

## MONICA ILIES, Ph.D.

### EDUCATION

- **Postdoctoral Researcher**      **2006 – 2009**      University of Pennsylvania, Philadelphia, PA  
Adviser: Prof. David W. Christianson
- 2004 – 2006**      University of Pennsylvania, Philadelphia, PA  
Adviser: Prof. Virgil Percec
- 2003 – 2004**      University of Texas Medical Branch, Galveston, TX  
Advisers: Prof. Melvyn S. Soloff; Dr. Michael G. Izban
- 2002 – 2003**      University of Florence, Florence, Italy  
Advisers: Prof. Andrea Scozzafava; Dr. Claudiu T. Supuran
- **Ph.D.**      **1997 – 2002**      Chemistry, University “Politehnica” Bucharest, Roumania  
Thesis: “*Enzymes Inhibitors and Activators: Synthesis, Structural Characterization and Biological Activity*”  
Adviser: Prof. Mircea D. Banciu, F. Roum. Acad. Sci.
- **M.Sc.**      **1995 – 1997**      Chemistry, University of Bucharest, Roumania  
Thesis: “*Halogenosulfanilamide Derivatives as Carbonic Anhydrase Inhibitors*”  
Adviser: Prof. Ovidiu Maior
- **B.S.**      **1990 – 1995**      Chemistry, University of Bucharest, Romania  
Thesis: “*Synthesis and Biological Activity of a Series of 1,2,4-triazole-3-yl-pyridinium Salts*”  
Adviser: Dr. Claudiu T. Supuran

### PROFESSIONAL EXPERIENCE

<b>2016 –present</b>	Associate Teaching Professor	Dpt. of Chemistry, Drexel University
<b>2010 –2016</b>	Assistant Teaching Professor	Dpt. of Chemistry, Drexel University
<b>2010</b>	Adjunct Professor of Chemistry	Widener University
<b>2009-2010</b>	Adjunct Professor of Biochemistry	Arcadia University
<b>2009-2010</b>	Research Associate	University of Pennsylvania
<b>2002-2003</b> (leave of absence 2003-2006)	Assistant Professor, tenure-track	School of Biotechnologies, Dpt. of Chemistry, Bucharest, Roumania
<b>1995-2001</b>	Junior Assistant Professor, Lecturer, and Research Fellow	School of Biotechnologies, Dpt. of Chemistry, Bucharest, Roumania

### TEACHING EXPERIENCE

- **Associate Teaching Professor (2016-present) and Assistant Teaching Professor (2010-2016)** Drexel University, Department of Chemistry:
  - coordination of general chemistry service courses CHEM 101 and CHEM 102 (since **2013; 900-1300 students; ~ 30 instructors**);
  - organization of departmental tutoring for general chemistry, organic chemistry and applied chemistry;

- **lectures:**
  - **general chemistry** (both *atoms first approach* and *molecular approach* teaching strategies):
    - **CHEM 101-102:** science non-majors, **230 students/class**;
    - **CHEM 121:** chemistry majors, **20-30 students/class**;
  - **organic chemistry:**
    - **CHEM 241, CHEM 243:** **80-200 students/class**;
  - **medicinal chemistry**
    - **CHEM T380:** **~ 20 students/class**;
- **laboratories and recitations** (up to **24-30 students/class**):
  - **CHEM 101, 102, 103** (general chemistry for non-majors);
  - **CHEM 121, 122, 123** (general chemistry for chemistry majors);
  - **CHEM 151** (applied chemistry for business majors);
  - **CHEM 244; 245** (organic chemistry **laboratory courses**);
- **2 laboratory manuals published**;
- **evidence-based teaching strategies to promote active learning:**
  - think-pair-share and "study-buddy";
  - muddiest point cards/slides;
  - student Power Point presentations;
  - partially flipped classroom;
  - teaching technologies:
    - Turning Point technology (clickers); BBLearn; interactive online homework;
    - Turnitin assignments;
- departmental **tutoring** services for organic chemistry, general chemistry and applied chemistry;
- **Adjunct Professor (2009-2010):**

Arcadia University, Glenside, PA (~**60 students/class**) and Christiana, DE (~**40 students/class**):

