



PERSONAL INFORMATION Nikolay Ivanov Djourelou


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

WORK EXPERIENCE

Sept.2021-present	Senior researcher II degree, Dr. Habil.	
	ELI-NP/ IFIN-HH, Magurele-Bucharest	
	Responsible for the positron source TDR and its implementation	
Sept.2015-Sept.2021	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	> 110 in referred international journals
Presentations	> 40
Projects	11
Conferences	> 30
Citations	> 1500
H-index (Scopus)	15

ANNEXES
ARTICLES IN REFERED JOURNALS/BOOKS

1. N.Nancheva, P.Docheva, N.Feschiev, M.Misheva and N.Djourelov, Defects in sputter-deposited aluminium films, studied by X-ray diffraction and positron annihilation, Scripta Metalurgica et Materialia, 33 (1995) 575-581.
2. M.Misheva, N.Djourelov, Tzv.Kotlarova, D.Elenkov and G.Passage, Study of as-grown defects in thin titanium films by positron annihilation spectroscopy, Balkan Physics Letters, 3 (1995) 83-86.
3. M.Misheva, N.Djourelov, F.M.A.Margaca, I.M.Miranda Salvado and G.Passage, A study of free-volume

- hole distributions in $x\text{TiO}_2 \cdot (1-x)\text{SiO}_2$ by positron annihilation spectroscopy, *J.Phys.:Conds.Matter* 8 (1996) 6313-6321.
4. N.Djourelov and M.Misheva, Source correction in positron annihilation lifetime spectroscopy, *J.Phys.:Conds.Matter* 8 (1996) 2081-2087.
 5. M.Misheva, N.Djourelov, Tzv.Kotlarova, D.Elenkov and G.Passage, Study of defects in thin titanium films by positron annihilation spectroscopy, *Thin Solid Films* 283 (1996) 26-29.
 6. N.Nancheva, N.Feshiev, D.Tzaneva, M.Misheva and N.Djourelov, Positron trapping at defects in Y-Ba-Cu-O, La-Nd-Ba-Cu-O and La-Nd-Pb-Cu-O superconductors, *J. of Materials Processing Tech.* 68 (1997) 8-12.
 7. N.Nancheva, N.Feschiev, M.Misheva, N.Djourelov, Tz.Kotlarova and D.Elenkov, Defects in sputter-deposited titanium films, studied by positron annihilation and X-ray diffraction, *Nukleonika* 42 (1997) 169-174.
 8. N.Nancheva, P.Docheva P.Hadjijaska, M.Misheva, N.Djourelov and D.Elenkov, Investigation of the effect of oxygen and substrate bias on the defect structure of sputter-deposited SnOx films, *Scripta Materialia* 37 (1997) 1957-1962.
 9. N.Nancheva, P.Docheva, M.Misheva and N.Djourelov, A Study Of Defect Structure Of Sputter-Deposited SnOx Films Using The Doppler Broadening Of The Annihilation Line, *Bulg. J. Phys.* 25 (1998) 171-176.
 10. N.Djourelov, D.Gogova and M.Misheva, Study of thin chemical vapour deposited tungsten oxide films by positron annihilation spectroscopy, *Thin Solid Films* 347 (1999) 302-306.
 11. M.Misheva, M.Mihaylova, N.Djourelov, M.Kresteva, V.Krestev, E.Nedkov, Radiation Positron Annihilation Life-Time Spectroscopy Studies of Irradiated Poly(propylene-co-ethylene)/Poly(ethylene-co vinyl acetate) Blends, *Radiation Physics and Chemistry* 58 (2000) 39-47.
 12. M.Misheva, N.Djourelov, A.Dimitrova, G.Zamfirova, Ultrahigh molecular weight polyethylene free volume hole structure studied by positron annihilation lifetime technique, *Macromol. Chem. Phys.* 201 (2000) 2348-2353.
