CURRICULUM VITAE

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Educatie

1994-1997 Studii doctorale la 'Karl-Franzens' University of Graz (Austria)
1987-1992 Facultatea de Fizica, Universitatea 'Alexandru I. Cuza', Iasi, Romania (specializarea Biofizica)
1982-1986 Liceul 'Nicu-Gane', Falticeni, Romania

Experienta profesionala

Martie 2012-Octombrie 2020
Director, Departmentul si Institutul de Cercetari Interdisciplinare, Universitatea 'Alexandru I. Cuza', Iasi, Romania
Iulie 2006 – Octombrie 2006,
Profesor invitat la University of Oxford (UK), in grupul coordonat de Prof. Hagan Bayley. Proiectul de cercetare in care am fost implicat a vizat studierea reactiilor chimice la nivel de 'singura molecula', prin metode electrice, cu ajutorul nanoreactoarelor proteice
Iulie 2001 – Iulie 2003
Cercetator stiintific la Texas A&M University (College Station, Texas, USA), in grupul coordonat de Prof. Hagan Bayley. Proiectele de cercetare in care am fost implicat au vizat studierea reactiilor chimice la nivel de 'singura molecula', prin metode electrice si optice, cu aplicatii in dezvoltarea de biosensori proteici.
August 1998 – Septembrie 1999
Cercetator stiintific la University of Queensland (Brisbane, Australia), intr-un grup interdisciplinar constituit intre 'Department of Physiology & Pharmacology' (Prof. David J. Adams) si 'Centre for Drug Design and Development' (Dr. Richard Lewis). Proiectele

de cercetare in care am fost implicat au vizat dezvoltarea si implementarea de tehnici de electrofiziologie celulara (e.g., 'two-electrode-voltage-clamp' pe oocite de *Xenopus laevis*, 'whole-cell recording' pe ganglioni dorsali) pentru caracterizarea biofizica si farmacologica a unor noi medicamente derivate din toxine marine, pentru tratarea durerii cronice.

Decembrie 1994 - Octombrie 1997

Studii doctorarale la 'Karl-Franzens' University (Graz, Austria), sub coordonarea principala a Prof. dr. Wolfgang Schreibmayer. In data de 27 Octombrie 1997 am prezentat in sedinta publica ('Karl-Franzens' University) teza de doctorat intitulata ***'Gating modulation of a G protein activated, inwardly rectifying potassium channel by a cytosolic applied peptide'***, pentru care am obtinut calificativul maxim ('*Mit Auszeichnung Bestanden'*)

Spetembrie 1994 - Noiembrie 1994

'Visiting scientist' la 'Karl-Franzens' University (Graz, Austria), in laboratorul coordonat de Prof. dr. Wolfgang Schreibmayer.

Ianuarie 1994 - Aprilie 1994

Am urmat cursul European ERASMUS Course in 'Medical Physics and Biomedical Engineering', la University of Patras (Patras, Grecia).

August 1992 - August 1993 si Mai 1994 - August 1994

Asistent de cercetare la 'Biological Research Center', Institute of Biophysics (Szeged, Hungary). Proiectul de cercetare in care am fost implicat a vizat studierea prin metode spectrale a fotociclului bacteriorodopsinei.

Publicatii stiintifice selectate, publicate in calitate de '*autor principal*' (sursa: Clarivate, 2022)

1. Alina Asandei, Loredana Mereuta, Ioana C. Bucataru, Yoonkyung Park, **Tudor Luchian**, A single-molecule insight into the ionic strength dependent, cationic peptide nucleic acids – oligonucleotides interactions, *Chemistry-An Asian Journal*, 2022, https://doi.org/10.1002/asia.202200261
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3. **Tudor Luchian**, Loredana Mereuta, Yoonkyung Park, Alina Asandei, Irina Schiopu, Single-molecule, hybridization-based strategies for short nucleic acids detection and recognition with nanopores, *Proteomics*, 2021, https://doi.org/10.1002/pmic.202100046
4. Alina Asandei, Loredana Mereuta, Irina Schiopu, Jonggwan Park, Chang Ho Seo, Yoonkyung Park, **Tudor Luchian**, Non-Receptor-Mediated Lipid Membrane Permeabilization by the SARS-CoV-2 Spike Protein S1 Subunit, *ACS Applied Materials & Interfaces*, 2020, 12, 50, 55649–55658
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Nanopore Approach, *Scientific Reports* 10, 11323 (2020). https://doi.org/10.1038/s41598-020-68258-x

