

CURRICULUM VITAE

Prenume, nume de familie: Tudor LUCHIAN

Data și locul nașterii: Februarie 26, 1968, Fălticeni, România

Poziție academică ocupată în prezent: Profesor (Departamentul de Fizică, Laboratorul de Biofizică și Fizică Medicală, Universitatea ‘Alexandru Ioan Cuza’, Iași, România), conducător de doctorat în domeniul ‘Fizică’ (am coordonat până în prezent opt doctoranzi, ce au obținut titlul de ‘doctor în Fizică’)

Adresa: Departamentul de Fizică, Laboratorul de Biofizică Moleculară și Fizică Medicală, Universitatea ‘Alexandru Ioan Cuza’, Iași, România, Blvd. Carol I, nr. 11, Iași, RO-700506, România

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Educație

1994-1997 Studii doctorale la ‘Karl-Franzens’ University of Graz (Austria)

1987-1992 Facultatea de Fizică, Universitatea ‘Alexandru Ioan Cuza’, Iași, România
(specializarea Biofizică)

1982-1986 Liceul ‘Nicu-Gane’, Fălticeni, România

Experiența profesională

Iulie 2006 – Octombrie 2006

Profesor invitat la University of Oxford (UK), în grupul coordonat de Prof. Hagan Bayley. Proiectul de cercetare în care am fost implicat a vizat studiarea reacțiilor chimice

la nivel de ‘singură moleculă’, prin metode electrice, cu ajutorul nanoreactoarelor proteice

Iulie 2001 – Iulie 2003

Cercetător științific la Texas A&M University (College Station, Texas, USA), în grupul coordonat de Prof. Hagan Bayley. Proiectele de cercetare în care am fost implicat au vizat studierea reacțiilor chimice la nivel de ‘singură moleculă’, prin metode electrice și optice, cu aplicații în dezvoltarea de biosenzori proteici.

August 1998 – Septembrie 1999

Cercetător științific la University of Queensland (Brisbane, Australia), într-un grup interdisciplinar constituit între ‘Department of Physiology & Pharmacology’ (Prof. David J. Adams) și ‘Centre for Drug Design and Development’ (Dr. Richard Lewis). Proiectele de cercetare în care am fost implicat au vizat dezvoltarea și implementarea de tehnici de electrofiziologie celulară (e.g., ‘two-electrode-voltage-clamp’ pe oocite de *Xenopus laevis*, ‘whole-cell recording’ pe ganglioni dorsali) pentru caracterizarea biofizică și farmacologică a unor noi medicamente derivate din toxine marine, pentru tratarea durerii cronice.

Decembrie 1994 - Octombrie 1997

Studii doctorale la ‘Karl-Franzens’ University (Graz, Austria), sub coordonarea principală a Prof. dr. Wolfgang Schreibmayer. În data de 27 Octombrie 1997 am prezentat în ședință publică (‘Karl-Franzens’ University) teza de doctorat intitulată ‘*Gating modulation of a G protein activated, inwardly rectifying potassium channel by a cytosolic applied peptide*’, pentru care am obținut calificativul maxim (‘*Mit Auszeichnung Bestanden*’)

Septembrie 1994 - Noiembrie 1994

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

Ianuarie 1994 - Aprilie 1994

Am urmat cursul European ERASMUS Course în ‘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 în care am fost implicat a vizat studierea prin metode spectrale a fotociclului bacteriorodopsinei.

10 lucrări reprezentative, publicate în calitate de ‘autor principal’:

