

## PERSONAL INFORMATION

## Bogdan ZORILA



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Sex Male | Date of birth 05/02/1980 | Nationality Romanian

## POSITION

## Physicist

## WORK EXPERIENCE

1 Mar 2012–Present

**Physicist**

Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH); Department of Life and Environmental Physics (DFVM)  
Str. Reactorului 30, P.O.Box MG-6, 077125 Magurele (Romania)  
<http://www.nipne.ro>

R & D activities within the group of Biophysics and Radiobiology of DFVM;

Electronics and IT design and development;

Processing and analysis of experimental data;

Development and maintenance of hardware / software platform WEATHER TOWER within IFIN-HH.

**Business or sector** Academic, Research and Development

1 Jul 2017–Present

**Service Engineer, part time job**

Dositracker S.R.L., Magurele (Romania)

[www.dositracker.com](http://www.dositracker.com)

Service for Panasonic TLD Readers and Irradiators.

**Business or sector** Professional, scientific and technical activities

1 Mar 2009–29 Feb 2012

**Physical science technician**

Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH); Department of Life and Environmental Physics (DFVM)  
Str. Reactorului 30, P.O.Box MG-6, 077125 Magurele (Romania)  
<http://www.nipne.ro>

Responsible for hardware / software of IT network within DFVM;

R & D activities within the group of Biophysics and Radiobiology of DFVM;

Electronics and IT design and development;

Processing and analysis of experimental data;

Development and maintenance of hardware / software platform WEATHER TOWER within IFIN-HH.

**Business or sector** Academic, Research and Development

15 Feb 2002–28 Feb 2009

**Research assistant**

Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH); Department of Life and Environmental Physics (DFVM)  
Str. Reactorului 30, P.O.Box MG-6, 077125 Magurele (Romania)

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Responsible for hardware / software of IT network within DFVM;  
Electronics and IT design and development;  
Processing and analysis of experimental data.

**Business or sector** Academic, Research and Development

## EDUCATION AND TRAINING

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- 1 Oct 2013–Present **Phd in Physics, Biophysics**  
University of Bucharest, Faculty of Physics, Magurele (Romania)  
Processing of tomographic digital images;  
Digitizing and processing of bioelectric signals;  
Neuronal networks.
- 1 Oct 2011–30 Jun 2013 **Master in Computational Physics**  
University of Bucharest, Faculty of Physics, Magurele (Romania)  
Development of a software for analysis of complex fluorescence spectra;  
Real-time data acquisition and processing;  
Development of virtual interfaces for various instruments;  
Experimental data processing.
- 1 Mar 2013–8 Mar 2013 **Training course at Campbell Scientific**  
Campbell Scientific, Shepshed (United Kingdom)  
Datalogger Programming in CRBasic  
Real-time acquisition and processing of meteorological data
- 5 Mar 2012–10 Mar 2012 **Training course with certificate of attendance at Scientific Volume Imaging.**  
Huygens imaging trainings, Hilversum (Netherlands)  
Subjects: Introduction to image acquisition, Deconvolution, PSF, Pro's and con's of various methods of image acquisition in relation to deconvolution, Imaging artifacts and how to recognize and correct them, Visualizing and analyzing large datasets, Searching and organizing microscopy data efficiently.
- 12 Feb 2012–18 Feb 2012 **Training course with certificate of attendance at Picoquant.**  
4th European short course on "Time-Resolved Microscopy and Correlation Spectroscopy", Berlin (Germany)  
Training course consisting of 6 lectures and 6 hands-on experiment sessions with 4 different instruments from 4 companies, covering different methods and procedures in (time-resolved) fluorescence microscopy such as FLIM, FLIM-FRET, FCS (auto- and cross correlation), FLCS, single molecule spectroscopy and data analysis.
- 1 Oct 2006–30 Jun 2011 **Bachelor Degree in Biophysics**  
University of Bucharest, Faculty of Physics, Magurele (Romania)
- 15 Sep 1994–30 Jun 1998 **High School Diploma, Math-Physics Profile**  
High School "Anastasescu", Rosiori de Vede (Romania)

## PERSONAL SKILLS

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Mother tongue(s) Romanian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C1	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
 Common European Framework of Reference for Languages

**Job-related skills** Solid knowledge in working with fluorescence spectroscopy equipment's.  
 Good mastering of health & environmental impact of nuclear / chemical activities issues.  
 Good mastering of real-time data acquisition and processing.  
 Solid knowledge in working with data logging systems.

