

PERSONAL INFORMATION Nikolay Ivanov Djourelou



 +40374676410(ext.5406)  +40751777046
 nikolay.djourelou@eli-np.ro

Sex Male | Date of birth 19/03/1967 | Nationality Bulgarian

**WORK
EXPERIENCE**

- Sept.2015-present **Senior researcher II degree**
ELI-NP/ IFIN-HH, Magurele-Bucharest

 - Responsible for the positron source TDR and its implementation

- July.2014-Sept.2015 **Senior research III degree**
ELI-NP/ IFIN-HH, Magurele-Bucharest, Romania

 - Responsible for the positron source TDR

- Sept.2007-July.2014 **Associate professor**
INRNE-BAS, Sofia, Bulgaria

 - Materials research with Positron spectroscopy and Slow positron beam

- Sept.2006-Sept.2007 **Invited reasearcher (CNRS)**
LMOPS, University of Savoie, France

 - Build positron laboratory

- Sept.2005-Sept.2006 **Postdoctoral fellow (FEDRA)**
Ghent University, Ghent, Belgium

 - Materials research with positron spectroscopy and slow positron beam

- Sept.2004-Sept.2005 **Associate professor**
INRNE-BAS, Sofia, BulgariaELI-NP/ IFIN-HH, Magurele-Bucharest

 - Materials research with Positron spectroscopy

- Sept.2002-Sept.2004 **Postdoctoral fellow (JSPS)**
High Energy Accelerator Research Organization (KEK), Tsukuba, Japan

 - Materials research with positron spectroscopy and slow positron beam

- 2001-Sept.2002 **Assistant professor**

LMOPS, University of Savoie, France

- Materials research with positron spectroscopy

1997-2001 **Researcher I degree**

INRNE-BAS, Sofia, Bulgaria

- Materials research with positron spectroscopy, computer simulation of nuclear reactor fuel

1997-2001 **Physicist**

INRNE-BAS, Sofia, Bulgaria

- Materials research with positron spectroscopy

EDUCATION AND TRAINING

1993-1996 **PhD**

Sofia State University, Sofia, Bulgaria

- Application of positron annihilation methods for studying defects in thin solid films, sol-gels and superconductors

1987-1992 **Master**

Sofia State University, Sofia, Bulgaria

- specialization in solid body physics

PERSONAL SKILLS

Mother tongue(s) Bulgarian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
Russian	C1	C1	B2	B2	A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills ▪ good communication skills gained through my work as researcher with a long international experience

Organisational / managerial skills ▪ leadership (currently responsible for a team of 3 people)
 ▪ advising people (scientific supervisor of PhD students)
 ▪ decision making skills

Job-related skills ▪ ability to work under pressure
 ▪ assembling equipment

- calculating data
- technical work
- supporting others

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Proficient user	Proficient user	Independent user	Proficient user

Levels: Basic user - Independent user -
[Digital competences - Self-assessment grid](#)

- good command of office suite (word processor, spread sheet, presentation software)
- good command of physics simulation softwares (GEANT4, COMSOL) gained as an researcher
- good command of MATLAB, LABVIEW gained as an researcher

ADDITIONAL INFORMATION

Publications	> 100 in referred international journals
Presentations	> 40
Projects	10
Conferences	> 30
Citations	> 800
H-index (Scopus)	13

ANNEXES
ARTICLES IN REFERED JOURNALS/BOOKS

See the link:

https://scholar.google.com/citations?hl=en&user=4cuPGXUAAAAJ&view_op=list_works&sortby=pubdate

