

PERSONAL INFORMATION

ILEANA RĂU



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WORK PLACE

University POLITEHNICA of Bucharest
 Faculty of Applied Chemistry and Materials Science
 Department of General Chemistry

WORK EXPERIENCE

- » Director of Doctoral School "Applied Chemistry and Materials Science" from IOSUD - UPB
- » Professor, PhD advisor, University POLITEHNICA of Bucharest, 2014 - Present
- » Associate Professor, University POLITEHNICA of Bucharest, 2009 – 2014
- » Lecturer, University POLITEHNICA of Bucharest, 2001 – 2009
- » Assistant Professor, University POLITEHNICA of Bucharest, 1997 – 2001
- » Full – time Ph.D. student, University POLITEHNICA of Bucharest, 1996 – 1997
- » Chemical engineer, S.C. PROCELIA S.A. Braşov, 1994 – 1996

EDUCATION AND TRAINING

- D.Sc. (HDR) in Chemical Engineer; 2013; University POLITEHNICA of Bucharest
- D.Sc. (HDR - Habilité de Diriger des Recherches) in Physics, 2007; Université d'Angers
- Ph.D. in Chemistry, 2002, University POLITEHNICA of Bucharest
- Master of Science (engineer) in Chemistry, majoring in Applied Physical Chemistry and Electrochemistry, University POLITEHNICA of Bucharest. Final studies mean 10,00
- Institution – Faculty of Industrial Chemistry, University POLITEHNICA of Bucharest.
 Period: 1989 – 1994. Graduation mark: 10/10. Final studies mean: 9.26/10. obtained title engineer
- **Specializations**
 - 27.03 – 31.03.1995 – Learning stage "Quality systems in experimental laboratories". RELAR, Bucharest;
 - 14.09 – 15.09.2000 – participation at the workshop: "New foresights of ISO 17025. Its application in accreditation activity of experimental laboratories", RENAR, Bucharest;
 - 2.09 – 6.09.2002 – Participation at summer school: Nanostructures in Technology and Biomedicine, Jesi, Italia;
 - 17.03 – 18.03.2003 – Participation at the workshop Principles and applications of the chemistry metrologies, organized in Bucharest by European Commission – Joint Research Centre Institute for Reference Materials and Measurements, Geel, Belgia.
 - 15.03 – 22.04.2010 curs de FORMATOR cod COR 241205
- **Research stages**
 - University AUTONOMA de Barcelona, Spain – ian. – apr. 1999;- ian. – aug. 2000.
 - CEA (Commissariat à l'Énergie Atomique) – Saclay, Franţa;
 - **Postdoc Contract CEA – DRI** : Febr. 2004 – Febr. 2005,
 - CEA (Commissariat à l'Énergie Atomique) – Saclay, Franţa;
 - **Postdoc – (European Project FP 6)**: Febr. 2005 – Febr. 2006
 - Université d'Angers, Laboratoire POMA, France ; Postdoc – (European Project FP 6): Febr. 2006 – Febr. 2007
- **Visiting Profesor**
 - ENS Lyon, Franta mai – july 2010, (2 months)
 - Yonsei University, Coreea de Sud – november 2016 (one week)
 - ENS Lyon, Franta september – december 2018, (3 months)
 - University Aix-Marseille, Franta, oct. 2018 – 3 days

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C1	C1	C1	C2
French	C2	C2	C2	C2	C1
Spanish	C2	B1	B1	B1	B2

