

## *CURRICULUM VITAE*



### 1/ Personal data

**Name:** MUTIHAC

**First name:** LUCIA

### 2/ Academic degrees

1974, B.Sc. in Chemistry, University of Bucharest, Department of Chemistry, Bucharest, Romania;

1975, M.Sc. in Analytical Chemistry, University "Politehnica" Bucharest, Department of Chemistry, Bucharest, Romania;

1977, March 30 - July 30, University "Babeş-Bolyai", Cluj-Napoca, Romania, field of specialization:  
*Analytical Chemistry and Automated Analysis in Industrial Processes.*

1990, Ph.D. in Chemistry, Institute of Physical Chemistry, Romanian Academy, Bucharest, title of dissertation: *Separation of Amino Acids by Macrocyclic Ligands through Liquid Membranes*, supervisor Prof. Dr. C. Luca.

### 3/ Positions held

September 1975 – September 1978: *Chemist*, Center of Chemical Research, Rm. Vâlcea, Romania.

September 1978 – May 1989: *Chemist Researcher*, Institute of Physical Chemistry, Romanian Academy, Bucharest, Romania.

May 1989 – September 1991: *Senior Researcher*, Institute of Physical Chemistry, Romanian Academy, Bucharest, Romania.

September 1989 – September 1991: *Professor Assistant*, University of Bucharest, Faculty of Chemistry, Department of Analytical Chemistry, Bucharest, Romania.

September 1991 – October 1997: *Lecturer, Dr.*, University of Bucharest, Faculty of Chemistry, Department of Analytical Chemistry, Bucharest, Romania.

October 1997 – October 2000: *Associate Professor, Dr.*, University of Bucharest, Faculty of Chemistry, Department of Analytical Chemistry, Bucharest, Romania.

October 2000 – on: *Full Professor, Dr., doctorate supervisor*, University of Bucharest, Faculty of Chemistry, Department of Analytical Chemistry, Bucharest, Romania.

September 2016 - retired

### 4/ University courses in charge

- Separation Methods and Trace Analysis (licence); Chemometrics (master); Analytical Biochemistry (licence); Separation Methods in Biochemistry (licence); Membrane Methods in Analytical Chemistry (licence).

### 5/ Other duties

- Students' supervisor for licence and master studies; Research work carried out jointly on contract basis, in national and international research teams consisting of researchers, PhD students, and Master students.

### 6/ Fields of research

- Analytical and bioanalytical applications of supramolecular chemistry; Molecular recognition and transport through liquid membranes; Separation methods and spectrometric methods; Chemometrics in analytical chemistry.

#### 7/ **Membership and activities in professional associations**

1986 – 1992: **Executive Secretary** of the Romanian journals in Chemistry, Publishing House of the Romanian Academy:

*Revue Roumaine de Chimie*;

*Roumanian Chemical Reviews* (discontinued).

1991 – on, member of the **Romanian Society of Analytical Chemistry**.

1992 – on, member of the **Romanian Society of Chemistry**.

1992 – on, member of the **European Membrane Society**.

2000 – on, member of the **American Chemical Society**.

**Coordinator** for Romania of the **Global Supramolecular Chemistry Network**.

**Member of the International Organizing Committee** of the **1st International Conference on Supramolecular Science & Technology**, Poland, Zakopane Sept. 23 – Oct. 3, 1998.

**Member of the International Organizing Committee** of the **2nd International Conference on Supramolecular Science & Technology**, Leuven, Belgium, Sept. 10 – 14, 2000.

**Co-Secretary** of the **7th International Symposium KAC' 2001 on Kinetics in Analytical Chemistry**, September 26 – 29, 2001, Bucharest, Romania.

**Member of Scientific Committee, NOMARES, June 18-19, 2010, București.**

**Membru of International Advisory Board, ICSNA 2012** (International Conference on Supramolecules and Nanomaterials-Research and Applications, **February 6-8, 2012, Gujarat, India;**

**Member of International Scientific Board, RICCE 18, September 4, Sinaia, 2013;**

**Member of Scientific Committee, NOMARES, 1-3 Octobre 2014, Căciulata, Vâlcea;**

**Member of Scientific Committee, NOMARES, 28-31 August 2016, Iasi.**

**Member of Scientific Committee, NOMARES, 24-26 Mai 2018, Constanța.**

**Member of Organizing Board, RO-ICAC - Analytical Chemistry for a better Life, Bucharest, Romania, 1-3 Septembrie, 2018.**