ARTICLES IN FULL TEXT IN CONFERENCE PROCEEDINGS

1. M.Misheva, I.Avramova, St.Plachkova, N.Djourelov, "Positron Study of GeTe and (GeTe)_{1-x}(AgBiTe₂)_x Solid Solutions". University of Rousse "A.Kanchev", Electrical Engineering, Electronics, Automation, Physics. Rousse, Bulgaria, Proceedings of the Conference (1999) V.37, book 3, 351-356
2. M. Manolova, D. Elenkov, M. Georgieva, S. Boneva, V. Simeonova, N. Djourelov, S. Georgiev, K. Lassmann, J. van de Laar, "Validation of the TRANSURANUS code-WWER version by the updated KOLA-3 data set". Third International Seminar on WWER Fuel Performance, Modelling and Experimental Support. Pamporovo, Bulgaria, Proceedings of the Conference (1999) 252-262.
3. N. Djourelov, "Macroscopic Fission Gas Release Model Applied To Russian Fuel". International Seminar on Fission Gas Behavior in Water Reactor Fuels. Cadarache, France, Proceedings of the Conference (2000) 493-497.
4. N. Djourelov, "Study of Creep Strain Correlations of Zr-1%Nb Cladding Material Incorporated in TRANSURANUS Code". International Conference on WWER Reactor Fuel Performance, Modelling and Experimental Support. Albena, Bulgaria, Proceedings of the Conference (2001) 316-321.
5. V.Antonov, I.Iordanova, N.Djourelov, M.Misheva, D.Pavlova, Investigation Of Porosity And Point Defects In Thermally-Sprayed Metal Coatings Applied On Mild Steel, Proceedings of X Workshop Plasmatechnik, ILMENAU, Germany, (2002) 25-30.
6. A.Schubert, K.Lassmann, P.Van Uffelen, J.van de Laar, D.Elenkov, S.Asenov, S.Boneva, N.Djourelov,

M.Georgieva, "Analysis of Fuel Centre Temperatures and Fission Gas Release Data from the IFPE Database". 5th International Conference on WWER Fuel Performance, Modelling and Experimental Support. Albena, Bulgaria, Proceedings of the Conference (2003) 375-381.

7. N. Djourelov, C. He, T. Suzuki, Y. Ito and K. Kondo, Y. Ito, and V.P. Shantarovich, The Influence Of Antioxidant On Positron Annihilation In Polypropylene, Proceedings of the 17-th Workshop on Radiation Detectors and Their Uses, KEK Proceedings, Tsukuba, Japan, (2003) 10-18.
8. M. Lépinay, N. Djourelov, H. Marinov, L. Broussous, K. Courouble, C. Licitra, F. Bertin, V. Rouessac, A. Ayrat, Porosity and solvent diffusion in low-network by ellipso-porosimetry and positron annihilation techniques, in: Advanced Metallization Conference (AMC), Albany, NY; United States, 2012, pp. 94-102.
9. Canali, C., Belov, A. S., Bonomi, G., Boscolo, I., Brambilla, N., Brusa, R. S., Byakov, V. M., Cabaret, L., Carrao, C., Castelli, F., Cialdi, S., Comparat, D., Consolati, G., Dassa, L., Djourelov, N., Doser, M., Drobychev, G., Dudarev, A., Dupasquier, A., Fabris, D., Ferragut, R., Ferrari, G., Fischer, A., Folegati, P., Fontana, A., Formaro, L., Lunardon, M., Gervasini, A., Giammarchi, M. G., Gninenko, S. N., Heyne, R., Hogan, S. D., Jørgensen, L. V., Kellerbauer, A., Krasnicky, D., Lagomarsino, V., Leveraro, F., Manuzio, G., Mariazzi, S., Matveev, V. A., Merkt, , ., Moretto, S., Morhard, C., Nebbia, G., Nedelec, P., Oberthaler, M. K., Perini, D., Petracek, V., Prevedelli, M. , Al-Qaradawi, I. Y., Quasso, F., Riccardi, C., Rohne, O., Pesente, S., Rotondi, A., Spacek, M., Stapnes, S., Sillou, D., Stepanov, S. V., Stroke, H. H., Testera, G., Tino, G., Trezzi, D., Turbabin, A. V., Vaccarone, R., Vairo, A., Viesti, G., Walters, H., Warring, U., Zavatarelli, S. Zenoni, A., Zvezhinskij, D. S., The AEGIS Experiment (Antimatter Experiment: Gravity, Interferometry, Spectroscopy) in Astroparticle, Particle and Space Physics, Detectors and Medical Physics Applications, Leroy, C., Rancoita, P.-G., Barone, M., Gaddi, A., Price, L., Ruchti, R., Editors. 2010, World Scientific Publishing Co. Pte. Ltd. : Singapore. p. 185-189.