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

Didactical competences and abilities

- PhD Advisor for more than 15 PhD students – 4 PhD

- teaching course *Chromatographic methods assisted by computer*.
- teaching course *General Chemistry* for students of Faculty of Electronics, Telecommunications and Information Technology, Faculty of Engineering and Management of Technological Systems and Faculty of Engineering in Foreign Languages
- teaching course and practical works *Dating, authentication and expertise of art work*, Master program, Faculty of Applied Chemistry and Materials Science
- teaching course *Aesthetics and ergonomics*, Master program, Faculty of Applied Chemistry and Materials Science
- teaching course and practical works *Chemical Processes in Automotive Electronics*, Master program, Faculty of Electronics, Telecommunications and Information Technology
- Seminars and practical works: *Physical Chemistry and Biophysical Chemistry*;
- Seminars and practical works of *General Chemistry* for students of Faculty of Electronics, Telecommunications and Information Technology, Faculty of Engineering and Management of Technological Systems, Faculty of Engineering in Foreign Languages, Faculty of Aerospace Engineering and Faculty of Electrics Engineering
- Practical works for the discipline *Advanced Spectral Methods*, year VI Master *Biofuels and biotechnologies*, Faculty of Medical Engineering
- Project tutor for licence and dissertation projects of students
- tutor for research stages for French students of University Poitiers and University Limoges, France (research stages at University POLITEHNICA of Bucharest)
- tutor for research stages of 2 PhD students from University of Angers, France (2006)
- participation in license diplomas juries

Organisational / managerial skills

- **Member in more than 20 PhD juries** (Maroc, France, Italy, Romania)
- **Member of the Board of the Department of General Chemistry (2012-2020)**
- **Member of the Board of the Faculty of Applied Chemistry and Materials Science**
- **European evaluator expert (FP7 and HORIZON 2020) - panels FET Open and PEOPLE Marie Curie: IEF, OIF, IIF Fellowships, ITN, IRSES from 2007**
- **Evaluator Expert for FWO program (Research Foundation - Flanders (FWO))** Belgia starting with 2019
- **Evaluator for National (Romanian) Programs PN II and PN III from 2007**
- **Evaluator and Monitor for national program ROSE from 2017**
- **Evaluator for Eugen Ionescu fellowship programme from 2020**
- **Member in Scientific Committee** for ICTON MW07 (International Conference on Transparent Optical Network Sousse, Tunisia, 6 – 8 Decembrie 2007; 2nd ICTON MW08 (International Conference on Transparent Optical Network) Marrakesh, Maroc, Decembrie 2008
- **Member in International Committee Program** for 8th ICFPAM (International Conference on Polymers and Advanced Materials), Cancun, April, 2005, 9th ICFPAM (International Conference on Polymers and Advanced Materials), Cracovia, Polonia, July, 2007; 10th ICFPAM (International Conference on Polymers and Advanced Materials), Santiago de Chile, Chile, Sept – Oct, 2009, for SPIE Optics & Photonics, Nanoscience and Engineering, Nanobiotronics, San Diego, SUA, 26 – 30 August, 2007; SPIE - Photonic West Conference, Organic Photonic Materials and Devices, San Jose, SUA, Ianuarie, 2008-2020 ; SPIE Optics & Photonics/Nanoscience and Engineering, Nanobiosystems: Processing, Characterization, and Applications, San Diego, SUA, August, 2008 - 2017; 7th ICEPOM (International Conference on Electronic Process in Organic Materials, Lvov, Ucraina, 26 – 30 mai 2008 SPIE Europe Security + Defence/Optical Materials in Defence Systems Technology 2008-2019
- **Member in Technical Organizing Committee NanoScience + Engineering**, San Diego 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
- **Member in organizing committee** for 7th International Conference on Polymers and Advanced Materials (ICFPAM), Emerging and Transferring New Technologies, Bucharest, 10 – 15 June 2003 (secretar) și pentru 10th ERPOS (International Conference on Electrical and Related Properties of Organic Solids and Polymers), Cargese, France, 10 – 15 July, 2005
- **Co-chair** – 11th ICFPAM, Pretoria, South Africa May 2011, 12th ICFPAM, Auckland, New Zealand, dec. 2013, 13th ICFPAM, Marrakesh, Morocco, 2015, 14th ICFPAM Daejeon, South Korea, 2016, 15th ICFPAM Penang, Malaysia, 2019
- **Co-chair** – 1st, 2nd, 3rd, 4th, 5th International Workshop on Nano and Bio-Photonics, 2011 - 2019
- **Chair** of First, Second, Third, Forth, Fifth, Sixth International Workshop on Advanced Nano- and Biomaterials and Their Device Applications, organized jointly with First French-Romanian Topical Meeting on Nano and Biomaterials - Poiana Brasov, sept. 2008, Sibiu, 16 – 20 sept. 2010, Timișoara, sept. 2012, Iași, sept. 2014, Constanța, sept 2016, Cluj, mai 2019
- **Chair** of Programme Committee of SPIE Optics & Photonics, Nanoscience and Engineering, Nanobiosystems: Processing, Characterization, and Applications, San Diego, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017