**Referee for assesment of PhD thesis (national and international).**

**Editorial Board Member: Journal of Analytical & Bioanalytical Technique.**

#### 8/ **Fellowships and Grants**

- 1990 Institute of Analytical Chemistry, Hungary Science Academy, Budapest, Hungary, for the project: *Ion electrode selective and transport through membrane* (**Academic exchanges**).
- July 12 – October 29, 1993, **Research Fellowship** for the project: *Interactions between Macrocyclic and Macrobicyclic Hosts and Amino Acids and Other Organic Guests, Studied by Calorimetry, Potentiometry, and Conductometry*, granted by the **European Communities** in the framework of the **Cooperation in Science and Technology with Central and Eastern European Countries (COST)**, Contract No. ERB-CIPA-CT-93-0643, DTNW-Universität Duisburg, Germany.
- July 18 – 29, 1994, participation in **TEMPUS** Joint European Project No. JEP 4720 **Regional Courses in Membrane Processes, Module 2**, Slovak Technical University, Department of Chemical and Biochemical Engineering, Bratislava, Slovakia.
- February 1995 – September 1997, **NATO Collaborative Research Grant, SRG 941403** for the project: *Interactions between Unprotonated Amines and Polyethers, Crown Ethers, and Cryptands*, DTNW-Universität Duisburg, Germany.
- May – August 1996, **TEMPUS, IMG-RO-2052, Organization of membrane education on the curricula of chemist and chem. Engineering**, University of Calabria, Department of Chemistry and Institute of Membranes and Chemical Reactors CNR, 87030 Arcavacata di Rende (CS), Italy, Prof. Enrico Drioli.
- **XV th Annual Summer School, Membrane processes in water and wastewater treatment**, Toulouse, France, July 6 – 10, 1998.

- 1999 – 2000, **NATO Collaborative Linkage Grant CLG 974819: Enantiomeric Separation of Some Amino Acids and Peptide Compounds by Chiral Receptors**, DTNW-Universität Duisburg, Germany.
- 1999 – 2000 **NATO Science Programme, Cooperative Science and Technology Sub-Programme: Computer Networking Supplement**, CNS 976039, DTNW-Universität Duisburg, Germany.
- 2001 – 2002 **NATO Collaborative Linkage Grant CLG- 977861: Selective complexation and separation of some peptide compounds by water-soluble calixarenes**, 1 January 2001-31 December 2002, DTNW-Universität Duisburg, Germany.
- July 1, 2003 – August 31, 2003 **Deutscher Akademischer Austauschdienst (DAAD)**, Universität Duisburg-Essen, Germany.
- January 2003 – 2004, **NATO Collaborative Linkage Grant CLG-979790: Peptide Recognition by Cyclodextrins in aqueous solutions**, Universität Duisburg-Essen, Germany.

## 9/ Publications

Number of scientific papers published in refereed journals: **135 (110 ISI indexed)**;  
Number of oral communications and posters presented to scientific meetings > **155**;  
Number of published scientific books: **8**;  
Number of chapter books: **5**;  
Number of patents: **1**;  
Number of scientific national projects: **62**;  
Number of scientific international projects: **6**.  
*h*-index = **23**, Sum of Times Cited = **2129**