C. ORAL REPORTS ON CONFERENCES AND SEMINARS

1. N. Djourelov, "On the consistency between positron annihilation lifetime and Doppler broadening results in polypropylene", ICPA-14, McMaster University, Hamilton, Ontario, Canada, 23-28.July.2006.
2. Séminaire de Nikolay Djourelov (Institute for Nuclear Research and Nuclear Energy, Sofia, Bulgarie), le jeudi 9 Novembre 2006, à 14h30: "Application of Positron Annihilation Techniques for Studying Polymers and Glasses". Salle de TD4 - IUT Chambéry, France.
3. N.Djourelov, "Positron annihilation study of anodic alumina. Positronium formation. "International Workshop "Positron. Positronium. Nanoporous Materials. Application", 20-21 November 2007, Annecy, France.
4. N.Djourelov, "Application of Positron Annihilation Lifetime Spectroscopy to Study Polymeric Materials", workshop "Standard and exotic applications of positron and positronium annihilation in physics and chemistry", 21.October.2008, INRNE, Sofia, Bulgaria.
5. N.Djourelov, "Anodic Alumina as Converter of Positron into Positronium Beam", workshop "Standard and exotic applications of positron and positronium annihilation in physics and chemistry", 21.October.2008, INRNE, Sofia, Bulgaria.
6. N.Djourelov, "New Coincidence Doppler Broadening Setup at INRNE.", workshop "Developments in Positron Spectroscopy. Data acquisition and applications.", 27.October.2009, INRNE, Sofia, Bulgaria.
7. Н.Джурелов, семинар „ Принципи на позитронната спектроскопия. Приложение за изследване на полимерни материали.“ 26.11.2008, XTMU, София.
8. N.Djourelov, "Positron Annihilation Lifetime Spectroscopy. Principles and application for material science. " , seminar at Department of Chemistry, Hacettepe University, 04.June.2008.
9. N.Djourelov, "Positron annihilation spectroscopy in materials structure studies", seminar at INSA, MATEIS, Lyon, 22.06.2009.
10. Nikolay Djourelov (Institute for Nuclear Research and Nuclear Energy, Sofia, Bulgarie), 29 Novembre 2010, à 14h00: "Spark Plasma Sintered Alumina Studied by PALS and positron beam". LMOPS - IUT Chambéry, France.
11. Nikolay Djourelov, 30 Novembre 2010, à 14h00: "Preliminary positron beam results on Xe implanted ZrC0.9500.5", INSA-Lyon.
12. Nikolay Djourelov, 13 December 2011, STMicroelectronics, Crolles, France, "Positron annihilation spectroscopy in materials structure studies"
13. N. Djourelov, "Applications of positron annihilation techniques with e+ beam" at meeting « Positron Annihilation Techniques », june 29th 2012, CEA-LETI, Grenoble, France
14. Nikolay Djourelov, "Porosimetry using positron annihilation. Spectra analysis and results interpretation." 2012, Hacettepe University, Department of Chemistry, Ankara, TURKEY
15. N. Djourelov, H. Marinov, Xe Bubbles Formation in Materials for use in Nuclear Reactors Studied by Slow Positrons, SECOND NATIONAL CONGRESS ON PHYSICAL SCIENCES, 25–29 September 2013, Sofia, Bulgaria
16. N. Djourelov, A. Oprisa, and V. Leca, Project for a Source of Polarized Slow Positrons at ELI-NP, International Conference on Positron Annihilation (ICPA-17), Wuhan, China, 19-24 Sept 2015
17. N. Djourelov, A. Oprisa, V. Leca, Design and Simulations of the Source of Polarized Slow Positrons at ELI-NP, European Nuclear Physics Conference, EuNPC, Groningen, The Netherlands, 30.08-01.09.2015
18. N Djourelov, A Oprisa, D Dinescu, and V Leca, Status of the Project for a Positron Laboratory at ELI-NP, 14th International Workshop on Slow Positron Beam Techniques and Application (Slopops14), Matsue, Japan, 22-27

- May, 2016
19. N. Djourelou, A. Oprisa, V. Leca, D. Dinescu, Project for a positron laboratory at ELI-NP. Positrons as probes to study materials, TIM 17, West University of Timisoara, Romania, May 25-27, 2017
 20. N. Djourelou, Studies of nuclear reactor core materials by positron spectroscopy, Nuclear 2017, ICN-Mioveni, Romania, May 24-26, 2017.
 21. N. Djourelou, Laser-assisted gamma source for industrial applications at ELI-NP, Industrial applications of high-power laser technologies of the Extreme Light Infrastructure (ELI), Republica Ceha, Dolni Brezany, ELI-Beamlines, 23-26.05.2018.

