

PERSONAL INFORMATION

Dr. Habil. Daniel Ursescu



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Daniel.Ursescu@eli-np.ro

Sex Male | Date of birth 21.01.1976 | Nationality Romanian

POSITION WITHIN THE PROJECT

Deputy Head of Research Department Laser System, CS I

WORK EXPERIENCE

November 2011 - Present

Research and Development in laser physics, part-time until February 2013 (CS I); permanent position since March 2013; Presently Senior Research Scientist (CS I)

National Institute for Physics and Nuclear Engineering – Horia Hulubei (IFIN-HH). Magurele, Ilfov, Romania

- ELI-NP laser experiments research activities coordinator (2014 – January 2016) / ELI-NP Laser Research Activities Coordinator (January 2016 – February 2018)

Business or sector Scientific Research

16 July 2007 – 31 December 2016

Research and Development in laser physics, permanent position – Research Scientist first degree (CS I, since October 2011)

National Institute for Laser, Plasma and Radiation Physics, Magurele, Ilfov, Romania

- Development of terawatt, solid state laser systems and applications; x-ray lasers. Coordinator of several projects and research packages: COST MP0601 – FP7, FP7 LASERLAB2-JRA HAPPIE and JRA SFINX, FP7 ELI-PP WP7, Romanian projects PNCD2-RP6/2007 and PNCD2-Parteneriate1/2011, European grant ATTRACT 775/2019
- French Government fellowship for 2 months research at Laboratoire d'Optique Appliquee, Palaiseau, France in 2011

Business or sector Scientific Research

14 January 2002 – 31 March 2007

Research and Development in interdisciplinary physics (laser physics, plasma physics, atom physics, nuclear physics); PhD student and postdoc (1 year)

GSI-Darmstadt, Germany

- Development of X-Ray lasers at 13.9nm, 14.7nm and 22.02nm; electron beam ion trap (EBIT) experiments; laser produced plasmas experiments and theory
- Improving the optical stretcher-compressor design for the PHELIX laser; Synchronization of PHELIX PW laser facility with the ion-accelerator facility (coordinator for 1 year)
- Data acquisition and analysis

Business or sector Academic Research

01 November 2000 – 31 December 2001 **Research and Development in interdisciplinary physics (laser physics, optical frequency standards, cryogeny, special relativity tests); postgraduate researcher**
 Institute fuer Experimentalphysik, Heinrich Heine University, Duesseldorf, Germany

- Development of a mixed system: cryogenic-vacuum-optical resonators for precise tests of the relativity theory

Business or sector Academic Research

April 1999 – September 2000 (part-time) **Plasma physics reasearch; Research Assistant**

National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania

- UV radiation production with low temperature excimer plasmas

EDUCATION AND TRAINING

April 2006 – March 2007 **Postdoctoral research related to FP6 Laserlab Europe project: Overcoming technology barriers for ultra intense lasers (OTTER JRA)**

GSI – Darmstadt, Germany, research institute

January 2002 – February 2006 **Doctor in Natural Sciences**

Johannes Gutenberg Universitaet Mainz, Germany in collaboration with GSI-Darmstadt, Germany

- Graduation work: „Grazing Incidence Pumped Zr X-Ray Laser for Li-like Ions Spectroscopy”, evaluation of the written work: „very good”

5-15 July 2003 **International Summer School of quantum electronics: Atoms and Plasmas in Super-Intense Laser Fields; Erice-Sicily, Italy**

25-27 March 2002 **International Summer School: New X-ray Investigation of fast and Ultrafast Processes; Desy, Hamburg, Germany**

September 1999 – July 2000 **Advanced studies Diploma with the specialty opto-techniques and technology with lasers, plasma and radiation**

Bucharest University, Faculty of Physics, Romania

- Optotechnics and technology with lasers, plasma and radiation
- Graduation work: „Metal Matrix Composites Laser Cladding on Aluminium” after a 5 month research stage at ENSAIS Strasbourg, France, general mark 10 (10 is maximum).