1. Alina Asandei, Irina Schiopu, Mauro Chinappi, Chang Ho Seo, Yoonkyung Park, **Tudor Luchian**, Electroosmotic Trap Against the Electrophoretic Force Near a Protein Nanopore Reveals Peptide Dynamics During Capture and Translocation, *ACS Applied Materials & Interfaces*, 2016, 8 (20), pp 13166–13179 (IF=7.145)
2. Alina Asandei, Mauro Chinappi, Hee-Kyoung Kang, Chang Ho Seo, Loredana Mereuta, Yoonkyung Park, **Tudor Luchian**, Acidity-Mediated, Electrostatic Tuning of Asymmetrically Charged Peptides Interactions with Protein Nanopores, *ACS Applied Materials & Interfaces*, 2015, 7 (30), pp 16706–16714 (IF=7.145)
3. Jong-kook Lee, **Tudor Luchian**, Yoonkyung Park, Effect of Regular Exercise on Inflammation Induced by Drug-resistant Staphylococcus aureus 3089 in ICR mice, *Scientific Reports (Nature Publishing Group)*, 5, 16364; DOI: 10.1038/srep16364 (2015) – (highlighted by The New York Times, 2016). (IF=5.228)
4. Alina Asandei, Mauro Chinappi, Jong-kook Lee, Chang Ho Seo, Loredana Mereuta, Yoonkyung Park, **Tudor Luchian**, Placement of oppositely charged aminoacids at a polypeptide termini determines the voltage-controlled braking of polymer transport through nanometer-scale pores, *Scientific Reports (Nature Publishing Group)* 5, 10419; DOI: 10.1038/srep10419 (2015) (IF=5.228)
5. Loredana Mereuta, Alina Asandei, Chang Ho Seo, Yoonkyung Park, **Tudor Luchian**, Quantitative Understanding of pH- and Salt-Mediated Conformational Folding of Histidine-Containing, β -Hairpin-like Peptides, Through Single-Molecule Probing with Protein Nanopores, *ACS Applied Materials & Interfaces*, 2014, 6 (15), pp 13242–13256 (IF=7.145)

6. Loredana Mereuta, Mahua Roy, Alina Asandei, Jong Kook Lee, Yoonkyung Park, Ioan Andricioaei, **Tudor Luchian**, Slowing down single-molecule trafficking through a protein nanopore reveals intermediates for peptide translocation, *Scientific Reports (Nature Publishing Group)*, 2014, Jan 27;4:3885. DOI: 10.1038/srep03885. (IF=5.228)
7. Loredana Mereuta, Irina Schiopu, Alina Asandei, Yoonkyung Park, Kyung-Soo Hahn, **Tudor Luchian**, Protein nanopore-based, single-molecule exploration of copper binding to an antimicrobial-derived, histidine-containing chimera peptide, *Langmuir*, 2012, DOI: 10.1021/la303782d. (IF=3.993)
8. **Tudor Luchian**, Seong Ho Shin, Hagan Bayley, Single-molecule chemistry with spatially separated reactants, *Angewandte Chemie International Edition*, 42, 3766-3771, 2003 (IF=11.709)
9. **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 (highlighted by Chemical & Engineering News, American Chemical Society, May 5, 2003). (IF=11.709)
10. 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 (highlighted by Nature – science update, 7 October 2003) (IF=11.709)

Publicații ce vizează politica științei, selectate, peer-reviewed (sursa: Web of Science, Thomson Reuters, 2016)

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.
3. Tudor Luchian, **Rolul pierdut al științelor exacte și interdisciplinare în excelența intelectuală și economică a României, Pentru excelența în Știința**

**Românească, Editori: Petre T. Frangopol, Nicolae Zamfir, Tibor Braun,
Bucuresti Martie 26, 2008, Casa Cartii de Ştiinţă Cluj Napoca.**

Patente aplicate și valorificate în 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

Cărți și capitole de cărți

1. Tudor Luchian – *‘Electrofiziologie moleculară. Teorie și aplicații’*, Sedcom-Libris Publishing House, Iași, 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 în biofizica moleculară și celulară’*, ‘Alexandru Ioan Cuza’ University Publishing House, Iași, 2001

Prezentări orale selectate

1. *‘Nanoscopic interrogation of molecular interactions with protein nanopores’*, Invited talk at IRTG Soft Matter Science, University of Freiburg, Dec 10, 2014

2. Alina Asandei, Loredana Mereuta, Tudor Luchian, ‘*Single-molecule investigation of peptide conformational changes with a protein nanopore*’, ***Gordon Research Conferences frontiers of science, Membrane Protein Folding***, Bentley University, USA 6/21/2015 - 6/-26/2015
3. Sorana Iftemi, Irina Schiopu, and Tudor Luchian, ‘*Uni-molecular Investigation of metals-D,L-Histidines Interactions with a Protein Nanopore*’, ***EBSA 2015 10th European Biophysics Congress***, July 18 to 22, 2015- Dresden, Germany
4. ‘*Single-molecule electrophysiology investigation of selected pharmacological molecules interaction with protein pores and lipids*’, **Invited talk at the Institute of Physical and Theoretical Chemistry of the Rheinische Friedrich-Wilhelms Bonn University, 23-26 Nov. 2010**