CONTRIBUTION TO PRESENTED POSTERS ON CONFERENCES

1. N. Nancheva, P. Docheva, N. Djourelou, M. Balcheva, Positron study of Cu-Se, In-Se and CuInSe₂ Thin Films, 12th Int. Conference on Positron Annihilation, ICPA-12, Munchen, Germany, 2000
2. N. Nancheva, P. Docheva, N. Djourelou, Effect of the substrate bias on the structural defects in copper films, 4th General Conference of the Balkan Physical Union, BPU-4, Veliko Turnovo, Bulgaria, 22-14 August, (2000)
3. N. Djourelou, C. Dauwe, C. A. Palacio, N. Laforest, C. Bas, "Positron states in polypropylene and polystyrene at low temperature", ICPA-14, McMaster University, Hamilton, Ontario, Canada, 23-28.July.2006.
4. G. Zamfirova, V. Gaydarov, N. Djourelou, E. Nedkov, J. Perena, Positron Annihilation And Microhardness As Complementary Methods For Polymer Investigation, PRAGUE Meetings On Macromolecules "CURRENT AND FUTURE TRENDS IN POLYMERIC MATERIALS" PRAGUE, 26 - 30 JUNE 2005, Czech Republic.
5. D. Uhlenhaut, A. Castellero, F. Dalla Torre, C. Palacio, N. Djourelou, B. Schmitt, B. Patterson, J.F. Loffler, "Synchrotron x-Ray Diffraction Experiments and Positron Annihilation Spectroscopy of Glassy Mg₆₅Cu₂₅Y₁₀ Ribbons", Symposium Z: Bulk Metallic Glasses, November 25 - 29, 2007, Boston, USA.
6. Yann Aman, Nikolay Djourelou, Patrick Nedelec, Nicolas Charvin, Vincent, Garnier, Elisabeth Djurado, "Positron Annihilation Lifetime Spectroscopy As A Powerful Tool To Characterize Sintering: Application To Spark Plasma Sintering Of Alumina", Journée Scf Rhône-Alpes, 10.June.2010, Grenoble, France.
7. N.Djourelou, K.Berovski, E.Popov, S.Peneva, T.Troev, Defect annealing in pure iron and paladium measured by coincidence Doppler broadening spectroscopy. Third International Workshop and Summer School on Plasma Physics, 30 June - 5 July, 2008, Kiten, Bulgaria.
8. G.Zamfirova, N.Djourelou, J.M.Pereña, R.Benavente, E.Pérez, M.L.Cerrada, S.Peneva, V.Gaydarov, EPF 2011, XII GEP Congress, 26th June - 1st July 2011, Granada, Spain, T5 – 110; ISBN: 978-84-694-3124-5. Poster.
9. L.Fambri, G.Zamfirova, D.Lorenzi, N.Djourelou, V.Gaydarov, S.Peneva, Tensile Modulus, Poisson Ratio, Storage Modulus, Indentation Modulus and PALS analysis of Polypropylene/Cycloolefin Copolymer Blends, ISPAC 2011(24th Int.Symp. on Polymer Analysis and Characterization) 6 – 8 June 2011, Torino, Italy.
10. H. Marinov, N. Djourelou, Simulation of the effect of reimplanted backscattered positrons in Si, SECOND NATIONAL CONGRESS ON PHYSICAL SCIENCES, 25–29 September 2013, Sofia, Bulgaria
11. V. Leca, A. Oprisa, S. Balascuta, N. Djourelou, C.A. Ur, Analytical methods based on positron, 09/2014 IZEST ELI-NP Conf. Extreme Lights New Horizons, Paris, France
12. N. Djourelou, C.A. Ur, A. Oprisa, V. Leca, S. Balascuta, T. Marian, C. Petcu, B. Tatulea, V. Buznea, M. Conde, C. Paun, Gamma-to-Positron Converter for High Intensity and High Brilliance Positron Source at ELI-NP. Design Challenges and Simulation by GEANT4, 09/2014 IZEST ELI-NP Conf. Extreme Light's New Horizons - Paris - France
13. C.A. Ur, H. Weller, S. Gales, C.Petcu, G.Suliman, M. Toma, C. Mihai, G. Pascovici, I. Mitu, M. Risca, B. Tatulea, N. Djourelou, A. Oprisa, J. Mueller, M., V.Buznea, M., Gamma Beam Delivery and Diagnostics at ELI-NP, 09/2014 IZEST ELI-NP Conf. Extreme Light's New Horizons - Paris – France
14. N. Djourelou, C.A. Ur, A. Oprisa, V. Leca, S. Balascuta, T. Marian, C. Petcu, B. Tatulea, V. Buznea, M. Conde, C. Paun, Gamma-to-Positron Converter for High Intensity and High Brilliance Positron Source at ELI-NP. Design Challenges and Simulation by GEANT4, IZEST ELI-NP Conf. Extreme Lights New Horizons, Paris, France
15. N. Djourelou, M. Lépinay, H. Marinov, Study of porosity in a SiOCH low-k material by slow positron beam with secondary electron tagging for positron annihilation lifetime spectroscopy, Workshop on Methods of Porosimetry and Applications, Helmholtz-Zentrum, Dresden-Rossendorf, Germany, 21-24 Oct 2015
16. Victor Leca, Andreea Oprisa, Septimiu Balascuta, Nikolay Djourelou, Calin A. Ur, Analytical methods based on positrons, 11th International Conference "Micro- to Nano-Photonics IV- ROMOPTO 2015" Bucharest, Romania, September 1 - 4, 2015
17. Victor Leca, Andreea Oprisa, Nikolay Djourelou, Positron-based spectroscopy methods at ELI-NP, Methods of Porosimetry and Applications, HZDR Dresden-Rossendorf, Germany, 21-23 October 2015
18. A. Oprisa, N. Djourelou, V. Leca, Techniques based on positrons at ELI-NP, International Conference on Extreme Light (ICEL 2015), Bucharest, Romania, 23-27 November 2015
19. N. Djourelou, A. Oprisa, V. Leca, Project for Positron Spectroscopy Laboratory at ELI-NP, 11th International Conference "Micro- to Nano-Photonics IV- ROMOPTO 2015" Bucharest, Romania, September 1 - 4, 2015
20. V. Leca, A. Oprisa, N. Djourelou, and C. A. Ur, Positron spectroscopy analytical methods at ELI-NP, 28th International Conference on Defects in Semiconductors (ICDS 2015), Espoo, Finland, July 27 – 31, 2015