Technical Competences and abilities

- Writing quality control handbook for experimental laboratories of S.C. PROCELIA S.A. Braşov and National Consultancy Centre for Environmental Protection and Chemical and Petrochemical Industry (CNC);
- Quality Manager 2000 – 2004 Universitatea POLITEHNICA Bucureşti, CNC
- Writing work procedure for different physical chemical analysis from experimental laboratories of S.C. PROCELIA S.A. Braşov and C.N.C.;
- Organizing practical works for practical exams from National Contest of Chemistry C.D. Nenitescu, discipline Chemical Physics (2001, 2002, 2003)
- Organising practical works for Chemical Physics IIIrd year, Chemical Physics, BioChemical Physics section.
- Organising practical works for Advanced Spectral Methods, VIth year – Master Biocombustibili și Biotehnologii
- Organizing research laboratory: Laser – Characterization of materials with optical properties
- Organizing practical works Dating, authentication and expertise of art works

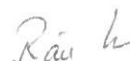
Other competencies and abilities

- **Fellow SPIE**, 2011
- **Laureat of European Descartes Award**, 2007, member in French team
- **CNATDCU (National Council for Attestation of University Degrees, Diplomas and Certificates) member from 2016 in Chemical Engineering Committee**
- **Scientific Reviewer** for: Molecular Crystal Liquid Crystal, Optical Materials, Nonlinear Optics & Quantum Optics, Journal of Materials Research Innovations, SPIE Proceedings, Optical Engineering, Journal of Energetic Materials, Physical Organic Chemistry, Dyes and Pigments, Biomedicines, Biomolecules, Optical Materials, Optik, Materials Chemistry and Physics, Organic Electronics, Materials, etc.
- **SPIE Member** (The International Society for Optical Engineering), **Member AFONL** (Asociatia Franco – Americano – Japoneza pentru promovarea opticii nonlineare), **Member SRCh** (Societatea Română de Chimie)
- Member of Editorial Board of Nonlinear Optics&Quantum Optics and Display Imaging Journal
- **Topical Editor** al revistei ISI Applied Optics (OSA) (2014 – 2020)
- Recognizing of research activities at University POLITEHNICA of Bucharest by highlighting in Laser Focus World Journal (septembrie 2008) By Dr. James Grote.
- More than 200 ISI and indexed papers
- Project director for 12 national projects and 4 international projects

ADDITIONAL INFORMATION

Publications	More than 200 ISI and indexed papers
Presentations	More than 90 key-note and invited lectures
Projects	Director for 12 national and 4 international projects
Conferences	Chair, co-chair and committee member for numerous conferences
Honours and awards	SPIE Fellow, 2011; Laureat of European Descartes Award , 2007, member in French team
Memberships	SPIE; Romanian Chemical Society
Citations	citations 1967; h index 22 (Scopus 26.07.2021)
Patents	A. Meghea, N. Radu, E. Marica, Ileana Rău , L. Sandru, "New fertilizers based on microbial mass": Patent no. RO 121557 Ileana Rau , F. Kajzar, A. Meghea, Optically tunable Fabry-Perot interferometer, Nr. A2012 00730; RO128436-A0, 2013-K35697; RO 128436-B1, 30.04.2015 – Patent awarded with Excellence Diploma and Gold Medal at International Salon PRO INVENT, ed. XII, 2014, Cluj-Napoca, Romania