  - **biochemistry** course (**Physician Assistant Program - PA 511 Bioscience; 40-60 students/class**);

Widener University, Chester, PA (**2010**):

  - **general chemistry** laboratories (**Nursing Program - 24 students/class**);
- **Assistant Professor, tenure-track (2002-2003; leave of absence 2003-2006):**

University of Agricultural Sciences and Veterinary Medicine Bucharest, School of Biotechnologies, Department of Chemistry, Bucharest, Roumania:

  - **inorganic and general chemistry** course (**125 students/class**);
  - **1 textbook** published;
- **Junior Assistant Professor, Lecturer, and Research Fellow (1995-2001):**
  - **organic and inorganic chemistry** laboratory courses;
  - **2 laboratory manuals** published.

## **SERVICE**

### **Intramural:**

#### **Drexel 2015 Service Recognition Award**

- member of:
  - the Senate Committee for Academic Affairs (2014-present);
  - the Student Life Awards Election Committee (2015-present);
  - the Drexel Learning Alliance (2015-present);
  - the Department Head Search committee (2014-2015);
  - the departmental Undergraduate Affairs Committee (2012-present);
  - the departmental Committee for the Development of a 'Chemistry Majors Only' sequence (2011-present);
  - multiple departmental hiring committees (2011-2017);
  - multiple Ph.D. thesis committees (2011-2014) as follows:
    - Ph.D. thesis defense:
      - November 13th, 2013: Nicholas Paparoidamis (adviser: Dr. Peter Wade);
      - June 1st, 2014: Carol Sha (adviser: Dr. Lynn Penn)
      - August 21<sup>st</sup>, 2014: Marcela Garcela (adviser: Dr. Jun Xi)
    - Ph.D. thesis proposal:
      - April 17th, 2013: Bryan Fulmer (adviser: Dr. Kevin Owens);
      - March 7th, 2014: Mohammad Nozari (advisers: Dr. Anthony Addison and Dr. Frank Ji);
      - March 19th, 2014: Elsa Gorre (adviser: Dr. Kevin Owens).
- invited guest of the Curriculum Committee of CoAS and of the BA working group (2014-present).
- participation in department/college activities:
  - Open Houses for:
    - accepted Drexel students;
    - high-school juniors;
    - prospective science students;
  - judge for :
    - DPG Contest STEM category: 2012-present;
    - Research Day; 2012-present;
    - STAR Scholars Summer Showcase: 2015-present;
- Convocation and Commencement: student or faculty marshall (2011 - present);
- University and CoAS Collegial Assemblies;
- CoAS Meet & Greet organized by the Dean's Office;
- Faculty Social hours organized by the President's and/or Provost's Office.

**Extramural:**

- **member of the national ACS Exams committee** for the General Chemistry Full Year Exam (2019)
- **editorial activity:**
  - **reviewer** for: *Journal of Medicinal Chemistry, ChemMedChem, Bioorganic & Medicinal Chemistry, Bioorganic & Medicinal Chemistry Letters, Arkivoc* (ARKAT Foundation);
- **academic evaluator** for The American Medical College Application Service (AMCAS), American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS), Common Application for undergraduate college admission;
- **panelist** for the 2015 and the 2016 National Defense Science and Engineering Graduate (NDSEG) Fellowship - Department of Defense (DoD) and the American Society for Engineering Education (ASEE);
- **Philadelphia Science Festival** (member of Dr. Daniel King's team): 2014 - present.

**RESEARCH EXPERIENCE**

● **Bioorganic chemistry and chemical biology:**

- inhibitors and activators of metalloenzymes connected with physiopathology - design, multi-step synthesis, and biological evaluation of isozyme/organ-selective, topically active derivatives used to investigate structural particularities and biological functions of these proteins;
- chemistry of 5- and 6-membered ring heterocycles; sulfonamides; hydroxamic, boronic and amino acids derivatives.