September 1994 – July 1999 **Physics engineer with the specialty opto-techniques and technology with lasers, plasma and radiation**

Bucharest University, Faculty of Physics, Romania

- Opto-techniques and technology with lasers, plasma and radiation;
- Graduation work: „Langmuir Probes Measurements in the Reflex Plasma Reactor”, general mark 9.42 (10 is maximum)

September 1990 – July 1994

High School Diploma

High School „Petru Rares”, Piatra Neamt, Romania

- Profile Mathematics and Physics.

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	advanced	advanced	advanced	advanced	advanced
French	average	average	average	average	average
German	average	average	average	average	average

Organisational / managerial skills

- Head of Research activities departments Laser or Laser Experiments at ELI – NP (2014-2018)
- Coordinator of one European project ATTRACT grant 775/2019 and two national research projects (2007-2009, 2011 – 2016); Responsible for the IFIN-HH in one more national project; participant in 5 more national projects
- Romanian research team coordinator in two joint Research Activities of LaserLab 2 FP6 project (SFINX and HAPPIE)
- Principal Investigator in three experiments within LASERLAB3 FP7 Access program in 2013-2015
- Organizer of several international workshops and meetings (LASERLAB FP6 HAPPIE JRA meeting)
- Member of the organizing committee of several conferences, including ICUIL 2012 in Romania
- Member of the Scientific advisory committee for ICUIL conference in 2012, 2014 and 2016
- Member in the Scientific advisory committee for ECLIM conference since 2014
- Member of MC on behalf of Romania for COST Action MP0601
- Co-author of more than 70 articles in ISI monitored Journals; Invited talks: >10

Technical skills and competences

Solid state laser development; interdisciplinary physics set-up developments

Digital competences

Operating Systems Windows and Linux; Microsoft Office
 Programs: Mathematica, Origin, LabView, Corel Draw, Optica3, Shell Scripting

Other skills

PhD students supervisor since 2018, with Universitatea din Bucuresti, Physics Department: 4 PhD students

Teaching:

- Universitatea Politehnica din Bucuresti, first semester of 2016/2017/2018; Master course on Optics and lasers at IALA.
- Universitatea de Vest, Timisoara, second semester of 2012-2013 and 2013-2014; Two semester long Master courses on Extreme Light
- Johannes Gutenberg Universitaet, Mainz, Germany: Two semester Physics Beginner Laboratory; Tutorial in Analytical Mechanics; Tutorial in Computer assisted Optical System Design
- Heinrich Heine Univeristaet, Dusseldorf, Germany: Physics Beginner Laboratory

List of selected ISI publications since 2011:

[Free space variable optical attenuator using frustrated total internal reflection with 70 dB dynamic range](#)

TS Georgescu, I Dancus, D Ursescu
Applied optics 57 (34), 10051-10055 (2018)

[The extreme light infrastructure—nuclear physics \(ELI-NP\) facility: New horizons in physics with 10 PW ultra-intense lasers and 20 MeV brilliant gamma beams](#)

S Gales, KA Tanaka, DL Balabanski, F Negoita, D Stutman, O Tesileanu, ...
Reports on Progress in Physics 81 (9), 094301 (2018)

[New light in nuclear physics: The extreme light infrastructure](#)

By: Balabanski, D. L.; Popescu, R.; Stutman, D.; et al.
EPL Volume: 117 Issue: 2 (2017)

[Substrate surface patterning by optical near field modulation around colloidal particles immersed in a liquid](#)

By: Ulmeanu, M.; Petkov, P.; Ursescu, D.; et al.
Optics Express Volume: 24 Issue: 24 Pages: 27340-27351 (2016)

[Experimental demonstration of a collinear triple pulse grazing-incidence pumping scheme for a transient collisional pumped x-ray laser](#)

By: Kunzel, S.; Cojocaru, G. V.; Gartner, F.; et al.
Journal Of Physics B-Atomic Molecular And Optical Physics Volume: 49 Issue: 21 Article Number: 215601 (2016)