 13. M.Misheva, N.Djourelov*, F.M.A.Margasa, I.M.Miranda Salvado, Positronium Decay Study of Zirconia-Silica-gels, *J. Non-Crystalline Solids* 272 (2000) 209-217.
 14. M.Misheva, N.Djourelov* and E.T.Nedkov, Gamma Irradiation Effect Upon Positron Annihilation in Ultra High Molecular Weight Poly (Ethylene Oxide), *Radiation Physics and Chemistry* 62 (2001) 379-385.
 15. M.Misheva, N.Djourelov*, F.M.A.Margaca and I.M.Miranda Salvado, Positron Annihilation Spectroscopy Applied On Sol-Gel Prepared SiO₂, *J.Non Cryst. Sol.* 279 (2001) 196-203.
 16. M.Misheva, I.Avramova, St.Plachkova and N.Djourelov, Study Of Defects In GeTe and (GeTe)_{1-X}(AgBiTe₂)_X Solid Solutions By Positrons, *Acta Physica Polonica A* 99 (2001) 423-428.
 17. M.Misheva, N.Djourelov, I.Seganov, Effect Of Annealing On Free-Volume Properties Of Poly(Ethylene Terephthalate) Studied By Positron Annihilation, *Acta Physica Polonica A* 99 (2001) 429-434.
 18. N.Nancheva, P.Docheva, N.Djourelov and M.Balcheva, Positron Study of Cu-Se, In-Se and CuInSe₂ Thin Films, *Materials Science Forum* 363-365 (2001) 147-149.
 19. M.Misheva, N.Djourelov, N.Sertova, I.Petkov and T.Deligeorgiev, Study of γ -Irradiated Benzothiazole-Doped Polyvinyl Chloride by Positron Annihilation, *Mat.Sci.Forum*, 363-365 (2001) 319-321.
 20. D.Elenkov, S.Boneva, N.Djourelov, M.Georgieva, S.Georgiev, Verification of the Transuranus-WWER Code Version v1m2j00 By SOFIT and KOLA-3 Data Bases, Part I, *DOKL BOLG AKAD NAUK*, 54 (2001) 47-52.
 21. Nancheva N., P. Docheva, N. Djourelov. Effect of the Substrate Bias on the structural defects in copper films. *Известия на СУ – Русе*, 2002, No 3, pp. 103-105.
 22. N.Nancheva, P.Docheva, N.Djourelov and M.Balcheva, Positron and X-Ray Diffraction Study of In-Se, Cu-Se and Cu-In-Se₂, *Materials Letters* 54 (2002) 169-174.
 23. D.Elenkov, S.Boneva, N.Djourelov, M.Georgieva, S.Georgiev, Verification of the Transuranus-WWER Code Version v1m2j00 By SOFIT and KOLA-3 Data Bases, Part II, *DOKL BOLG AKAD NAUK*, 55 (2002) 27-32.
 24. G.Zamfirova, M.Misheva, M.Kresteva, N.Djourelov, R.Benevente, E.Perez, J.M.Perena, Physical Aging of Poly(diethylene glycol-p,p' bibenzoate), *Journal of Applied Polymer Science* 83 (2002) 2363-2368.
 25. G.Zamfirova, M.Misheva, E.Perez, R.Benavente, M.Cerrada, N.Djourelov, M.Kresteva, J.M.Perena, Norbornene-Ethylene Copolymers Studied by Non-Destructive Methods, *Polymer Journal* 34 (2002) 779-785.
 26. N.Djourelov, M.Misheva, G.Zamfirova, R.Benavente, E.Pérez, J.M.Pereña, Positron Annihilation in Norbornene-Ethylene Copolymers, *Macromol. Chem. Phys.* 204 (2003) 1531-1538.
 27. C.He, E.Hamada, N.Djourelov, T.Suzuki, H.Kobayashi, K.Kondo, Y.Ito, Development on a pulsed slow positron beam: Moderator and bunching signal waveform, *Nucl. Instr. Meth. B* 211 (2003) 571-576.
 28. N.Djourelov, C.He, T.Suzuki, V.P.Shantarovich, Y.Ito, K.Kondo, Y.Ito, Positron Annihilation in Polypropylene studied by Lifetime and Coincidence Doppler-Broadening Spectroscopy, *Rad. Phys. Chem.* 68 (2003) 689-695.