July 2021



Selected list of papers

- Ileana Rău, A. Gonzalo, M. Valiente, *Arsenic removal from Aqueous Solutions by Iron (III) Loaded Chelating Resin*, Journal of Radioanalytical and Nuclear Chemistry, **246**, (3), (2000), p. 597-600;
- Ileana Rău, P. Amatyts, P.A. Chollet, F. Kajzar, C. Andraud, Y. Bretonnière, *Aggregation: A new mechanism of relaxation of polar order in electro – optic polymers*, Chem. Phys. Lett., **442**, (2007), p. 329 – 333;
- Ileana Rău, "On the Mechanisms of Relaxation in Electro-Optic Polymers", Mol. Cryst. Liq. Cryst. **485**, (2008), p. 114/[862] – 124/[872];
- D. Turcanu-Carutiu, Ileana Rău, A. Meghea, "Spectral and Chromatic Analysis in Art Work Authentication" Mol. Cryst. Liq. Cryst. **484**, (2008), p. 213/[579] – 237/[603];
- Ileana Rău, F. Kajzar, A. Humeau, J. Luc, B. Sahraoui, G. Boudebs, *Comparison of Z-scan and THG derived nonlinear index of refraction in selected organic solvents*, JOSAB, **25** (10), (2008), p. 1738 – 1747
- M. Moldoveanu, A. Meghea, R. Popescu, J. G. Grote, F. Kajzar, Ileana Rău, *On the Stability and Degradation of DNA Based Thin Films*, Mol. Cryst. Liq. Cryst., **523**, (2010) p. 182/[754]–190/[762]
- Ileana Rău, A. Tane, R. Zgarian, A. Meghea, J. G. Grote, F. Kajzar, *Stability of Selected Chromophores in Biopolymer Matrix*, Mol. Cryst. Liq. Cryst., **554:1**, (2012), p. 43 – 55
- I. Iosub, F. Kajzar, M. Makowska-Janusik, A. Meghea, A. Tane, Ileana Rău, *Electronic structure and optical properties of some anthocyanins extracted from grapes*, Optical Materials, **34** (10), DOI: 10.1016/j.optmat.2012.03.020, (2012) p. 1644 – 1650,
- Ileana Rău, J. G. Grote, F. Kajzar, A. Pawlicka, *DNA – novel nanomaterial for applications in photonics and in electronics*, Comptes Rendus de Physique, **13** (8), (2012), p. 853 – 864
- Ileana Rău, A. Szukalski, L. Sznitko, K. Palewska, A. Miniewicz, S. Bartkiewicz, B. Sahraoui, F. Kajzar, J. Mysliwiec *Amplified spontaneous emission of rhodamine 6G embedded in pure deoxyribonucleic acid*, Applied Physics Letters, **101** (17), (2012), article number 171113
- Ileana Rău, P. Amatyts, P.-A. Chollet, Francois Kajzar, Roberto Zamboni, "Conjugated Polymers Oriented Organic Thin Films For Nonlinear Optics" Mol. Cryst. Liq. Cryst., **446** (2006), p. 23 – 45
- Ileana Rău, J. Niziol, F. Kajzar, P.-A. Chollet, G. Brusatin, G. della Giustina, M. Guglielmi, R. Centore, M. E. van der Boom, "Novel Sol-Gel Systems For Application In Optical Signal Processing", Mol. Cryst. Liq. Cryst. **446** (2006), p. 141 – 150
- N. Mercier, A.L. Barres, M. Giffard, Ileana Rău, F. Kajzar, B. Sahraoui, "Conglomerate-to-True-Racemate Reversible Solid-State Transition in Crystals of an Organic Disulfide-Based Iodoplumbate", Angew. Chem. Int. Ed., **45** (2006), p. 2100 – 2103