Publicații științifice selectate, elaborate în calitate de ‘autor principal’ (sursa: Web of Science, Thomson Reuters, 2016) – lista extinsă

1. Alina Asandei, Irina Schiopu, Mauro Chinappi, Chang Ho Seo, Yoonkyung Park, **Tudor Luchian**, Electroosmotic Trap Against the Electrophoretic Force Near a Protein Nanopore Reveals Peptide Dynamics During Capture and Translocation, ***ACS Applied Materials & Interfaces***, 2016, 8(20), 13166–13179.
2. Jong-kook Lee, **Tudor Luchian**, Yoonkyung Park, Effect of Regular Exercise on Inflammation Induced by Drug-resistant Staphylococcus aureus 3089 in ICR mice, ***Scientific Reports (Nature Publishing Group)***, **5**, 16364; DOI: 10.1038/srep16364 (2015) – (***highlighted by The New York Times, 2016***).
3. Alina Asandei, Mauro Chinappi, Hee-Kyoung Kang, Chang Ho Seo, Loredana Mereuta, Yoonkyung Park, **Tudor Luchian**, Acidity-Mediated, Electrostatic Tuning of Asymmetrically Charged Peptides Interactions with Protein Nanopores, ***ACS Applied Materials & Interfaces***, 2015, 7(30), 16706–16714.
4. Alina Asandei, Mauro Chinappi, Jong-kook Lee, Chang Ho Seo, Loredana Mereuta, Yoonkyung Park, **Tudor Luchian**, Placement of oppositely charged aminoacids at a polypeptide termini determines the voltage-controlled braking of

- polymer transport through nanometer-scale pores, *Scientific Reports (Nature Publishing Group)* **5**, 10419; DOI: 10.1038/srep10419 (2015).
5. Irina Schiopu, Sorana Iftemi, **Tudor Luchian**, Nanopore Investigation of the Stereoselective Interactions between Cu²⁺ and D,L-Histidine Amino Acids Engineered into an Amyloidic Fragment Analogue, *Langmuir*, 2015, 31(1), 387-396.
 6. Loredana Mereuta, Alina Asandei, Chang Ho Seo, Yoonkyung Park, **Tudor Luchian**, Quantitative Understanding of pH- and Salt-Mediated Conformational Folding of Histidine-Containing, β -Hairpin-like Peptides, Through Single-Molecule Probing with Protein Nanopores, *ACS Applied Materials & Interfaces*, 2014, 6(15), 13242–13256.
 7. Sorana Iftemi, Marta De Zotti, Fernando Formaggio, Claudio Toniolo, Lorenzo Stella, **Tudor Luchian**, Electrophysiology investigation of trichogin GA IV activity in planar lipid membranes reveals ion channels of well-defined size, *Chemistry & Biodiversity*, 2014, 11(7), 1069-77. DOI: 10.1002/cbdv.201300334.
 8. Alina Asandei, Sorana Iftemi, Loredana Mereuta, Irina Schiopu, **Tudor Luchian**, Probing of various physiologically relevant metals - amyloid- β peptide interactions with a lipid membrane-immobilized protein nanopore, *Journal of Membrane Biology*, 2014, 247(6), 523-30. DOI: 10.1007/s00232-014-9662-z.
 9. Loredana Mereuta, Mahua Roy, Alina Asandei, Jong Kook Lee, Yoonkyung Park, Ioan Andricioaei, **Tudor Luchian**, Slowing down single-molecule trafficking through a protein nanopore reveals intermediates for peptide translocation, *Scientific Reports (Nature Publishing Group)*, 2014, 27;4:3885. DOI: 10.1038/srep03885.
 10. Alina Asandei, Irina Schiopu, Sorana Iftemi, Loredana Mereuta, **Tudor Luchian**, Investigation of Cu²⁺ binding to human and rat amyloid fragments A β (1-16) with a protein nanopore, *Langmuir*, 2013, 29 (50) , 15634-1564.
 11. Loredana Mereuta, Irina Schiopu, Alina Asandei, Yoonkyung Park, Kyung-Soo Hahm, **Tudor Luchian**, Protein nanopore-based, single-molecule exploration of copper binding to an antimicrobial-derived, histidine-containing chimera peptide, *Langmuir*, 2012, DOI: 10.1021/la303782d.