● **Bioinorganic chemistry and biochemistry:**

- structure and functions of metalloenzymes (carbonic anhydrase, arginase, matrix metalloproteinases);
- spectrometric techniques for structural analysis of small and medium-sized molecules and of their supra-molecular assemblies: <sup>1</sup>H-, <sup>13</sup>C-, <sup>19</sup>F-, <sup>11</sup>B-, and 2D-NMR; gel-permeation chromatography (GPC); high performance liquid chromatography (HPLC); matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF); mass spectrometry (MS); differential scanning calorimetry (DSC); circular dichroism (CD);
- biochemistry/molecular biology techniques for enzyme expression and purification; immunodetection (Western blotting); tissue culture techniques; DNA purification;
- enzyme kinetics: radioactive assays; spectrophotometric assays (UV-Vis); surface plasmon resonance (SPR); isothermal titration calorimetry (ITC).

**Research Projects:**

Research Associate, University of Pennsylvania, Philadelphia, PA - David Christianson's group

**Arginase and acetylpolyamine amidohydrolase inhibitors: design, synthesis, and biological evaluation**

- scaled-up synthesis of 2-aminoimidazole-based inhibitors of human arginase;
- synthesis of new polyamine inhibitors of acetylpolyamine amidohydrolase.

Postdoctoral Research Fellow, University of Pennsylvania, Philadelphia, PA

Adviser: Professor David W. Christianson

**Arginase inhibitors: design, synthesis, and biological evaluation**

- synthesized 2-aminoimidazole-based inhibitors - first efficient non-boronic acid inhibitors; the best compound in the series significantly reduces allergic airways inflammation *in vivo* (University of Pennsylvania Provisional Patent, 61/329,901 2010);

- scaled-up synthesis (gram amounts) of boronic acid arginase inhibitors for biological testing (collaboration with University of Pennsylvania Medical Center - Pulmonary, Allergy & Critical Care Division; Johns Hopkins Hospital; Cincinnati College of Medicine; University of Iowa Carver College of Medicine; Louisiana State University; Faculty of Medicine, University of Toronto);
- optimized SPR techniques and radioactive assays to assess biologically arginase inhibitors.

Postdoctoral Research Fellow, University of Pennsylvania, Philadelphia, PA

Adviser: Professor Virgil Percec

**Spectrometric techniques for structural analysis of self-assembling dendrimers as porous protein mimics**

- structural and retrostructural analysis of dendronized dipeptides self-assembled into supramolecular dendrimers in bulk and solution, using a combination of techniques:  $^1\text{H}$ -,  $^{13}\text{C}$ -, and 2D-NMR; GPC; MALDI-TOF; MS; DSC; CD.

Postdoctoral Research Fellow, University of Texas Medical Branch, Galveston, TX

Advisers: Professor Melvyn S. Soloff and Dr. Michael G. Izbán

**Regulators of G proteins signaling (RGS) and their physiological role in myometrial cells**

- RGS expression and purification; immunodetection (Western blotting); tissue culture techniques; assessment of specific functions in human myometrial cells;
- phenotypic characterization and signaling pathways of a newly developed immortalized human myometrial cell line.

Postdoctoral Research Fellow, University of Florence, Florence, Italy

Advisers: Professor Andrea Scozzafava and Dr. Claudiu T. Supuran

**Antiglaucoma agents from topically-active carbonic anhydrase inhibitors**

- designed, synthesized, and structurally characterized several series of carbonic anhydrase inhibitors with nanomolar binding affinity; some representatives displayed **long-lasting topical antiglaucoma effect, greater than the clinically available dorzolamide and brinzolamide.**

Ph.D. studies, University “Politehnica” Bucharest, Romania

Adviser: Professor Mircea D. Banciu, F. Roum. Acad. Sci.

*Thesis: “Enzymes Inhibitors and Activators: Synthesis, Structural Characterization, and Biological Activity”*  
(collaboration with University of Florence, Italy)

- designed and synthesized:
  - isozyme-selective carbonic anhydrase activators and inhibitors active as low as 0.1 nM;
  - protease inhibitors with nanomolar binding affinity.

**FUNDING (GRANTS)**

- Romanian grant with World Bank – CNFIS 141 (1998-2001): “*Modernization of Specialists Training in Applied Biotechnologies*”- USAMV Bucharest; value **\$125.000**; co-investigator in charge of proposal design, execution;
- Romanian Grant ANSTI 33605 (2000-2001): “*Structure-Activity Relationship in a Series of Aromatic Inhibitors of Carbonic Anhydrase*” – USAMV Bucharest; value **\$3000**; co-investigator in charge of the synthetic part.