29. V.P.Shantarovich, T.Suzuki, C.He, N.Djourelov, I.B.Kevdina, V.A.Davankov, A.V.Pastukhov, Y. Ito, Positron Annihilation in Polymers with Highly Developed Specific Surface, *Materials Science Forum* 445-446 (2004) 346-349.
30. N.Djourelov, T.Suzuki, C.He, Y.Ito, K.Velitchkova, E.Hamada, K.Kondo, Carbon-Implanted Polyethylene Characterized by a Pulsed Slow-Positron Beam, *Materials Science Forum* 445-446 (2004) 280-283.
31. Y.Ito, N.Djourelov, T.Suzuki, K.Kondo, Y.Ito, V.Shantarovich, J.Onoe, Application of coincidence Doppler-broadening spectroscopy to different carbon phases, *Materials Science Forum* 445-446 (2004) 310-313.
32. N.Djourelov, T.Suzuki, Y.Ito, K.Velitchkova, K.Kondo, Variable-Energy Positron Annihilation Lifetime and Doppler-Broadening of the Annihilation Line Study of Carbon-Implanted Polyethylene. *Nucl. Instr. Meth. B*, 225(2004) 357-363.
33. N.Djourelov, T.Goworek, K.Kondo, T.Suzuki, R.Zaleski, Enhancement of positronium formation by trapped electrons in solid n-nonadecane. Light bleaching effect. *Physics Letters A* 323 (2004) 165-168.
34. C. He, T. Suzuki, V.P.Shantarovich, N.Djourelov, K. Kondo, Y. Ito, Positron annihilation studies of hyper-cross-linked polystyrenes, *Chem. Physics* 303 (2004) 219-226.
35. N.Djourelov, T.Suzuki, R.S.Yu, V.Shantarovich, K.Kondo, Application of coincidence Doppler broadening spectroscopy to polypropylene and polyethylene: taking into account the positronium formation, *Chem. Physics* 302 (2004) 179-184.
36. N.Djourelov, T.Suzuki, Y.Ito, V.P.Shantarovich, Y.Ito, K.Kondo, J.Onoe, Application of Coincidence Doppler Broadening Spectroscopy to simple hydrocarbons, *Chem. Phys.* 298 (2004) 183-187.
37. N.Djourelov, C.He, T.Suzuki, Y.Ito, K.Velitchkova, E.Hamada, K.Kondo, Carbon Implanted Ultra High Molecular Weight Polyethylene Studied by Slow Positron Beam, *Nucl. Instr. Meth. B* 215 (2004) 83-89.
38. N.Djourelov, T.Suzuki, V.P.Shantarovich, T.Dobreva, Y.Ito, Transitions and Relaxations in Gamma-Irradiated Polypropylene Studied by Positron Annihilation Lifetime Spectroscopy, *Rad. Phys. Chem.* 72 (2005) 13-18.
39. N.Djourelov, T.Suzuki, M.Misheva, F.M.A.Margaça, I.M.Miranda Salvado. Positron annihilation lifetime study of organic-inorganic hybrid materials prepared by irradiation. *J. Non-Crystalline Solids*, 351 (2005) 340-345.
40. T.Xu, Y.Bin, N.Djourelov, T.Suzuki, M.Matsuo, Positron annihilation study of density fluctuation of amorphous poly(ethylene terephthalate) films in terms of the quasi-spinodal decomposition, *Phys. Rev. B* 71 (2005) 075204.
41. R.S.Yu, T.Suzuki, N.Djourelov, K.Kondo, Yasuo Ito, and V.Shantarovich, Positron annihilation lifetime and coincidence Doppler broadening study of γ -irradiated polyethylene, *Chemical Physics* 313 (2005) 63–69. IF/1.934/a/6
42. S.Okamoto, R.S.Yu, N. Djourelov, T.Suzuki, Study on thermal behavior of solution-cast liquid crystalline polymer film by positron annihilation lifetime spectroscopy, *Polymer* 46 (2005) 6455–6460.
43. N.Djourelov, T.Suzuki, V.Shantarovich, K.Kondo, Positronium formation in sol-gel-prepared silica-based glasses. Temperature and positron-irradiation effect. *Rad. Phys. Chem.* 72 (2005) 723-729.
44. N.Djourelov, T.Suzuki, Y.Ito, V.Shantarovich, K.Kondo, Gamma and positron irradiation effects on polypropylene studied by coincidence Doppler broadening spectroscopy. *Rad. Phys. Chem.* 72 (2005) 687-694.
45. N.Djourelov, T.Suzuki, R.S.Yu, Y.Ito, Coincidence Doppler broadening study on hydrocarbons with pi and sigma valence electrons. Positronium correction, *Nucl. Instr. Meth. A* 540 (2005) 487-494.
46. R.S.Yu, T.Suzuki, Y.Ito, N.Djourelov, K.Kondo, V.Shantarovich, Application of coincidence Doppler broadening spectroscopy to hydrocarbons at different substance states, *Acta Physica Polonica A* 107 (2005) 697-701.
47. A.Macková, V.Havránek, V.Švorčík, N. Djourelov, T.Suzuki, Degradation of PET, PEEK and PI induced by irradiation with 150 keV Ar⁺ and 1,76 MeV 4He ions, *Nucl.Instr.Meth. B*, B 240 (2005) 245–249.
48. V.P. Shantarovich, T. Suzuki, N. Djourelov, A. Shimazu, V.W. Gustov, I.B. Kevdina, Some Aspects of Free Volume Studies in Molecular Substances Using Positronium Annihilation Experiments, *Acta Physica Polonica A* 107 (2005) 629-634.
49. R.S.Yu, T.Suzuki, Y.Ito, N.Djourelov, K.Kondo, V.Shantarovich, Coincidence Doppler broadening study of polar and nonpolar molecules in liquid and solid states, *Chemical Physics Letters* 406 (2005) 101–105.
50. B.Ganguly, N.Djourelov, T.Suzuki, S.Kundu, Surface Modification of Mica by Titanium Sputtering and Studied by Positron Annihilation, *Applied Radiation and Isotopes* 64 (2006) 651–655.
51. R.S.Yu, T.Suzuki, N.Djourelov, Y.Ito, K.Kondo, Study of irradiation effect on positronium formation in polypropylene, *Rad. Phys. Chem.* 75 (2006) 247–252.
52. C.A. Palacio, N. Djourelov, J. Kuriplach, C. Dauwe, N. Laforest, and D. Segers, Doppler broadening of positron annihilation radiation as a probe for the anisotropy of free-volume-holes in polymers, *Phys. Status Solidi (c)* 4, 10 (2007) 3755-3758.
53. J. De Baerdemaeker, K. Boussu, N. Djourelov, B. Van der Bruggen, C. Dauwe, M. Weber, K.G. Lynn,