**Digital skills**

1. Software Development & Technologies: MS VB.NET, MS C#, MatLab, CR Basic, LabView, Python etc.
2. Geographic Information Systems: GoogleMaps API, Google Earth, Leaflet API.
3. Database and WEB Technologies: HTML, PHP, MySQL, MS Access.
4. Computer Graphics: Adobe Photoshop, GIMP, etc.
5. MS Office.
6. OS: Microsoft Windows: all editions and Linux (medium user).

## ADDITIONAL INFORMATION

**Publications**

Chilom, C. G., **Zorilă, B.** și Popescu, A. I. (2017) *Characterization of Some Physico-Chemical Properties and Interactions of Human and Bovine Serum Albumins with Mitomycin C*, Romanian Journal of Physics, 62.

Zorila, F. L., Ionescu, C., Craciun, L. S. și **Zorilă, B.** (2017) *Atomic force microscopy study of morphological modifications induced by different decontamination treatments on Escherichia coli*, Ultramicroscopy, 182, 226-232.

**Zorilă, B.**, Bacalum, M., Popescu, A. I. și Radu, M. (2016) *Log-Normal Deconvolution of Laurdan Fluorescence Spectra - a Tool to Assess Lipid Membrane Fluidity*, Romanian Reports in Physics, 68, 702-712.

Bacalum, M., **Zorilă, B.** și Radu, M. (2016) *Investigating the Anticancer Activity of Some Cationic Antimicrobial Peptides in Epithelial Tumor Cells*, Romanian Reports in Physics, 68, 1159-1169.

Bacalum, M., **Zorilă, B.** și Radu, M. (2013) *Fluorescence spectra decomposition by asymmetric functions: Laurdan spectrum revisited*, Analytical Biochemistry, 440, 123-129.

Bacalum, M., **Zorilă, B.**, Radu, M. și Popescu, A. (2013) *Laurdan solvatochromism: influence of solvent polarity and hydrogen bonds*, Optoelectronics and Advanced Materials-Rapid Communications, 7, 456-460.

Melintescu, A., Chambers, S. D., Crawford, J., Williams, A. G., **Zorilă, B.** și Galeriu, D. (2018) *Radon-222 related influence on ambient gamma dose*, Journal of Environmental Radioactivity, 189, 67-78.

Chambers, S. D., Galeriu, D., Williams, A. G., Melintescu, A., Griffiths, A. D., Crawford, J., Dyer, L., Duma, M. și **Zorilă, B.** (2016) *Atmospheric stability effects on potential radiological releases at a nuclear research facility in Romania: Characterising the atmospheric mixing state*, Journal of Environmental Radioactivity, 154, 68-82.

Galeriu, D., Melintescu, A., Duma, M., **Zorilă, B.** și Gheorghiu, A. (2014) *Nuclear Meteorology at IFIN-HH*, Romanian Journal of Physics, 59, 999-1011.

**Presentations and Conferences**

**Bogdan Zorilă**, Mirela Cristea, Mihaela Bacalum, Claudia G. Chilom, *The influence of folic acid on the fluidity of dppc liposomal membranes and the effect against normal and tumour cells*, 18<sup>th</sup> International Balkan Workshop on Applied Physics and Materials Science, IBWAP-2018, Constanța, România.