## **AWARDS**

- 2017** *Evidence-Based Teaching Award in Undergraduate Science, Technology, Engineering and Math Education (STEM)* - Drexel University Award
- 2016** STEM Education Travel Award (Drexel HHMI Award, 52008094)
- 2015** Drexel Service Recognition Award

## **PUBLICATIONS AND PRESENTATIONS**

(>1300 citations; h-index 19; <http://scholar.google.com/citations?user=mEKhJ3cAAAAJ&hl=en>)

- 25 scientific papers in peer-reviewed journals;
- 1 book chapter;
- 1 university course and 4 laboratory manuals;

## **Invited Talks**

**2017**

M. Ilies, "*Using organic chemistry to teach clinical diagnosis skills*", Abstracts of Papers, 253<sup>rd</sup> ACS National Meeting & Exposition, Philadelphia, PA, United States, April 2-6, 2017, CHED-170.

**2016**

M. Ilies, "*Organic chemistry-general chemistry-biochemistry: A pedagogic bridge circuit*", Abstracts of Papers, 252<sup>nd</sup> ACS National Meeting & Exposition, Philadelphia, PA, United States, August 21-25, 2016, CHED-23.

M. Ilies and D.B. King, "*How to efficiently steer the ship while steering clear of dictatorship*", Abstracts of Papers, 252<sup>nd</sup> ACS National Meeting & Exposition, Philadelphia, PA, United States, August 21-25, 2016, CHED-395.

M. Ilies, "*Computer-based pedagogical strategies in large general chemistry classes to increase STEM undergraduate retention*", Abstracts of Papers, 251<sup>st</sup> ACS National Meeting & Exposition, San Diego, CA, United States, March 13-17, 2016, CHED-1803.

**2008** ACS – Med Chem Division: "*2-Aminoimidazole Derivatives As New Arginase Inhibitors*"

**2007** University of Pennsylvania Medical Center, Pulmonary, Allergy, & Critical Care Division: "*RGS proteins: Design of Specific Antibodies*"

**2003** University of Texas Medical Branch: "*Small Molecules Interactions with Proteins Involved in Physiopathology*"

**2001** ICS-Unido: "*Rational Design of Topically Active Carbonic Anhydrase Inhibitors*"

## **Scientific Conferences and Workshops**

**2017**

- ACS San Francisco, CA

ACS Exams Institute Workshops:

"*Biochemistry map: both aligning items and identifying and editing the statements at levels 3 and 4.*"

"*Development of the 11th Big Idea: Systems Thinking: identifying and editing the statements at levels 1 and 2 as well as beginning to identify statements at level 3.*"

**2016**

- ACS Philadelphia, PA
- ACS San Diego, CA
- *Drexel's Fourth Annual Showcase of Teaching* - Drexel Center for Academic Excellence

**2015** *Drexel's Third Annual Showcase of Teaching* - Drexel Center for Academic Excellence

**2014**

- *Drexel's Second Annual Showcase of Teaching* - Drexel Center for Academic Excellence
- *"Role of the Faculty Reviewer Workshop: Helping Students With Personal Statements and Research Proposals"* - Drexel Center for Academic Excellence
- *"Faculty Search Committee Workshop"* - Drexel University
- *"CoAS Teaching and Outreach Consortium"* - Drexel University
- Workshop on writing intensive courses - Drexel Center for Academic Excellence

**2013** Widener University

**2010** ACS San Francisco, CA

**2008** ACS Philadelphia, PA

**2004** ACS Anaheim, CA

**2003** Florence, Italy

**2002** Hannover, Germany

**1997** NMR Brasov, Romania

**1996** Journées Francophones, Lille, France

**Drexel Faculty Learning Communities**

**2016** *"Engaging Students"*

**2014-2015** *"Engagement and Experiential Learning"*

**TRAINING COURSES**

**2015**

- invited by the dean to participate in the first Drexel course for teaching faculty funded by Howard Hughes Medical Institute (HHMI) Sustaining Excellence Award for Science Education: *"Promoting Student Learning in Large STEM Classrooms"*;
- HHMI Journal Club;