- W. Bi, N. Louvain, N. Mercier, J. Luc, F. Kajzar, Ileana Rău, B. Sahraoui, "A switchable NLO organic-inorganic compound based on conformationally chiral disulfide molecules and B^(m)I₃ iodobismuthate networks", Adv. Mat., **20** (5), (2008), p. 1013 – 1017, doi:10.1002/adma.200701753
- Ileana Rău, F. Kajzar, "New insights into the relaxation of polar order in electro-optic polymers", Thin Solid Films, **516** (24), (2008), p. 8880 – 8885
- O. Krupka, A. El-ghayoury, Ileana Rău, B. Sahraoui, J. G. Grote, F. Kajzar, "NLO properties of functionalized DNA thin films", Thin Solid Films, **516** (24), (2008), p. 8932 - 8936
- R. Czaplicki, S. Dabos-Seignon, Ileana Rău, O. Krupka, B. Sahraoui, J. Niziol, M. Bednarz, J. Pielichowski, A. Meghea, M. Bakasse, "Photoinduced Gratings in Functionalized Azo-Carbazole Compounds in Picosecond Regime", Mol. Cryst. Liq. Cryst. **485**, (2008), p. 282/[1030] – 294/[1042]
- L. Favaretto, G. Barbarella, Ileana Rău, F. Kajzar, S. Caria, M. Murgia, R. Zamboni, *Efficient second harmonic generation from thin films of V-shaped benzo[b]thiophene based molecules*, Optics Express, **17** (4), (2009) p. 2557 – 2564
- Z. Essaidi, W. Bala, Ileana Rău, C. Meziere, P. Batail, B. Sahraoui, *Photoluminescence properties of 4,5-dimethyl-40,50 di(methylamido) tetrathiafulvalene thin film grown by thermal evaporation*, Optical Materials, **31**, (2009) p. 831 – 836
- M. Moldoveanu, A. Meghea, R. Popescu, J. G. Grote, F. Kajzar, Ileana Rău, *On the Stability and Degradation of DNA Based Thin Films*, Mol. Cryst. Liq. Cryst., **523**, (2010) p. 182/[754]–190/[762], 2010
- J. Niziol, M. Prato, C. Soombar, E. Vazquez, E. Gondek, Ileana Rău, F. Kajzar, *Photoluminescence and Electro-Optic Kerr Effect in Porphyrin Derivatives of C60*, Mol. Cryst. Liq. Cryst., **522**, (2010), p. 191/[491]–202/[502]
- R. Popescu, C. Pirvu, M. Moldoveanu, J. G. Grote, F. Kajzar, Ileana Rău, *Biopolymer Thin Films for Optoelectronics Applications*, Mol. Cryst. Liq. Cryst., **522**, (2010) p. 229/[529]–237/[537]
- M. Prato, C. Soombar, E. Vazquez, J. Niziol, E. Gondek, Ileana Rău, F. Kajzar, *Synthesis and Spectroscopic Properties of Porphyrin Derivatives of C60*, Mol. Cryst. Liq. Cryst., **521**, (2010), p. 253–264
- G. Pawlik, Ileana Rău, F. Kajzar, A. C. Mitus, *Second-harmonic generation in poled polymers: pre-poling history paradigm*, Optics Express, **18** (18), (2010), 18793 – 18804
- F.A. Nicolescu, V.V. Jerca, I. Dancus, A. Petris, T.V. Nicolescu, Ileana Rău, V.I. Vlad, D.M. Vuluga, D.S. Vasilescu *Synthesis and characterization of side-chain maleimide-styrene copolymers with new pendant azobenzene moieties*, Journal of Polymer Research, **2011**, **18** (5) pp. 1009-1016
- L. Sznitko, J. Mysliwiec, P. Karpinski, K. Palewska, K. Parafiniuk, Ileana Rău, F. Kajzar, A. Miniewicz, *Biopolymer based system doped with nonlinear optical dye as a medium for amplified spontaneous emission and lasing*, Appl. Phys. Lett. **99**, 031107 (2011)