6. Isabela S. Dragomir, Ioana C. Bucataru, Irina Schiopu, **Tudor Luchian**, Unzipping mechanism of free- and polyarginine-conjugated DNA-PNA duplexes, preconfined inside the α-hemolysin nanopore, *Analytical Chemistry*, 2020, in press, DOI: https://doi.org/10.1021/acs.analchem.0c00976
7. Su Jin Ko, Eunji Park, Alina Asandei, Jee-Young Choi, Seung-Chul Lee, Chang Ho Seo, **Tudor Luchian**, Yoonkyung Park, Bee venom-derived antimicrobial peptide melectin has broad-spectrum potency, cell selectivity, and salt-resistant properties, *Scientific Reports (Springer Nature)*, volume 10, Article number: 10145 (2020)
8. Alina Asandei, Giovanni Di Muccio, Irina Schiopu, Loredana Mereuta, Isabela S. Dragomir, Mauro Chinappi, **Tudor Luchian**, Nanopore-Based Protein Sequencing Using Biopores: Current Achievements and Open Challenges, *Small Methods*, 2020, 1900595, DOI: 10.1002/smtd.201900595
9. Jong-kook Lee, Loredana Mereuta, **Tudor Luchian**, Yoonkyung Park, Antimicrobial Peptide HPA3NT3-A2 Effectively Inhibits Biofilm Formation in Mice Infected with Drug-Resistant Bacteria, *Biomaterials Science*, 2019, 7(12), pp. 5068-5083
10. Loredana Mereuta, Alina Asandei, Irina Schiopu, Yoonkyung Park, **Tudor Luchian**, Nanopore-Assisted, Sequence-Specific Detection and Single-Molecule Hybridization Analysis of Short, Single-Stranded DNAs, *Analytical Chemistry*, 2019, 91, 13, 8630-8637
11. Alina Asandei, Loredana Mereuta, Jonggwan Park, Chang Ho Seo, Yoonkyung Park, **Tudor Luchian**, Non-Functionalized PNAs as Beacons for Nucleic Acids Detection in a Nanopore System, *ACS Sensors*, 2019, 4, 6, 1502-1507
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Generation 1 PAMAM Dendrimers Interaction with a Protein Nanopore**.** *Scientific Reports* 7, Article number: 6167 (2017), doi:10.1038/s41598-017-06435-1

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34. **Tudor Luchian**, Seong Ho Shin, Hagan Bayley, Single-molecule chemistry with spatially separated reactants, *Angewandte Chemie International Edition*, 42, 3766-3771 , 2003
35. **Tudor Luchian**, Seong Ho Shin, Hagan Bayley, Kinetics of a three-step reaction observed at the single-molecule level, *Angewandte Chemie International Edition* 42, 1925-1929, 2003 (**reviewed in C & En News, May 5, 2003**
36. Seong-Ho Shin, **Tudor Luchian**, Steve Cheley, Orit Braha, Hagan Bayley**,** Kinetics of a reversible covalent-bond-forming reaction observed at the single-molecule level, *Angewandte Chemie International Edition*, 41 (19): 3707-3709, 2002 (**reviewed in Nature –** science update**, 7 October 2003**)
37. **Tudor Luchian**, Nathan Dascal, Carmen Dessauer, Dieter Platzer, Norman Davidson, Henry Lester, Wolfgang Schreibmayer, A C-terminal peptide of the GIRK1 subunit directly blocks the G protein-activated K^+ channel (GIRK1) expressed in Xenopus oocytes, *J. Physiology (London*), 505.1, 13-22, 1997 (**reviewed in J. Physiology, 505.1, 1997**

Lucrari peer-reviewed in domeniul 'science-society'

1. Tudor Luchian, 'Balkan science: how to halt the brain drain', **Nature**, 2011, 470 (7334), 333-333
2. Tudor Luchian, 'Romanian funding cuts calls for more stringent criteria', **Nature**, 2009, 458, 1101

Patente aplicate si valorificate in tehnologii emergente:

Hagan Bayley**,** Seong-Ho Shin**, Tudor Luchian,** Steve Cheley, New system comprising a sensing device, a protein pore, a detection system and an ionic solution containing a reactive analyte capable of covalently bonding to the protein probe, useful for sensing a reactive analyte in a solution, Patent Number(s): WO2003095669-A; WO2003095669-A1; US2003215881-A1; AU2003245272-A1; EP1504114-A1 (**patent aplicat in realizarea si comercializarea dispozitivului portabil de secventiere genetica in timp real - https://nanoporetech.com/**)

Carti si capitole de carti*:*

1. Tudor Luchian **–** *'Electrofiziologie moleculara. Teorie si aplicatii', Sedcom-Libris Publishing House, Iasi, 2006* (ISBN: 973-670-154-9)
2. Hagan Bayley, Tudor Luchian, Seong-Ho Shin, Mackay Steffensen – *'Single-molecule covalent chemistry in a protein nanoreactor'***,** *Springer Series in Biophysics "Single Molecules and Nanotechnology" Rigler & Vogel eds., 2008 (*capitol*), 251-277*
3. Tudor Luchian – '*Functional nanopores in artificial membranes – it takes at least two to tango*', Advances in Micro- and Nanoengineering, 6, 42-53, 2004 (capitol)
4. Tudor Luchian – '*Introducere in biofizica moleculara si celulara'*, 'Alexandru I. Cuza' University Publishing House, Iasi, 2001

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