**2014** *"Using the Scholarship of Teaching and Learning (SoTL) to Improve Student Learning and Success: Five Practical, Research-based Approaches"* - Drexel Center for Academic Excellence

**2002** *Rational Drug Design Training Course* - Solvay Pharmaceuticals, Hannover, Germany

**2001** *Practical Method Development and Validation for HPLC* - Waters Corporation, Milford, MA, USA

**2001** *Combinatorial Chemistry - Molecular Modeling* - scholarship (ICS UNIDO, Trieste, Italy)

**2001** *Modern Spectrometric Techniques in Biophysics* - summer school (Roumanian Academy of Sciences, Neptun, Roumania)

**1995** *Utilization of Sulfur Derivatives in Organic Synthesis by Means of Stabilized Anions* – selected into the Francophone Teaching Module (ENSCL, Lille, France)

**1994** *Peak Techniques In Molecular Biology* – summer school organized (Ecole Normale Supérieure de Paris and University of Bucharest, Sibiu, Roumania)

**MEMBERSHIP - PROFESSIONAL SOCIETIES:**

- member of the American Chemical Society (ACS)
- member of ACS Division of Chemical Education

**US legal status:** US citizen

**Other**

- Foreign languages: English; Italian (good); French (fair)



## Scientific Publications

(>1300 citations; h-index 19; <http://scholar.google.com/citations?user=mEKhJ3cAAAAJ&hl=en>)

## A. Book Chapters

**M. Ilies**; A. Scozzafava; C.T. Supuran, “Carbonic Anhydrase Activators” in “*Carbonic Anhydrase: Its Inhibitors and Activators*”, C.T. Supuran, A. Scozzafava, J. Conway Eds., Taylor & Francis/CRC Press, **2004**, pp. 317-352.

## B. Articles in Peer-reviewed Journals

**25. M. Ilies**; D.P. Dowling; P.M. Lombardi; D.W. Christianson “Synthesis of a New Trifluoromethylketone Analogue of L-Arginine and Contrasting Inhibitory Activity Against Human Arginase I and Histone Deacetylase 8.” *Bioorg. Med. Chem. Lett.* **2011**, *21*, 5854-5858.

**24. M. Ilies**; L. Di Costanzo; D.P. Dowling; K.J. Thorn; D.W. Christianson “Binding of  $\alpha,\alpha$ -Disubstituted Amino Acids to Arginase Suggests New Avenues for Inhibitor Design” *J. Med. Chem.* **2011**, *54*, 5432-5443.

**23. M. Ilies**; L. Di Costanzo; M.L. North; J.A. Scott; D.W. Christianson “2-Aminoimidazole Amino Acids as Inhibitors of the Binuclear Manganese Metalloenzyme Human Arginase I.” *J. Med. Chem.* **2010**, *53*, 4266-4276.

**22.** D.P. Dowling; **M. Ilies**; K.L. Olszewski; S. Portugal; M. M. Mota; M. Llinas; D.W. Christianson “Crystal Structure of Arginase from *Plasmodium falciparum* and Implications for L-Arginine Depletion in Malarial Infection.” *Biochemistry* **2010**, *49*, 5600-5608.

**21.** D.R. Herbert, T. Orekov, A. Roloson, **M. Ilies**, C. Perkins, W. O’Brien, S. Cederbaum, D.W. Christianson, N. Zimmermann, M.E. Rothenberg, F.D. Finkelman. “Arginase I Suppresses IL-12/IL-23p40-Driven Intestinal Inflammation during Acute Schistosomiasis” *J. Immunol.* **2010**, *184*, 6438-6446.

**20.** L. Di Costanzo; **M. Ilies**; K.J. Thorn; D.W. Christianson. “Inhibition of Human Arginase I by Substrate and Product Analogues” *Arch. Biochem. Biophys.* **2010**, *496*, 101-108.