- Investigation of nanopores in nanofiltration membranes using slow positron beam techniques, *Phys. Status Solidi (c)* 4, 10 (2007) 3804-3809.
54. N. Djourelou, C. Dauwe, C. A. Palacio, N. Laforest, C. Bas, On the consistency between positron annihilation lifetime and Doppler broadening results in polypropylene, *Phys. Status Solidi (c)* 4, 10 (2007) 3710-3713.
 55. N. Djourelou, C. Dauwe, C. A. Palacio, N. Laforest, C. Bas, Positron states in polypropylene and polystyrene at low temperature, *Phys. Status Solidi (c)* 4, 10 (2007) 3743-3746.
 56. N. Djourelou, Z. Ateş, O. Güven, M. Misheva, T. Suzuki, Positron Annihilation Lifetime Spectroscopy of Molecularly Imprinted Hydroxyethyl Methacrylate Based Polymers, *Polymer* 48 (2007) 2692-2699.
 57. N. Djourelou, N. Charvin, C. Bas, J. Viret, V. Samoylenko, D. Sillou, Symmetric analog positron lifetime spectrometer utilizing charge-to-digital converters, *Nucl. Instr. Meth. B* 264 (2007) 165–170.
 58. M. Misheva, N. Djourelou*, G. Zamfirova, V. Gaydarov, M. L. Cerrada, V. Rodríguez-Amor, E. Pérez, Effect of compatibilizer and electron irradiation on free-volume and microhardness of syndiotactic polypropylene/clay nanocomposites. *Rad.Phys.Chem.*, 77 (2008) 138 - 145.
 59. N.Djourelou, C.A.Palacio, J. De Baerdemaeker, C.Bas, N.Charvin, K.Delendik, G.Drobychev, D. Sillou, O.Voitik, S.Gninenko, A study of positronium formation in anodic alumina, *J. Phys.: Condens. Matter* 20 (2008) 095206.
 60. Kellerbauer, A., Amoretti, M., Belov, A.S., Bonomi, G., Boscolo, I., Brusa, R.S., Buchner, M., Byakov, V.M., Cabaret, L., Canali, C., Carraro, C., Castelli, F., Cialdi, S., de Combarieu, M., Comparat, D., Consolati, G., Djourelou, N., Doser, M., Drobychev, G., Dupasquier, A., Ferrari, G., Forget, P., Formaro, L., Gervasini, A., Giammarchi, M.G., Gninenko, S.N., Gribakin, G., Hogan, S.D., Jacquy, M., Lagomarsino, V., Manuzio, G., Mariazzi, S., Matveev, V.A., Meier, J.O., Merkt, F., Nedelec, P., Oberthaler, M.K., Pari, P., Prevedelli, M., Quasso, F., Rotondi, A., Sillou, D., Stepanov, S.V., Stroke, H.H., Testera, G., Tino, G.M., Trenc, G., Vairo, A., Vigue?, J., Walters, H., Warring, U., Zavatarelli, S., Zvezhinskij, D.S., Proposed antimatter gravity measurement with an antihydrogen beam (2008) *Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms*, 266 (2008) pp. 351-356
 61. Dauwe, C., De Baerdemaeker, J., Djourelou, N., Laforest, N., Van Waeyenberge, B., Is kapton* really that simple? *Acta Physica Polonica A* 113 (2008) 1315-1319.
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C. ORAL REPORTS ON CONFERENCES AND SEMINARS

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