12. Irina Schiopu, Loredana Mereuta, Aurelia Apetrei, Yoonkyung Park, Kyung-Soo Hahm, **Tudor Luchian**, The role of thryptophan spatial arrangement for antimicrobial-derived, membrane-active peptides adsorption and activity, *Molecular BioSystems*, 2012, DOI:10.1039/c2mb25221j.
13. Alina Asandei, Loredana Mereuta, **Tudor Luchian**, The Kinetics of Ampicillin Complexation by γ -Cyclodextrins. A Single Molecule Approach, *The Journal of Physical Chemistry B*, 2011, 115 (33), 10173–10181.
14. Loredana Mereuta, Alina Asandei, **Tudor Luchian**, Meet me on the other side: trans-bilayer modulation of a model voltage-gated ion channel activity by membrane electrostatics asymmetry, *PLoS One*, 2011, 6(9): e25276. doi:10.1371/journal.pone.0025276.
15. Alina Asandei, Aurelia Apetrei, **Tudor Luchian**, Uni-molecular detection and quantification of selected β -lactam antibiotics with a hybrid α -haemolysin protein pore, *Journal of Molecular Recognition*, 2011, 24 (2), 199-207.
16. Alina Asandei, Aurelia Apetrei, Yoonkyung Park, Kyung-Soo Hahm, **Tudor Luchian**, Investigation of Single-Molecule Kinetics Mediated by Weak Hydrogen-Bonds Within a Biological Nanopore, *Langmuir*, 2011, 27 (1), 19-24.
17. Aurelia Apetrei, Alina Asandei, Yoonkyung Park, Kyung-Soo Hahm, Mathias Winterhalter, **Tudor Luchian**, Unimolecular study of the interaction between the outer membrane protein OmpF from E. coli and an analogue of the HP(2–20) antimicrobial peptide, *Journal of Bioenergetics and Biomembranes*, 2010, 42(2), pp. 173-180.
18. Aurelia Apetrei, Loredana Mereuta, **Tudor Luchian**, The RH 421 styryl dye induced, pore model-dependent modulation of antimicrobial peptides activity in reconstituted planar membranes, *Biochimica et Biophysica Acta – General Subjects*, 2009, 1790 (8), 809-816.
19. Loredana Mereuta, **Tudor Luchian**, Yoonkyung Park, Kyung-Soo Hahm, The modulatory role played by lipids unsaturation upon the membrane interaction and translocation of an analogue (HPA3) of the HP(2–20) antimicrobial peptide, *Journal of Bioenergetics and Biomembranes*, 2009, 41, 79-84.

20. Roxana Chiriac, **Tudor Luchian**, Single-molecule investigation of the influence played by lipid rafts on ion transport and dynamic features of the pore-forming alamethicin oligomer, *Journal of Membrane Biology*, 2008, 224, 45-54.
21. Alina Asandei, **Tudor Luchian**, Ion selectivity, transport properties and dynamics of amphotericin B channels studied over a wide range of acidity changes, 2008, *Colloids and Surfaces B: Biointerfaces*, 67, 99–106.
22. Loredana Mereuta, **Tudor Luchian**, Yoonkyung Park, Kyung-Soo Hahm, Single-molecule investigation of the interactions between reconstituted planar lipid membranes and an analogue of the HP(2–20) antimicrobial peptide, *Biochemical and Biophysical Research Communications*, 2008, 373(4), 467-472.
23. Alina Asandei, Loredana Mereuta, **Tudor Luchian**, Influence of membrane potentials upon reversible protonation of acidic residues from the OmpF eyelet, *Biophysical Chemistry*, 2008, 135, 32–40.
24. Roxana Chiriac, **Tudor Luchian**, pH modulation of transport properties of alamethicin oligomers inserted in zwitterionic-based artificial lipid membranes, *Biophysical Chemistry*, 130, 139-147, 2007.
25. **Tudor Luchian**, Loredana Mereuta, Phlorizin- and 6-Ketocholestanol-Mediated Antagonistic Modulation of Alamethicin Activity in Phospholipid Planar Membranes, *Langmuir*, 2006, 22, 8452-8457.
26. Loredana Mereuta, **Tudor Luchian**, A virtual instrumentation based protocol for the automated implementation of the inner field compensation method, *Central European Journal of Physics*, 2006, 4(3), 299-416.
27. **Tudor Luchian**, Loredana Mereuta, Selective transfer of energy through an alamethicin-doped artificial lipid membrane studied at discrete molecular level, *Bioelectrochemistry* 69 (2006) 94–98.
28. Loredana Mereuta, **Tudor Luchian**, How could a chirp be more effective than a louder clock – resonant transfer of energy between subthreshold excitation pulses and excitable tissues, *Journal of Cellular and Molecular Medicine*, 9:2, 446-456, 2005.