**19.** J.H. Kim; L. Bugaj; Y.J. Oh; T. Bivalacqua; S. Ryoo; K.G. Soucy; L. Santhanam; A. Webb; A. Camara; G. Sikka; D. Nyhan; A. Shoukas; **M. Ilies**; D.W. Christianson; H.C. Champion; D.E. Berkowitz. “Arginase Inhibition Restores NOS Coupling and Reverses Endothelial Dysfunction and Vascular Stiffness in Old Rats” *J. Appl. Physiol.* **2009**, *107*, 1249-1257.

**18.** S. Ryoo; G. Gupta; A. Benjo; H.K. Lim; A. Camara; G. Sikka; H.K. Lim; J. Sohi; L. Santhanam; K. Soucy; E. Tuday; E. Baraban; **M. Ilies**; G. Gerstenblith; D. Nyhan; A. Shoukas; D.W. Christianson; N.J. Alp; H.C. Champion; D. Huso; D.E. Berkowitz. “Endothelial Arginase II. A Novel Target for the Treatment of Atherosclerosis” *Circulation Research* **2008**, *102*, 923-932.

**17. M. Ilies**; M.T. Caproiu, “Dynamic 1H-NMR Conformational Study in a Series of Pyridinium Pyrazoles” *Revista de Chimie (Bucharest, Romania)* **2007**, *58*, 442-446.

**16.** M. Peterca; V. Percec; A.E. Dulcey; S. Nummelin; S. Korey; **M. Ilies**; P.A. Heiney. “Self-assembly, Structural, and Retrostructural Analysis of Dendritic Dipeptide Pores Undergoing Reversible Circular to Elliptical Shape Change” *J. Am. Chem. Soc.* **2006**, *128*, 6713-6720.

**15.** V. Percec; A.E. Dulcey; M. Peterca; **M. Ilies**; S. Nummelin; M.J. Sienkowska; P.A. Heiney. “Principles of Self-assembly of Helical Pores from Dendritic Dipeptides” *Proc. Natl. Acad. Sci.* **2006**, *103*, 2518-2523.