[New frontiers in nuclear physics with high-power lasers and brilliant monochromatic gamma beams](#)

By: Gales, S.; Balabanski, D. L.; Negoita, F.; et al.
Physica Scripta Volume: 91 Issue: 9 Article Number: 093004 (2016)

[One long and two short pumping pulses control for plasma x-ray amplifier optimization](#)

By: Cojocaru, Gabriel V.; Ungureanu, Razvan G.; Banici, Romeo A.; et al.
Optics Express Volume: 24 Issue: 13 Pages: 14260-14270 (2016)

[Non-collinear spectral coherent combination of ultrashort laser pulses](#)

L Ionel, D Ursescu
Optics Express 24 (7), 7046-7054, (2016)

[Materials in extreme environments for energy, accelerators and space applications at eli-np](#)

By: Asavei, T.; Tomut, M.; Bobeica, M.; et al.
Romanian Reports In Physics 68 Supplement: 1, Pages: S275-S347 (2016)

[Monitoring and control systems for experiments at eli-np](#)

By: Cernaianu, M. O.; De Boisdeffre, B.; Ursescu, D.; et al.
Romanian Reports In Physics 68 Supplement: 1, Pages: S349-S443 (2016)

[Laser driven nuclear physics at eli-np](#)

By: Negoita, F.; Roth, M.; Thirolf, P. G.; et al.
Romanian Reports In Physics 68 Supplement: 1, Pages: S37-S144 (2016)

[High field physics and qed experiments at eli-np](#)

By: Turcu, I. C. E.; Negoita, F.; Jaroszynski, D. A.; et al.
Romanian Reports In Physics 68 Supplement: 1, Pages: S145-S231 (2016)

[Laser beam delivery at ELI-NP](#)

Ursescu, D.; Cheriaux, G.; Audebert, P.; et al.
Romanian Reports In Physics 68 Supplement: 1, S11-S36 (2016)

[New Frontiers In Nuclear Physics Research At Eli-Np](#)

Ur, C. A.; Balabanski, D.; Cata-Danil, G.; et al.
Acta Physica Polonica B Volume: 46 Issue: 3 Pages: 743-752 (2015)

[Multiple THz pulse generation with variable energy ratio and delay](#)

Ungureanu, R. G.; Grigore, O. V.; Dinca, M. P.; et al.
Laser Physics Letters Volume: 12 Issue: 4 Article Number: 045301 (2015)

[On-site holographic interference method for fast surface topology measurements and reconstruction](#)

Ionel, L.; Ursescu, D.; Neagu, L.; et al.

Physica Scripta Volume: 90 Issue: 6 Article Number: 065502 (2015)

[The ELI-NP facility for nuclear physics](#)

Ur, C. A.; Balabanski, D.; Cata-Danil, G.; et al.

Nuclear Instruments & Methods In Physics Research Section B, Volume: 355 Pages: 198-202 (2015)

[Gain dynamics in quickly ionized plasma for seeded operated soft x-ray lasers](#)

Guilbaud, O.; Cojocaru, G. V.; Li, L.; et al.

Optics Letters Volume: 40 Issue: 20 Pages: 4775-4778 (2015)

[Pattern formation on silicon by laser-initiated liquid-assisted colloidal lithography](#)

Ulmeanu, M.; Petkov, P.; Ursescu, D.; et al.

Nanotechnology Volume: 26 Issue: 45 Article Number: 455303 (2015)

[Spatially resolved nanostructural transformation in graphite under femtosecond laser irradiation](#)

Marcu, A.; Avotina, L.; Porosnicu, C.; et al.