29. **Tudor Luchian**, An automated method for generating analogic signals that embody the Markov kinetics of model ionic channels, *Journal of Neuroscience Methods*, 147(1), 8-14, 2005.
30. **Tudor Luchian**, Seong Ho Shin, Hagan Bayley, Single-molecule chemistry with spatially separated reactants, *Angewandte Chemie International Edition*, 42, 3766-3771, 2003.
31. **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 (*highlighted by Chemical & Engineering News, American Chemical Society, May 5, 2003*).
32. 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 (*highlighted by Nature – science update, 7 October 2003*).
33. **Tudor Luchian**, The influence exerted by the β_3 subunit on MVIIA binding to neuronal N-type calcium channels, *BBA-Biomembranes*, 1512:2, 329-334, 2001.
34. **Tudor Luchian**, Wolfgang Schreibmayer, Ion permeation through a G protein-activated, inwardly rectifying K^+ channel, *BBA-Biomembranes*, 1368, 167-170, 1997.
35. **Tudor Luchian**, Nathan Dascal, Carmen Dessauer, Dieter Platzter, 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 (*highlighted by Journal of Physiology, 505.1, 1997*).
36. **Tudor Luchian**, Zsolt Tokaji, Zsolt Dancshazy, Actinic light density dependence of the O intermediate of the photocycle of bacteriorhodopsin, *FEBS Lett.* 386, 55-59, 1996.

Lucrări selectate prezentate la conferințe naționale și internaționale

1. Aurelia Apetrei, Loredana Mereuta, **Tudor Luchian**, Activity of antimicrobial peptides in reconstituted planar lipid membranes under the influence of membrane dipole moment modulatory agents, Nano-Romania 2009, June 2-5, 2009, pp. 22, *Iasi, Romania*
2. Loredana Mereuta, **Tudor Luchian**, The modulatory role played by lipids packing upon planar lipid membranes - HPA3 antimicrobial peptide interactions, Nano-Romania 2009, June 2-5, 2009, pp. 23, *Iasi, Romania*
3. Alina Asandei, **Tudor Luchian**, Effects of acidity changes upon transport properties and ionic selectivity of amphotericin B-induced channels in planar lipid membranes, Nano-Romania 2009, June 2-5, 2009, pp. 21, *Iasi, Romania*
4. **Tudor Luchian**, Aurelia Apetrei, Roles of lipids and electric heterogeneity of lipid membranes in shaping antimicrobial peptides activity, Nano-Romania 2009, June 2-5, 2009, pp. 19 (oral), *Iasi, Romania*
5. Tudor Luchian, Electric and spectroscopic investigations of the coupling between antimicrobial peptides and structural features of reconstituted planar lipid membranes, Frontiers in Macromolecular and Supramolecular Science, June 2-3, 2009, Iasi, Romania (oral)
6. Aurelia Apetrei, Loredana Mereuta, **Tudor Luchian**, The study of the modulatory effect of melittin insertion upon membrane surface and dipole potentials, IEEE ROMSC 2009, Iasi, Romania, p7
7. Alina Asandei, **Tudor Luchian**, Correlation between the electrical and mechanical properties of lipid membranes and the pore formation by magainin 2, IEEE ROMSC 2009, Iasi, Romania, p15
8. Loredana Mereuta, Tudor Luchian, The influence of lipid unsaturation upon the interaction between HPA3 antimicrobial peptide and reconstituted lipid membranes/ German Biophysical Society Meeting 2008, GBSM 2008 Jahrestagung der Deutschen Gesellschaft für Biophysik Berlin, September 28 - October 1