21. A. Oprisa, N. Djourelov, V. Leca, Positron Production at ELI-NP Simulated Using GEANT4, 28th International Conference on Defects in Semiconductors (ICDS-2015), Espoo, Finland, July 27 – 31, 2015
22. V. Leca, A. Oprisa, S. Balascuta, N. Djourelov, C.A. Ur, Analytical methods based on positron, 09/2014 IZEST ELI-NP Conf. Extreme Light's New Horizons - Paris – France
23. N Djourelov, and D Dinescu, Design and simulation of a pulsed positron beam at ELI-NP, 14th International Workshop on Slow Positron Beam Techniques and Application (Slopos14), Matsue, Japan, 22-27 May, 2016.
24. A. Oprisa, N. Djourelov, D. Dinescu, and V. Leca, Simulations of production of slow positrons by brilliant gamma beam at ELI-NP, 14th International Workshop on Slow Positron Beam Techniques and Application (Slopos14), Matsue, Japan, 22-27 May, 2016
25. V. Leca, A. Oprisa, N. Djourelov, Positron Spectroscopy Analytical Methods for Material Studies at ELI-NP, 5th International Conference on Superconductivity and Magnetism (ICSM 2016), Fethiye, Turkey
26. D. Dinescu, N. Djourelov, Simulations on reducing the influence of backscattered slow positrons on lifetime measurements, 12th International Workshop on Positron and Positronium Chemistry, August 28 – September 01, Lublin, Poland, 2017
27. A. Oprisa, N. Djourelov, V. Leca, D. Dinescu, Slow positron beam and spectrometers at ELI-NP, 2nd International Conference on Nuclear Photonics, Brasov, Romania, , June 24-29, 2018
28. D. Dinescu and N. Djourelov, Characterization of epitaxial GaN thin films by slow positrons, 18th International Conference on Positron Annihilation, Orlando, U.S.A, 19-24.08.2018
29. Design of a Cryogenic Device for Solid Neon Deposition on a Positrons Source for ELI-NP Project
30. I. Dobrin, N. Djourelov, D. Enache, A. Dobrin, I. Popovici, G. Dumitru, Design of a Cryogenic Device for Solid Neon Deposition on a Positrons Source for ELI-NP Project, 18th International Balkan Workshop on Applied Physics and Materials Science, 10-13 July, Constanta 2018
31. D. Dinescu, A. Oprisa, V. Leca and N. Djourelov, The design and implementation of the positron spectroscopy laboratory at ELI-NP, 18th International Conference on Positron Annihilation, Orlando, U.S.A, 19-24.08.2018