## 10/ Invited lectures (selective):

- Physicochemical characterization of the complexation of peptides by macrocyclic receptors. **2<sup>nd</sup> International Conference on Supramolecular Science & Technology**, Belgium, **Leuven**, 10-14 September, 2000.
- Aspects of Peptide Separation through Liquid Membranes. **3<sup>rd</sup> European Congress of Chemical Engineering**, **Nürnberg**, Germany, June 2001.
- *Recognition and transport of amino acids and peptides by synthetic receptors*. **10<sup>th</sup> International Conference on Calixarenes**, Korea University, **Seoul**, S. Korea, IL6, July 13 – 16, 2009.
- *Liquid membranes in separation of relevant biological species*. Systems membranes-complex roadmaps toward functional devices and coupled processes. **Membrane Materials and Technologies. XXVII Summer School**, European Membrane Society, **Bucharest**, June 14 – 19, 2010.
- *Cucurbit[n]urils in molecular recognition of small biomolecules*. **2<sup>nd</sup> International Conference on Cucurbiturils (ICCB 2011)**, University of **Cambridge, UK**, June 29 July 2, 2011.
- *Calix[n]arenes and Cucurbit[n]urils in molecular recognition of biomolecules* **WORKSHOP** - Honorary Symposium Constantin LUCA - "pH on Membrane Materials and Processes" **Sinaia**, Romania, 7-10 September, 2011.
- *Binding and transport of calixarene-biomolecule supramolecular complexes* **18<sup>th</sup> Romanian International Conference on Chemistry and Chemical Engineering (RICCCE 18)** **Sinaia** 4-7 September, 2013, Romania ([www.ricccce18.upb.ro](http://www.ricccce18.upb.ro)).
- *Functionalized calixarenes used in bioanalytical applications* **2<sup>nd</sup> International Conference on analytical chemistry – Analytical Chemistry for a better Life**, Valahia University of **Târgoviște**, Romania, 17-21 September, 2014.
- *Molecular recognition of small biomolecules by calixarenes* L'atelier: Nouveaux matériaux par la reconnaissance électrochimique des minéraux et des espèces biologiques "NOMARES", **Căciulata**, Vâlcea, Romania, October 1-3, 2014.
- *Advances in supramolecular analytical chemistry using cucurbit(n)urils and their derivatives* **4<sup>th</sup> International Conference on analytical chemistry- Analytical Chemistry for a better Life**,

Bucharest, Romania, 1-3 Septembrie, 2018.

## 11/ Invited chapters in scientific text books

### 1. Extraction and Transport

Lucia Mutihac

In: **Comprehensive Supramolecular Chemistry II**, Vol 2, (J. L. Atwood, Ed.) pp. 369-379, 2017, Oxford: Elsevier. ISBN: 9780128031988.

### 2. Thermodynamic Aspects of Complex Formation between Amino Acids and Peptides with Macrocyclic

#### Ligands

H.-J. Buschmann and L. Mutihac

#### Thermodynamic of Amino Acid and Protein Solutions

Research Signpost/Transworld Network, Biological Science

(W. Kunz and J. Tsurko, Eds.) 2010, ISBN: 978-81-7895-473-8, pp. 151-180.

### 3. Liquid Membranes in Separation of Relevant Biological Species

Lucia Mutihac

#### Systems Membranes-Complex Roadmaps toward Functional Devices and Coupled Processes

(M. Barboiu and G. Nechifor, Eds.), Printech, ISBN 978-606-523-526-9, Bucharest, 2010, pp. 241-265.

XXVII Summer School, European Membrane Society, Bucharest, 14-19 June, 2010.

### 4. Cyclodextrins Involved in Separation of Amino Acids by Liquid Membranes

A. D. Stancu, M. Ceausescu, L. Kim, E. Diacu, L. Mutihac

#### Thrends in Membranology

(S. I. Voicu and G. Nechifor, Eds.), Printech, ISBN 978-606-521-525-2, Bucharest, 2010, pp.77-81.

XXVII Summer School, European Membrane Society, 14-19 June, 2010, Bucharest

### 5. Amino Acid Separation through Liquid Membranes

L. Mutihac and I. Patroescu

#### Recents Progres en Genie de Procedes

Ed. Groupe Francaise de genie des procedes, Paris, 1992, vol. 6, pp. 431-435.

## 12/ Books

### 1. ADVANCED DATA ANALYSIS IN CHEMOMETRICS (in English)

L. Mutihac, R. Mutihac

Editura Universității din București, ISBN 978-973-737-585-8, București, 2008, 400 pp.

### 2. APLICAȚII ANALITICE ALE RECEPTORILOR MACROCICLICI

E. Diacu, L. Mutihac

Editura PRINTECH, București, ISBN 978-973-718-450-4, 2006, 138 pp.

### 3. FUNDAMENTALS OF ANALYTICAL BIOCHEMISTRY (in English)

L. Mutihac

Editura Universității din București, București, ISBN 973-737091, 2005, 194 pp.

### 4. ELEMENTE FUNDAMENTALE DE CHEMOMETRIE

L. Mutihac, V. David

Editura Universității din București, ISBN 973-575-917-9, București, 2004, 198 pp.

### 5. CHEMOMETRIE, PRINCIPII ȘI APLICAȚII ÎN CHIMIA ANALITICĂ

C. Bala, L. Mutihac

Editura Universității din București, ISBN 973-575-437-1, București, 2000, 140 pp.

