2004	Research fellow in PET Laboratory of the National Laboratories of Legnaro, INFN, Italy, a TRIL program of the ICTP, Trieste
Jan. 2005 – Nov 2005	Research fellow in PET Laboratory of the National Laboratories of Legnaro, INFN, Italy, a TRIL program of the ICTP, Trieste
10 October 2006	Associate Professor at Shumen University, Shumen, Bulgaria
Jan 2006 – Jan 2007	Research fellow in PET Laboratory of the National Laboratories of Legnaro, INFN, Italy, a TRIL program of the ICTP, Trieste
25 May – 25 Aug 2007	Research fellow in PET Laboratory of the National Laboratories of Legnaro, INFN, Italy, a TRIL program of the ICTP, Trieste
10 Sept – 9 Oct 2007	Research in PET Laboratory of the National Laboratories of Legnaro, INFN, Italy, FAI project
14 January – 15 Dec 2008	Research fellow in PET Laboratory of the National Laboratories of Legnaro, INFN, Italy, a TRIL program of the ICTP, Trieste
1 May – 30 June 2009	Research in PET Laboratory of the National Laboratories of Legnaro, INFN, Italy, FAI project
1 May – 30 July 2010	Associated Researcher in PET Laboratory of the National Laboratories of Legnaro, INFN, Italy, fellow of a TRIL program of the ICTP, Trieste
1 Sept – 5 Dec 2010	Research in Laboratory for Radiopharmaceuticals and Molecular Imaging (LARIM) (former PET Laboratory) of the National Laboratories of Legnaro, INFN, Italy, FAI project
5 Sept – 15 Dec 2011	Associated Researcher in LARIM, National Laboratories of Legnaro, INFN, Italy, FAI Project
5 Sept – 15 Dec 2012	Associated Researcher in LARIM, National Laboratories of Legnaro, INFN, Italy, FAI Project
4 May 3 August 2012	Research in (LARIM), National Laboratories of Legnaro, INFN, Italy, FAI project
7 Sept - 6 Dec 2012	Associated Researcher in LARIM, National Laboratories of Legnaro, INFN, Italy, fellow of a TRIL program of the ICTP, Trieste
12 June - 30 July 2013	Research in (LARIM), National Laboratories of Legnaro, INFN, Italy, FAI project
3 Sept - 23 Nov 2013	Research in LARIM, National Laboratories of Legnaro, INFN, Padova, Italy, FAI project
1 May - 31 July 2014	Associated Researcher in LARIM of the National Laboratories of Legnaro, INFN, Italy, fellow of a TRIL program of the ICTP, Trieste
1 Feb – 31 July 2015	Visiting professor at the Department of Physics and Astronomy, University of Padua, Padua, Italy

#### EXPERIENCE:

##### **Research experience in:**

1. The use of ion beam techniques such as PIXE, PIGE, SEM and back-scattering (RBS and RFS) for medical applications (Project B-test concerned with BNCT problem, INFN; Project Metadenti concerning micro-PIXE mapping and analysis of the metallic debris released in the surrounding tissues from orthopaedic and dental implants);
2. The use of PIXE and EDXRF for environmental applications (Project BIOENV, LNL INFN, Project RILA, INRNE and Univ. Shumen, Project MADARA Univ. Shumen);
3. The use of PIXE for analysis of objects from archaeological excavations (Project PHPRIN, Univ. Cà Foscari);
4. Methods for small-object imaging (micro SPECT, PET and CT) for small animal imaging at LARIM Laboratory of LNL (Project SCINTIRAD of INFN, Project ECORAD of INFN)
5. Scintimammography and developing new devices (the patented by the INFN tilting-collimator imaging method)

6. Developing novel type scanning devices for imaging in the NIR region and for multimodality imaging

### **Teaching experience.**

Teaching activities conducted at the Department of Natural Sciences at Shumen University, Shumen, Bulgaria, 1983 – 2014

Courses of lectures conducted:

1. Atomic physics
2. Nuclear physics
3. Radioecology
4. Medical physics
5. Computational methods in physics
6. Molecular imaging
7. Radiation physics
8. Applied physics methods for analysis and control

A member of a commission for PhD theses at the Department of Physics and Astronomy of the University of Padua.

Tutor collaborator of the students' stage on "Tecnologie nucleari per i beni culturali", LNL, INFN

Founder of a Medical Physics Master Degree Program at the Faculty of Natural Sciences of the University of Shumen

### **SKILLS:**

Extensive knowledge of: X-ray and gamma-ray spectroscopy; scintillators; X-ray, gamma-ray and charged-particle detectors; position-sensitive detectors; X-ray and gamma-ray imaging; Ion Beam Analysis; interaction of radiation with matter.

Programming abilities on MATLAB and Visual Basic for applications, basic experience in LabView. Familiar with the computational methods in physics.

Ability to work in international teams

Fluent in English, Italian, Russian, Bulgarian

### **AWARDS**

1. 1991 IAEA grant
2. 1992 A NATO Advanced Study Institute grant
3. Sept. 1999 – Jan. 2000 IAEA grant
4. Apr. 2003 – Nov 2004 ICTP, TRIL grant
5. Jan. 2005 – Nov 2005 ICTP, TRIL grant
6. 2006 The Institute for Nuclear Research and Nuclear Energy (INRNE) award for best publication activity
7. Jan 2006 – Jan 2007 ICTP, TRIL grant
8. May – Aug 2007 ICTP, TRIL grant
9. January – Dec 2008 ICTP, TRIL grant
10. Sept – Nov 2009 ICTP, TRIL grant
11. May – July 2010 ICTP, TRIL grant
12. Sept. 2011 - Oct. 2011 ICTP, TRIL grant
13. 2012 The INRNE Award for best publication activity
14. Sept. 2012 - Dec. 2012 ICTP, TRIL grant
15. 2012 - The ICTP Taqi Binesh Prize in the field of Medical Physics
16. 2013 - Honorary Diploma for Tutor at the National Laboratories of Legnaro INFN, 2013, Legnaro (PD), Italy
17. May – July 2014 ICTP, TRIL grant

## REFEREES

Dr. Ilia Penev, Senior Researcher  
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Nuclear Energy at Bulgarian Academy  
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