Claudia G. Chilom, **Bogdan Zorilă**, Mihaela Bacalum, S. Stolyar, Anna Artemieva, R. Yaroslavtsev,

A. Kuklin, Maria Bălășoiu, *Characterization of ferrihydrite nanoparticles in interaction with liposomes and the effect against normal and tumour cells*, 18<sup>th</sup> International Balkan Workshop on Applied Physics and Materials Science, IBWAP-2018, Constanța, România.

**Bogdan Zorilă**, Mihaela Bacalum and Mihai Radu, *Evaluation of lipid membrane tryptophan rich peptides bound fraction by fluorescence spectrum deconvolution*, 5<sup>th</sup> International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences, IC-ANMBES-2018, Brașov, România.

**Bogdan Zorilă**, *Models applied to steady state and time resolved fluorescence data analysis to obtain water-to-lipid partition free energy. An experimental approach.*, 17<sup>th</sup> International Balkan Workshop on Applied Physics and Materials Science, IBWAP-2017, Constanța, România.

Florina Lucica Zorilă, **Bogdan Zorilă**, Maria Mihaela Manea, *Spectroscopic study of membrane fluidity modifications induced by different decontamination treatments on Escherichia coli*, 17<sup>th</sup> International Balkan Workshop on Applied Physics and Materials Science, IBWAP-2017, Constanța, România.

**Bogdan Zorilă**, Mihaela Bacalum, *Study of the interaction between antimicrobial peptides and model cell membranes by steady state and time resolved fluorescence*, 4<sup>th</sup> International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences, IC-ANMBES-2016, Brașov, România.

**Bogdan Zorilă**, Mihaela Bacalum and Mihai Radu, *Log-Normal deconvolution of Laurdan fluorescence spectra - a tool to assess lipid membrane fluidity*, 3<sup>th</sup> International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences, IC-ANMBES-2014, Brașov, România.

**Bogdan Zorilă**, Valentin-Teodor Acasandrei, Nicolae Mocanu, *Support database for first responders in transportation incident involving dangerous materials*, 18<sup>th</sup> International Balkan Workshop on Applied Physics and Materials Science, IBWAP-2018, Constanța, România.

**Bogdan Zorilă**, *Software developments for monitoring meteorological and radiological parameters*, ELSESEDIMA 2018, Cluj-Napoca, România.

Anatol Oprea, **Bogdan Zorilă**, *Big data analysis for radon map*, ELSESEDIMA 2018, Cluj-Napoca, România.

**Bogdan Zorilă**, Valentin-Teodor Acasandrei, Nicolae Mocanu, *Local centre for radiological surveillance of the environment (LCRSE) – components and future upgrades for web and offline use*, 16<sup>th</sup> International Balkan Workshop on Applied Physics and Materials Science, IBWAP-2016, Constanța, România.

F.L. Zorilă, C. Ionescu, L.S. Crăciun, **B. Zorilă**, *AFM investigation of morphological modifications induced by different decontamination treatments on bacteria*, 15<sup>th</sup> International Balkan Workshop on Applied Physics, IBWAP-2015, Constanța, România.

**Bogdan Zorilă**, *Chemical detection capabilities of mobile CBRN unit*, 3<sup>th</sup> EMERSYS Project Steering Committee, Workshop for stakeholders information and consultation, 2015, Giurgiu, România.

**Bogdan Zorilă**, *Practical examples with the DIEX platform for registering/visualizing real time data while they are recorded and transmitted from the actual scene of a Radiological/Nuclear emergency*, “Theoretical and practical training on use of radiological and nuclear detection equipment” (Session Training 6) o the EMERSYS Course “Enhance the exercise preparation and emergency expertise from local and the cross-border area by training CBRN operational staff”, 2015, București, România.

**B. Zorilă**, V.T. Acasandrei, A. Cocioceanu, *DIEX Platform - Status Report*, Main planning conference to prepare common exercise for CBRN emergency situations, 2015, Russe, Bulgaria.