CONTRIBUTION TO PROJECTS

1. Contract No 226/93 with Fund Scientific Research at Sofia University, Bulgaria on “Application of the positron annihilation methods to study thin films” 01.06.1993 – 31.05.1994, M. Misheva (project leader), N. Djourelov, Ts. Kotlarova
2. Contract No 165/95 with Fund Scientific Research at Sofia University, Bulgaria on “Application of the positron annihilation methods to study condensed matter – study of singlecrystal Germanium” 01.06.1995 – 31.05.1996, M. Misheva (project leader), N. Djourelov
3. Contract No Ф-645 with Fund Scientific Research at the Ministry of Education, Science and Technology, Bulgaria on “Study of polymers and other molecular compounds by methods of positron annihilation” 01.07.1996 – 31.07.1997. Addendum till 15.12.1999, M. Misheva (project leader), D.Elenkov, M.Krasteva, I.Seganov, S.Boneva, M.Georgieva, N.Djourelov
4. Contract No 7567/RB with IAEA – Vienna on “Application of PA spectroscopy for studying of as-grown defects in thin solid films”, M.Misheva (project leader), D.Elenkov, N.Nancheva, P.Docheva, Tzv.Kotlarova, N.Djourelov, A.Georgiev, N.Stefanov, From 15.09.1993 for 3 years
5. Contract No B5-BUL-32012 with IAEA – Vienna, on “Application of PA methods, together with conventional ones, to study the structural changes in some environmentally friendly polymers upon ionizing radiation”, M.Misheva (project leader), M.Kresteva, G.Zamfirova, N.Djourelov, N.Dishovski, From 15.11.2003 for 3 years.
6. Contract Rila4/222 with Ministry of Education, Science and Youth, Bulgaria on “Study of formation and thermalization of Positronium (SOFT)” 2009-2010, N.Djourelov (project leader), I. Mincov
7. Contract DVU01/0164 with Ministry of Education and Science, Bulgaria, on “Mechanical properties of polymer nanocomposites with industrial application” 2009-2011, G.Zamfirova (project leader), I.Kolarov, I Savova, V. Gajdarov, R. Kotsilkova, E.Ivanov, N.Djourelov, T. Kirova-Simova, N.Hristov, J. Perena, R. Benavente, E. Perez, M. Cerrada, J. Minster
8. Contract EBR2010-2011 between Bulgarian Academy of Science and UCBL, Lyon, France on “Positron spectroscopy developments and fundamental studies (PASTIS)”, N.Djourelov (project leader), I. Mincov
9. Contract Rila5/17 with Ministry of Education, Science and Youth, Bulgaria on “Technical applications of the positron spectroscopy (TAPAS)” 2012-2013, N.Djourelov (project leader), H.Marinov, E.Popov
10. 27-ELI/ COMPOSITE, Title: Development of new experimental setups and materials for the positron converter and moderator for the ELI-NP positron beam line, 2016-2019, Project coordinator: Nikolay Djourelov