9. Alina Asandei , **Tudor Luchian**, The pH-dependence of the the interaction mechanism between single and multi-channels generated by amphotericin B (AmB) and artificial lipid membranes, German Biophysical Society Meeting 2008, GBSM 2008 Jahrestagung der Deutschen Gesellschaft für Biophysik Berlin, September 28 - October 1
10. Loredana Mereuta , **Tudor Luchian**, pH AND ELECTRIC - INDUCED MODULATION OF MAGAININ 2 ACTIVITY IN RECONSTITUTED LIPID MEMBRANES, The 8th International Conference on Physics of Advanced Materials (ICPAM-8) JUNE 04-07, 2008, IASI, ROMANIA
11. Alina Asandei, **Tudor Luchian**, SINGLE MOLECULE INVESTIGATION OF INTERACTION BETWEEN β -LACTAM ANTIBIOTIC AND THE OmpF PORIN, The 8th International Conference on Physics of Advanced Materials (ICPAM-8) JUNE 04-07, 2008, IASI, ROMANIA
12. Roxana Chiriac, **Tudor Luchian**, RAFTS-INDUCED MODULATION OF TRANSPORT AND KINETIC PROPERTIES OF CERTAIN ANTIMICROBIAL PEPTIDES, The 8th International Conference on Physics of Advanced Materials (ICPAM-8) JUNE 04-07, 2008, IASI, ROMANIA
13. Alina Asandei, Loredana Mereuță, Roxana Chiriac, **Tudor Luchian**, The Influence of Superficial Charge and Ionic Strength Upon The Interaction Between B-Lactam Antibiotics and Ompf Porins, The Annual International Conference of the Romanian Society of Biochemistry and Molecular Biology, BUCUREȘTI , 29 – 30 May 2008
14. Roxana Chiriac, Alina Asandei, Loredana Mereuță, **Tudor Luchian**, Rafts-Induced Modulation of Transport and Kinetic Properties of Certain Antimicrobial Peptides, The Annual International Conference of the Romanian Society of Biochemistry and Molecular Biology, BUCUREȘTI , 29 – 30 May 2008
15. Loredana Mereuță, Alina Asandei, **Tudor Luchian**, Influence of Membrane Electrostatics Upon Reversible Protonation Reactions Taking Place on The Constriction Region of The Ompf Porin, The Annual International Conference of the Romanian Society of Biochemistry and Molecular Biology, BUCUREȘTI , 29 – 30 May 2008

16. Roxana Chiriac, Alina Asandei, Loredana Mereuta, **Tudor Luchian**, ‘pH modulation of ion transport through alamethicin channels formed in phosphatidylcholine artificial membranes’, Conference of the Romanian Society of Pure and Applied Biophysics (**RSPAB**), IXth edition, with international participation, 2007, Bucharest, Romania
17. **Tudor Luchian**, ‘Complementary interactions between the membrane dipole potential and protein pores inserted in artificial lipid bilayers’, Conference of the Romanian Society of Pure and Applied Biophysics (**RSPAB**), IXth edition, with international participation, 2007, Bucharest, Romania
18. **Tudor Luchian**, ‘Activity modulation of certain ion-pore forming proteins by electric properties of artificial lipid membranes’, IEEE ROMSC 2007 (fourth edition) May 26-29, 2007, Iasi, Romania
19. Roxana Chiriac and Tudor Luchian , Rafts-induced modulation of transport and kinetic activity of alamethicin in artificial lipid membranes, International conference on fundamental and applied research in physics, Iasi, October, 2007
20. Loredana Mereuta and Tudor Luchian, Membrane dipole potential-induced modulation of current fluctuations through the OmpF porin, International conference on fundamental and applied research in physics, Iasi, October, 2007
21. Loredana Mereuta, **Tudor Luchian**, ‘Dipole moment-induced modulation of ion channels activity in phospholipid planar membranes’, The 5th International Conference on Global Research and Education, 25-28 September 2006, Iasi, Inter-Academia 2006
22. Loredana Mereuta, **Tudor Luchian**, ‘Electrical Coupling Between La³⁺ Ions and Alamethicin Insertion into Artificial Lipid Membranes’, International Conference on Fundamental and Applied Research in Physics FARPhys , Iasi, 26-29 October 2005
23. Loredana Mereuta, Catalin Petrea, Adi Cernescu, **Tudor Luchian**, ‘Compound action potential alterations induced by heavy metals on the nerve-striate muscle system, monitored via extracellular measurements’, 1st International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld-2005), March 15-18th 2005, Badajoz, Spain