- A. Pawlicka, F. Sentanin, A. Fimino, J. G. Grote, F. Kajzar, Ileana Rău, *Ionically conducting DNA-based membranes for electrochromic devices*, Synthetic Met. **161** (21-22), (2011), pp. 2329 – 2334
- M.E. Barbinta-Patrascu, C. Ungureanu, S.M. Iordache, I.R. Bunghez, N. Badea, Ileana Rău, *Green silver nanobioarchitectures with amplified antioxidant and antimicrobial properties* Journal of Materials Chemistry B, **2** (21) (2014), DOI: 10.1039/c4tb00262h, p. 3221-3231
- M. Makowska-Janusik, F. Kajzar, A. Miniewicz, L. Mydlova, Ileana Rău, *First Principle Calculations of the Electronic and Vibrational Properties of the 3-(1,1-Dicyanoethenyl)-1-phenyl-4,5-dihydro-1H-pyrazole Molecule*, J. Phys. Chem. A, (2015), **119** (8), pp 1347–1358
- T. Bazaru Rujoiu, A. Petris, V. I. Vlad, Ileana Rău, A.-M. Manea, F. Kajzar, *Lasing in DNA-CTMA doped with Rhodamine 610 in butanol*, Phys. Chem. Chem. Phys., (2015), **17** (19), pp. 13104 – 13111
- M.-L. Mircea, A.-M. Manea, F. Kajzar, Ileana Rău, *Tuning NLO Susceptibility in Functionalized DNA*, Adv. Optical Mater., **4**(2), (2016), pp. 271 – 275
- C. A. Lazar, F. Kajzar, M. Mihaly, C. Pirvu, A. R. Petcu, N. L. Olteanu, Ileana Rău, *DNA based materials doped with praseodymium (III) hydroxide nanoparticles*, Optical Materials, **56**, (2016), pp. 3-7
- N. V. Kamanina, Yu. A. Zubtcova, A. A. Kukharchik, C. Lazar, Ileana Rău, *Control of the IR-spectral shift via modification of the surface relief between the liquid crystal matrixes doped with the lanthanide nanoparticles and the solid substrate*, Optics Express, **24** (2), (2016), pp. A270-A275
- C. A. Lazăr, F. Kajzar, M. Mihaly, A. E. Rogozea, A. R. Petcu, N. L. Olteanu, Ileana Rău, *Novel Materials Based on DNA-CTMA and Lanthanide (Ce³⁺, Pr³⁺)*, Biopolymers, **105** (9), (2016), pp. 613 – 617
- G. T. Tihan, Ileana Rău, R. G. Zgarian, M. V. Ghica, *Collagen-based biomaterials for ibuprofen delivery*, C. R. Chimie, **19**, (2016), pp. 390 – 394
- C. A. Lazar, F. Kajzar, Ileana Rău, A.-M. Manea, *Fluorescence, optical absorption and third-order nonlinear optical properties of terbium (III) complex embedded into DNA-CTMA matrix*, Journal of Luminescence, **182**, (2017), pp. 59 – 64
- C.-C. Pădurețu, R. Isopescu, Ileana Rău, M.R. Apetroaei, V. Schröder, *Influence of the parameters of chitin deacetylation process on the chitosan obtained from crab shell waste*, Korean Journal of Chemical Engineering, 2019, **36**(11), pp. 1890-1899
- V. Schröder, Ileana Rău, N. Dobrin, C. Stefanov, C. V. Mihali, C.-C. Pădurețu, M. R. Apetroaei, *Micromorphological details and identification of chitinous wall structures in Rapana venosa (Gastropoda, Mollusca) egg capsules*, Scientific Reports, 2020, **10**, pp. 1 – 13, art. No. 14550
- D.-C. Ioan, Ileana Rău, M. G. Albu Kaya, N. Radu, M. Bostan, R. G. Zgarian, G. T. Tihan, C.-E. Dinu-Pirvu, A. Lupuliasa, M.-V. Ghica, *Ciprofloxacin-Collagen-Based Materials with Potential Oral Surgical Applications*, Polymers 2020, **12** (9), pp. 1 – 13, art. No. 1915