### 6. SEPARAREA COMPUȘILOR CHIMICI ȘI BIOLOGICI PRIN MEMBRANE ȘI PROCESE MEMBRANARE

L. Mutihac, C. Bala

Editura Universității din București, ISBN 973-575-301-4, București 1999, 131 pp.

### 7. MECANISME DE TRANSPORT PRIN MEMBRANE LICHIDE

C. Luca, L. Mutihac, R. Mutihac, A. M. Josceanu

Editura Academiei Române, ISBN 973-27-0596-5, București, 1998, 236 pp.

## 8. CHEMOMETRIE

L. Mutihac, V. David

Editura Universității din București, ISBN 973-575-085-6, București, 1997, 188 pp.

### Patent

#### 1. Patent No. 89640/30.01.1986

*Procedeu de stabilizare a guaiazulenei din soluțiile de produse farmaceutice fotooxidabile (Method of Guajazulene Stabilization from Photooxidable Pharmaceutical Solutions)*

T. Constantinescu, L. Mutihac, E. Negoescu, T. Marinică, M. Gheorghiu, M. Rogoșcă

### 13/ Articles (selective) and book reviews

*A brief overview on supramolecular analytical chemistry of cucurbit[n]urils and hemicucurbit[n]urils*, R.-C. Mutihac, A. A. Bunaciu, H.-J. Buschmann, L. Mutihac, **J. Incl. Phenom. Macrocycl. Chem.** 2020, <https://doi.org/10.1007/s10847-020-01019-5>. *Book Review: Monographs in Supramolecular Chemistry No 15: Polyrotaxane and Slide-Ring Materials* by Kohzo Ito, Kazuaki Kato and Koichi Mayumi, Royal Society of Chemistry, Cambridge, UK, 2017, [www.rsc.org/books](http://www.rsc.org/books) L. Mutihac; **J. Incl. Phenom. Macrocycl. Chem.** 88 : 259-260, 2017. *Hemicucurbiturils as receptors in extraction and transport of some amino acids* E.I. Cucolea, H.-J. Buschmann, L. Mutihac, **Supramol. Chem.** 28: 727-732, 2016. *Interactions of cucurbit[7]uril and  $\beta$ -Cyclodextrin with some nucleobases* E.I. Cucolea, C. Tablet, H.-J. Buschmann, L. Mutihac, **J. Incl. Phenom. Macrocycl. Chem.** 83: 103-110, 2015, *Book Review: Supramolecular Systems in Biomedical Fields, Ed. H.-J. Schneider*, RSC Publishing, Cambridge, UK, 2014, [www.rsc.org/books](http://www.rsc.org/books), L. Mutihac, **J. Incl. Phenom. Macrocycl. Chem.** 80: 187-188, 2014. *Anion influence on extraction and transport of amino acid methyl esters by functionalized calix[4]arene*, L. Mutihac, I. Varduca Enache, E. Diacu, R.-C. Mutihac, J. Vicens, **Supramol. Chem.** 26: 521-525, 2014. *Host-guest sensing by calixarenes on the surfaces*, H. J. Kim, M. H. Lee, L. Mutihac, J. Vicens, J. S. Kim, **Chem. Soc. Rev.** 41: 1173-1190, 2012. *Recognition of amino acids by functionalized calixarenes*, L. Mutihac, J. H. Lee, J. S. Kim, J. Vicens, **Chem. Soc. Rev.** 40: 2777-2796, 2011. *Chemiluminescence of 5-(azo-para-phenylene-N-aza-15-crown-5)-phthalhydrazide*, R. D. Baratoiu, L. Mutihac, M. Vasilescu, M. Voicescu, A. Latus, G. Ionita, A. Beteringhe, T. Constantinescu, A. T. Balaban, **Arkivoc** 2009 (xiii), 300-310. *Extraction and transport behavior of aromatic amino acids by modified cyclodextrin*, L. Kim, A.-D. Stancu, E. Diacu, H.-J. Buschmann, L. Mutihac, **Supramol. Chem.** 21(1&2): 131-134, 2009. *The formation of alkali and alkaline earth cation complexes with cucurbit[6]uril in aqueous solution: A critical survey of old and new results*, H.-J. Buschmann, E. Cleve, L. Mutihac, E. Schollmeyer, **J. Incl. Phenom. Macrocycl. Chem.** *The formation of homogeneous and heterogeneous 2:1-complexes between dialkyl- and diarylammonium ions and  $\alpha$ -cyclodextrin and cucurbit[6]uril in aqueous formic acid*, H.-J. Buschmann, L. Mutihac, E. Schollmeyer, **Thermochim. Acta** 495: 28-32, 2009. *Mining in chemometrics – Review* L. Mutihac, R. Mutihac, **Anal. Chim. Acta.** 612: 1-18, 2008. *Considerations on MS/MS detection of Bromazepam after liquid chromatographic separation from plasma samples: application to a bioequivalence study*, F. Albu, C. Georgita, F. Tache, L. Mutihac, A. Medvedovici, V. David, **Journal of Liquid Chromatography and Related Technologies** 30(18): 2699-2715, 2007. *Complexation behavior of cucurbit[6]uril with short polipeptides* H.-J. Buschmann, L. Mutihac, R.-C. Mutihac, E. Schollmeyer, **Thermochim. Acta** 430(1-2): 79-82, 2005. *Simple molecular architecture using alkylamines,  $\alpha$ -Cyclodextrin, and 18-crown-6 in aqueous solution*, H.-J. Buschmann, L. Mutihac, E. Schollmeyer, **Supramol. Chem.** 17(6): 447-451, 2005. *Characteristic Extraction and Transport Properties of Crown Ethers and Cryptand [2.2.2] for Amino Acid Methyl esters*, H.-J. Buschmann, L. Mutihac, **Sep. Sci. Technol.** 37(14): 3335-3347, 2002. *Heats of protonation of amines, diazacrown ethers and cryptands in methanol*, H.-J. Buschmann, E. Cleve, L. Mutihac, E. Schollmeyer, **Journal of Thermal Analysis and Calorimetry** 70: 919-925, 2002. *Calixarene derivatives as carriers in liquid membrane separation*, L. Mutihac, H.-J. Buschmann, E. Diacu, **Desalination** 148: 253-256, 2002. *Complexation, solvent extraction, and transport through liquid membrane of protonated peptides using crown ethers*, H.-J. Buschmann, L. Mutihac, **Anal. Chim. Acta** 466: 101-108, 2002. *Interaction and transport through liquid membranes of some dipeptide complexes with macrocyclic receptors*, L. Mutihac, H.-J. Buschmann, K. Jansen, A. Wego, **Materials Science & Engineering, C: Biomimetic and Supramolecular Systems**, 18(1-2): 259-264, 2001. *The influence of water molecules on the complex formation between  $K^+$  and 18-crown-6 and the cryptand (222) in chloroform* H.-J. Buschmann, G.