24. Adrian Cernescu, Florin Pintilie, Răzvan Guțu, **Tudor Luchian**, ‘Diffusion processes at the interface of two liquids under gradients of concentration and diffusion constants’, The 5th International Conference on Biological Physics ICBP 2004, Gothenburg, August 23 - 27, 2004, A03-117
25. **Tudor Luchian**, ‘*Single-molecule study of calcium effects on alamethicin translocation through artificial biomembranes*’, The 5th International Conference on Biological Physics ICBP 2004 Gothenburg, August 23 - 27, 2004, A01-020
26. Seong-Ho Shin, **Tudor Luchian**, Hagan Bayley – ‘*Single-molecule covalent chemistry with spatially separated reactants*’, Elucidating biomolecular networks by single-molecule technologies, Monte Verita, Ascona, Switzerland, pp. 98, 2003
27. Seong-Ho Shin, **Tudor Luchian**, Sandra Loudwig, Hagan Bayley – ‘*Kinetics of photoinduced reactions at the single molecule level*’, Elucidating biomolecular networks by single-molecule technologies, Monte Verita, Ascona, Switzerland, pp. 83, 2003
28. Shin Seong-Ho, **Tudor Luchian**, Cheley Steve, Braha Orit, Bayley Hagan – ‘*Reversible covalent chemistry studied in a protein-based nanoreactor at the single molecule level*’, Lost Pines Conference, UT M.D. Anderson Science Park, Smithville, Texas, October 25-27 2002
29. Catalin Pavel, Bogdan Banciu, **Tudor Luchian** - ‘*The vectorial effect of exogenous electric fields on excitable membranes*’, The 12-th BIOCHEMICAL BIOPHYSICAL BALKAN DAY "Molecular Biosciences in the PostGenomic Era" May, 10th-13th, Bucharest, 2001
30. **Tudor Luchian** – ‘*Peculiar voltage-dependence processes at the interaction between N-type Ca^{2+} channels and synthetic conopeptides*’, Fourth General Conference of the Balkan Physical Union, Veliko Turnovo, 16P-016, 2000
31. **Tudor Luchian**, Richard J. Lewis, David J. Adams – ‘*Modulatory effects of the α_{11} subunit on α -conotoxin binding to neuronal N-type calcium channels*’, Proceedings of the Australian Physiological and Pharmacological Society, Newcastle (Australia), pp. 95, 1999

32. **Tudor Luchian**, Wolfgang Schreibmayer - '*Block of a G-protein activated potassium channel from rat atrium by cytosolic applied peptides*', Annual Meeting of the Austrian Neuroscience Association, Graz (Austria), pp. 100, 1995
33. **Tudor Luchian**, Tokaji Zsolt, Dancshazy Zsolt - '*Do both forms of M intermediate form O intermediate ?*', The 11th International Biophysics Congress, Budapest (Hungary), 1993

Proiecte științifice implementate în UAIC, coordonate în calitate de ‘Principal Investigator’-PI