14. V. Percec; A.E. Dulcey; M. Peterca; **M. Ilies**; M.J. Sienkowska; P.A. Heiney. "Programming the Internal Structure and Stability of Helical Pores Self-assembled from Dendritic Dipeptides via the Protective Groups of the Peptide" *J. Am. Chem. Soc.* **2005**, *127*, 17902-17909.
13. V. Percec; A.E. Dulcey; M. Peterca; **M. Ilies**; J. Ladislaw; B.M. Rosen; U. Edlund; P.A. Heiney. "The Internal Structure of Helical Pores Self-assembled from Dendritic Dipeptides Is Stereochemically Programmed and Allosterically Regulated" *Angew. Chem. Int. Ed.* **2005**, *44*, 6516-6521.
12. V. Percec; A.E. Dulcey; M. Peterca; **M. Ilies**; Y. Miura; U. Edlund; P.A. Heiney, "Helical Porous Protein Mimics Self-assembled from Amphiphilic Dendritic dipeptides" *Aust. J. Chem.* **2005**, *58*, 472-482.
11. M.S. Soloff; Y.-J. Jeng; **M. Ilies**; S.L. Soloff; M.G. Izban; T.G. Wood; G.V.N. Velagaleti; G.D. Anderson. "Immortalization and Characterization of Human Myometrial Cells from Term-pregnant Patients Using a Telomerase Expression Vector" *Mol. Hum. Reprod.* **2004**, *10*, 685-695.
10. X. de Leval; **M. Ilies**; A. Casini; J-M. Dogne; B. Pirotte; A. Scozzafava; E. Masini; F. Mincione; M. Starnotti; C.T. Supuran. "Carbonic Anhydrase Inhibitors: Synthesis and Topical Intraocular Pressure Lowering Effects of Fluorine-containing Inhibitors Devoid of Nucleophilic Character" *J. Med. Chem.* **2004**, *47*, 2796-2804.
9. **M. Ilies**; M.D. Banciu; A. Scozzafava; M.A. Ilies; M.T. Caproiu; C.T. Supuran. "Protease Inhibitors: Synthesis of Bacterial Collagenase and Matrix Metalloproteinase Inhibitors Incorporating Arylsulfonylureido and 5-dibenzo-suberenyl/suberyl Moieties" *Bioorg. Med. Chem.* **2003**, *11*, 2227-2239.
8. M.A. Ilies; D. Vullo; J. Pastorek; A. Scozzafava; **M. Ilies**; M.T. Caproiu; S. Pastorekova; C.T. Supuran. "Carbonic Anhydrase Inhibitors. Inhibition of Tumor-associated Isozyme IX by Halogenosulfanilamide and Halogeno-aminobenzolamide Derivatives" *J. Med. Chem.* **2003**, *46*, 2187-2196.
7. **M. Ilies**; M.D. Banciu; M.A. Ilies; A. Scozzafava; M.T. Caproiu; C.T. Supuran. "Carbonic Anhydrase Activators: Design of High Affinity Isozymes I, II and IV Activators, Incorporating Tri-/Tetrasubstituted-Pyridinium-Azole Moieties" *J. Med. Chem.* **2002**, *45*, 504-510.
6. **M. Ilies**; C.T. Supuran; A. Scozzafava; A. Casini; F. Mincione; L. Menabuoni; M.T. Caproiu; M. Maganu; M.D. Banciu. "Carbonic Anhydrase Inhibitors: Sulfonamides Incorporating Furan-, Thiophene- and Pyrrole-carboxamido Groups Possess Strong Topical Intraocular Pressure Lowering Properties as Aqueous Suspensions" *Bioorg. Med. Chem.* **2000**, *8*, 2145-2155.
5. M. Cimpeanu; Gh. Campeanu; M. Pele; **M. Ilies**, "Correlation Between Protein, Starch and Amylases Concentrations and the Watering Way for Two Varieties of Greenhouse Tomatoes During Ripening" *Roum. Biotech. Lett.* **1999**, *5*, 319-326.
4. M. Cimpeanu; Gh. Campeanu; M. Pele; N. Cepoiu; **M. Ilies**; M.A. Ilies; S. Cimpeanu. "The Watering Way Influence on Phosphorus, Calcium and Potassium Assimilation for Two Varieties of Greenhouse Tomatoes During Ripening". *Roum. Biotech. Lett.* **1999**, *4*, 327-333.
3. Gh. Campeanu; M. Pele; M. Cimpeanu; **M. Ilies**; M.A. Ilies. "Evaluation of the Activity of Horseradish Peroxidase and Mushroom Polyphenoloxidase on Some Phenols". *Roum. Biotech. Lett.* **1999**, *4*, 319-326.
2. Gh. Campeanu; M. Pele; M. Cimpeanu; **M. Ilies**; G. Luta; E. Manescu; R. Musat. "Mycotoxin Content of Some Wheat and Corn Samples 4-6 Months after Harvesting" *Roum. Biotech. Lett.* **1999**, *4*, 65-70.

1. M.A. Ilies; M.D. Banciu; **M. Ilies**; F. Chiraleu; F. Briganti; A. Scozzafava; C.T. Supuran. "Carbonic Anhydrase Activators. Part 17. Synthesis and Activation Study of 1-(1,2,4- triazole-(1H)-3- yl)-2,4,6-Trisubstituted-pyridinium Salts against Isozymes I, II, IV" *Eur. J. Med. Chem.* **1997**, 32, 911-918.

### **C. Courses and Laboratory Manuals**

5. **M. Ilies**; E.J. Thorne; S.A. Rutkowsky. "*Laboratory Manual: General Chemistry II*", Drexel University, Philadelphia, **2016**, 94 pages.

4. **M. Ilies**; E.J. Thorne; S.A. Rutkowsky. "*Laboratory Manual: General Chemistry I*", Drexel University, Philadelphia, **2013**, 106 pages.

3. G. Campeanu; **M. Ilies**; M.A. Ilies; C. Voaides. "*Inorganic Chemistry Laboratory Experiments*", Relal Promex Ed., Bucharest, **2003**, 87 pages.

2. G. Campeanu; **M. Ilies**. "*Inorganic Chemistry*", Relal Promex Ed., Bucharest, **2002**, 155 pages.

1. G. Campeanu; **M. Ilies**; M.A. Ilies; C. Voaides. "*Experimental Techniques and Laboratory Experiments in Organic Chemistry*", Relal Promex Ed., Bucharest, **2002**, 121 pages.