Wenz, E. Schollmeyer, L. Mutihac, **Inorg. Chem. Commun.** 4: 211-214, 2001. *A novel experimental method for the study of complex formation between alpha-, beta-, and gamma cyclodextrin and nearly insoluble cucurbituril-[2]rotaxanes in aqueous solution*, H.-J. Buschmann, E. Cleve, L. Mutihac, E. Schollmeyer, **Microchem. J.** 64: 99-103, 2000. *The complexation of protonated amines, diaza 18-crown-6 and cryptand (222) by 18-crown-6 in different solvents*, H.-J. Buschmann, L. Mutihac, A. Wego, E. Schollmeyer **Polish J. Chemistry** 74: 61-66, 2000. *Physicochemical parameters of the transport of amines and amino acids through liquid membranes by macrocyclic ligands*, H.-J. Buschmann, L. Mutihac, and R. Mutihac, **Sep. Sci. & Technol.** 34: 331-341, 1999.

**14/ Reviewer for journals** : Chem.Rev.; Chem. Soc. Rev; RSC Advances; Chem. Comm.; Talanta; Biomaterials; Chirality; JACS; Supramol Chem.; J Mol Structure; Chirality; Journal of Inclusion Phenomena and Macrocyclic Chemistry; Separation Science and Technology; Journal of Membrane Science; Sensors & Actuators, B: Chemical, Polyhedron; Tetrahedron Letters; Analytica Chimica Acta; Analytical Methods; Dyes & Pygments, Isr.J.Chem, Analytical Letters; Analytical Chem.; J.Org.Chem.; Carbohydrate Polymers; Spectrochimica Acta Part A; Electroanalysis; Electrochemistry Comm.; Frontiers in Chemistry; J. Electrochemical Society.

București, 2023

Prof. Dr. Lucia Mutihac