1. '*Nanoscale approach towards studying couplings between biomembranes, bacterial toxins and proteins with roles in drug penetration*', 2006, CEEX-Modul I (CERES)
2. '*Integrated laboratory of virtual instrumentation in biophysics*', National Instruments (Texas, Austin, USA), 2006
3. '*Molecular characterization of action mechanisms of antimicrobial peptides and de novo prediction of structures with enhanced antimicrobial potential*', 2007, PN II – CNMP
4. '*Elucidation of mechanisms of interaction of selected cytotoxic peptides with tumor cells, and optimization of anti-tumoral properties of such peptides*', 2008, PN II – CNMP
5. '*Ion sensing and separation through modified cyclic peptides, cyclodextrins and protein pores*', PN-II-ID-PCCE-2011-2-0027, 2012
6. '*Rational design and generation of synthetic, short antimicrobial peptides. Linking structure to function*', PN-II-PT-PCCA-2011-3.1-0595, 2012
7. '*Design and development of therapeutic AMP's against epidemic superbugs*', National Research Foundation of Korea (NRF), Global Research Laboratory Program, 2015 (co-PI, Romania)

Suma totală gestionată în cadrul acestor proiecte, cu aportul laboratorului pe care-l coordonez (<http://www.phys.uaic.ro/bio/>), a fost mai mare de patru milioane de euro.

Actual, infrastructura obținută cu sprijinul acestor proiecte, este utilizată și pentru beneficiul studenților masternazi/doctoranzi, pentru elaborarea și implementarea unor activități de cercetare specifice în cadrul ‘Laboratorului de Biofizică Moleculară și Fizică Medicală (<http://biofizicafizicamedicala.wordpress.com/home/>; <https://erris.gov.ro/MOLECULAR-BIOPHYSICS-AND-MED;>), *Universitatea ‘Alexandru Ioan Cuza’, Iași*

Domenii de interes științific

1. Investigarea moleculară a interacțiunilor dintre peptide antimicrobiene și amiloidice, și sisteme lipidice biomimetice
2. ‘Single-molecule chemistry’ și ‘stochasting sensing’ cu implicarea nanoporiilor proteici
3. Studierea interacțiunilor dintre biomolecule și nanopori proteici. ‘Nanoscale biophysics’.

Premii

Alături de membrii colectivului meu, am obținut:

- Premiul ‘Ștefan Procopiu’, Academia Română, 2012
- Premiul I la secțiunea ‘Cercetătorul anului’, Gala Premiilor în Educație – 2011 (Fundația ‘Dinu Patriciu’)
- Premiul ‘Gheorghe Benga’ pentru anul 2008, acordat de UMF-Iuliu Hațieganu, Cluj-Napoca
- Premiul I pentru Excelența de Top în Cercetare Științifică 2008, din partea Autorității Naționale pentru Cercetare Științifică, în calitate de membru al centrului de excelență CARPATH (Universitatea ‘Alexandru I. Cuza’, Iași)
- Laboratorul pe care-l coordonez a fost recenzat într-un articol care a apărut în ‘**Science Careers, from the journal ‘Science’, ‘In Person: A Dream Lab in Romania’,** at

http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2009_12_11/caredit.a0900153

Actiuni științifice complementare

- Am înființat și dotat material, exclusiv din proiecte științifice câștigate independent în competiții naționale și internaționale, **Laboratorul de Biofizică Moleculară și Fizică Medicală** (<http://biofizicafizicamedicala.wordpress.com/home/>; [https://erris.gov.ro/MOLECULAR-BIOPHYSICS-AND-MED](https://erris.gov.ro/MOLECULAR-BIOPHYSICS-AND-MED;)); **Universitatea ‘Alexandru Ioan Cuza’, Iași**
- Evaluator științific pentru programe de cercetare națională și internațională (UEFISCDI, INTAS – Belgium, FP7/EVAL-INCO, National Science Foundation-USA, Austrian Science Fund (FWF))
- Referent științific pentru jurnale de prestigiu din domeniul biofizicii, nano-științelor și bio-științelor (e.g., Nature Chemistry, ACS Nano, Langmuir)

Activități academice selectate, ce au vizat ‘politica științei și educației’

- Membru în ‘**Comisia Prezidențială Pentru Analiza și Elaborarea Politicilor din Domeniile Educației**’, 2007
- Membru în ‘**Consiliul Național al Cercetării Științifice**’ din România (CNCS), 2011
- Membru în ‘**Consiliul Național de Atestare a Titlurilor, Diplomelor și Certificatelor Universitare**’ – Comisia de Fizică, 2011

Profesor Universitar Dr. Tudor LUCHIAN

August 2016