D. Galeriu, M. Duma, A. Melintescu, **B. Zorilă**, *Towards a nuclear safety ASOS at IFIN-HH*, 5<sup>th</sup> International Workshop on Optoelectronic Techniques for Environmental Monitoring, OTEM-2011, Măgurele, România.

**Bogdan Zorilă**, Mihaela Bacalum, Constantin Daniel Neguț, Mihalıs Cuturbınıs, Mihai Radu, *Effect of gamma radiation on fluorescent peptides*, 15<sup>th</sup> National Conference of Biophysics, 2018, București, România.

**Bogdan Zorilă**, Mihaela Bacalum and Mihai Radu, *Fluidity changes in lipid bilayers induced by antimicrobial peptides*, 15<sup>th</sup> National Conference of Biophysics, 2018, București, România.

Mirela Cristea, **Bogdan Zorilă**, Mihaela Bacalum, Claudia G. Chilom, *The effect of folic acid on DPPC liposomes*, Bucharest University Faculty of Physics 2018 Meeting, Măgurele, Romania.

**Bogdan Zorilă**, Mihaela Bacalum, Mihai Radu, Aurel I. Popescu, *Fluorescence lifetime of tryptophan - a tool to assess protein microenvironment. Design and optimization of a time resolved fluorimeter*, Bucharest University Faculty of Physics 2017 Meeting, Măgurele, Romania.

**Bogdan Zorilă**, Mihaela Bacalum, *The development and applications of a simple fluorescence lifetime spectrometer*, 14<sup>th</sup> National Conference of Biophysics, 2016, Cluj-Napoca, România.

**Bogdan Zorilă**, Mihaela Bacalum, Aurel Popescu, *Study of the interaction between antimicrobial peptides and model cell membranes by time resolved fluorescence*, 13<sup>th</sup> National Conference of Biophysics, 2015, Timișoara, România.

**Bogdan Zorilă**, Mihaela Bacalum and Mihai Radu, *Log-normal deconvolution of Laurdan fluorescence spectra - a tool to assess lipid membrane fluidity*, Bucharest University Faculty of Physics 2014 Meeting, Măgurele, Romania.

**Bogdan Zorilă**, Mihaela Bacalum, Mihai Radu, *Decomposition of Laurdan fluorescence spectra - a new tool for lipid membrane characterization*, Scientific communication session of young researchers from IFIN-HH, 2013, Măgurele, Romania.

**Bogdan Zorilă**, Mihaela Bacalum, Mihai Radu, *A new method for analyzing the elementary, simulated and measured complex spectra of Laurdan*, Bucharest University Faculty of Physics 2013 Meeting, Măgurele, Romania.

**B. Zorilă**, M. Bacalum, M. Radu, *Solvent effects and photophysical studies of polarity sensitive probe – Laurdan*, 12<sup>th</sup> National Conference on Biophysics with International Participation, CNB-2013, Iași, România.

M. Bacalum, **B. Zorilă**, E. Angheluță, M. Radu, *Laurdan fluorescence spectroscopy as a tool to investigate lipid bilayer dynamics*, 11<sup>th</sup> National Conference on Biophysics with International Participation, CNB-2011, Sibiu, România.

Mihaela Bacalum, **Bogdan Zorilă**, Elena Angheluță, Marcel Ameloot and Mihai Radu, *Using laurdan fluorescence to investigate fluidity changes in biological and artificial membranes*, 11<sup>th</sup> National Conference on Biophysics with International Participation, CNB-2011, Sibiu, România.

**Bogdan Zorilă**, *EMERSYS DIEX Platform for exchanging CBRN data and information. future developments with applications in IFIN-HH*, Scientific communication session of young researchers from IFIN-HH, 2015, Măgurele, Romania.

Florina-Lucica Zorilă, Mihaela Bacalum, **Bogdan Zorilă**, Cristina Ionescu, *Study of the morphological and metabolic modifications induced by different chemical decontamination agents on Escherichia coli*, 13<sup>th</sup> National Conference of Biophysics, 2015, Timișoara, România.