Applied Surface Science Volume: 355 Pages: 477-483 (2015)

[Phase Measurement in Long Chirped Pulses with Spectral Phase Jumps](#)

R. Ungureanu, G. Cojocaru, R. Banici, D. Ursescu

Optics Express, Vol. 22, Issue 13, 15918-15923 (2014)

[Thin Film Beam Splitter Multiple Short Pulse Generation for Enhanced Ni-like Ag X-Ray Laser Emission](#)

G. Cojocaru, R. Ungureanu, R. Banici, D. Ursescu, O. Delmas, M. Pittman, O. Guilbaud, S. Kazamias, K. Cassou, J. Demailly, O. Neveu, E. Baynard, D. Ros

Optics Letters 39, no. 8, 2246-49 (2014)

[Spatial Extension of the Electromagnetic Field from Tightly Focused Ultra-Short Laser Pulses](#)

L. Ionel, D. Ursescu

Laser and Particle Beams, Vol. 32, no. 1 (2014)

[Extreme Light Infrastructure - Nuclear Physics: A new Research Infrastructure at the Interface of Laser and Subatomic Physics](#)

D. Ursescu, O. Tesileanu, M. Cernaianu, S. Gales, N.V. Zamfir

The Review of Laser Engineering, Vol 42 (2), 123-126 (2014)

[Periodic striations on beryllium and tungsten surfaces by indirect femtosecond laser irradiation](#)

C. Lungu, C. Ticos, C. Poronicu, I. Jepu, M. Lungu, A. Marcu, C. Luculescu, G. Cojocaru, D. Ursescu, R. Banici, G. Ungureanu

Applied Physics Letters, Vol. 104, no. 10 (2014)

[Cell Adhesion Response on Femtosecond Laser Initiated Liquid Assisted Silicon Surface](#)

M. Ulmeanu, L. Sima, D. Ursescu, M. Enculescu, X. Bazan, I. Quintana

Current Topics in Medicinal Chemistry Vol.14, No. 5 (2014)

[Laser irradiation of carbon/tungsten materials](#)

A. Marcu, L. Avotina, A. Marin, C. Lungu, C. Grigorescu, N. Demitri, D. Ursescu, C. Porosnicu, P. Osiceanu, G. Kizane, C. Grigoriu

Journal of Physics: D Applied Physics, Vol. 47, Issue. 35, (2014)

[Extreme Light Infrastructure Nuclear Physics \(ELI-NP\): present status and perspectives](#)

D. Ursescu, O. Tesileanu, D. Balabanski, Gh. Cata-Danil, C. Ivan, I. Ursu, S. Gales, N.V. Zamfir

Proc. of SPIE, Vol. 8780 87801H-1 (2013)

[Extreme Light Infrastructure - Nuclear Physics](#)

O. Tesileanu, D. Ursescu, R. Dabu, N.V. Zamfir

Journal of Physics: Conference Series 420 (2013)

Laser Driven Secondary Sources for Spectroscopy, Plasma Diagnostics and Other Applications

T. Kuehl, B. Aurand, V. Bagnoud, B. Ecker, U. Eisenbarth, D. Hochhaus, P. Neumayer, ..., D. Ursescu
Modern Trends in Physics Research, 179-81(2013)

Aluminum alloy nanosecond vs femtosecond laser marking

S. Rusu, A. Buzaianu, D. Galusca, L. Ionel, D. Ursescu
Bulletin of Materials Science, Vol. 36, No. 6 (2013)

Spectroscopic study of gold nanoparticle formation through high intensity laser irradiation of solution

T. Nakamura, Y. Herbani, D. Ursescu, R. Banici, R. Dabu, S. Sato
Aip Advances Vol. 3, no. 8 (2013)

Titanium alloy nanosecond vs. femtosecond laser marking

S. Rusu, A. Buzaianu, L. Ionel, D. Ursescu, D. Galusca
Applied Surface Science, 259 (2012)

Pump energy reduction for a high gain Ag X-ray laser using one long and two short pump pulses

R. Banici, G. Cojocaru, R. Ungureanu, R. Dabu, D. Ursescu, H. Stiel
Optics Letters, Vol. 37, Issue 24, 5130-5132 (2012)

Spectral Combination of Ultrashort Laser Pulses

R. Banici, D. Ursescu
Europhysics Letters, Vol. 94, No. 4 (2011)