

Curriculum Vitae

Mihail-Dumitru BARBOIU

Senior Research Scientist CNRS (Directeur de Recherche-DR1/Professor- PR1, Institut de Chimie - Section 12), 2008

Group Leader « Adaptative Supramolecular Nanosystems »

ERA-Chair, Petru Poni Institute of Macromolecular Chemistry, Iasi, Romania. 2012

Invited Professor, Sun-Yat-Sen University, Guangzhou, China.

European Young Investigator Award 2004

Birth:

Nationality: Romanian and French



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Education

2004: Habilitation à Diriger les Recherches:

Université Montpellier II, France (Gerent: Prof. Jean-Marie LEHN), 16 Avril 2004
Auto-organized materials for membranes and dynamic supramolecular devices

1998 : Ph. D. - Science of Materials

Université Montpellier II, France, (Ph.D. Supervisor: Dr. Christian GUIZARD).

Soutenue le 27 Mars 1998, mention Très honorable avec les félicitations écrites du jury. Etude de membranes hétéropolysiloxanes contenant de nouveaux précurseurs macrocycliques. Applications au transport facilité de Ag^+/Cu^{2+} et d'acides aminés (L-Phénylalanine).

1993 : B. Sc. Engineer in Organic Chemistry

Université POLITEHNICA de Bucarest, Roumania, Department of Analytical Chemistry and Instrumental Analysis, (Project supervisor: Prof. Dr. Constantin LUCA)
Rapport: *Macrocyclic receptors as analytical reagents*

Employment and Positions

2013-present: Senior Research Scientist CNRS (Directeur de Recherche-DR1/Professor- PR1, Institut de Chimie - Section 12, 01/01/2013): Institut Européen des Membranes de Montpellier, France (Prof Philippe MIELE).

2008-2012: Senior Research Scientist CNRS (Directeur de Recherche-DR2/Professor- PR2, Institut de Chimie - Section 12, 01/10/2008): Institut Européen des Membranes de Montpellier, France (Prof Gérald POURCELLY).

2001-2008: CNRS Research Scientist/Associate Professor CR1- Group Leader: Institut Européen des Membranes de Montpellier, France (Prof. Louis COT et Prof Gérald POURCELLY).

2007-2011: Associate Professor University POLITEHNICA of Bucharest, Department of Analytical Chemistry and Instrumental Analysis.

1999-2001: Assistant Professor, Collège de France, ISIS-UPL, Strasbourg, France. (Prof. Jean-Marie LEHN)

1993-1998: Assistant Professor: University POLITEHNICA of Bucharest, Department of Analytical Chemistry and Instrumental Analysis. (Prof. Constantin LUCA)

1993-1998: Research scientist: Research Centre for Macromolecular Materials and Membranes of Bucharest (R.C.M.M.M.) - Head of Supramolecular Chemistry Department. (Dr. Georgeta Popescu).

Awards and Honours

1. Royal Society of Chemistry, RSC Surfaces and Interfaces Award 2015.
2. Fellow of the Royal Society of Chemistry
3. Titre de reconnaissance pour les travaux en 2015 en Chimie Société Chimique de France -2015.
2. European Young Investigator Award 2004, European Science Foundation and EUROHORCS
3. Academic Merit Prize- Romanian Academy, Bucharest, 2008
4. "Costin D. Nenitescu" Medal and Honour Award of Romanian Chemical Society, 2007
5. HYMAP Mid-Carrer Award 2014
6. Fellowship of Pole Europeen Universitaire de Montpellier 1998-1999
7. Bronze medal – XIXth International Chemistry Olympiad, Veszprem- Hungary, 1987
8. Gold Medal – Ist Balkan Chemistry Olympiad - Bucharest, Roumania, 1987.

Research Monographs and Editor

1. Special Issue of *Israel J. Chem.* **2013**, 53(1-2), Constitutional Dynamic Systems, **M. Barboiu**, J.M. Lehn Editors.
2. *Constitutional Dynamic Chemistry*, **M. Barboiu** Volume Editor, *Top.Current Chemistry*, Springer, Verlag, **2012**.
3. *Handbook of Molecular Self-assembly*, K.V.Peinemann **M. Barboiu** Editors, Stanford Press, **2011**.
4. **M. Barboiu**, *Bioinspired and biomimetic membranes*, Ed E. Ruiz Hitzki, Wiley, **2007**, Chapter 10, 316-343.
5. **M. Barboiu**, Constitutional transcription of nucléobases self-assembly codes, Wiley Encyclopedia of Chemical Biology, **2007** doi:10.1002/9780470048672.webc527.
6. *Systems Membranes- complex roadmaps toward functional devices and coupled processes*, **Mihail Barboiu** Editor, **2010**, PRINTECH ED, Bucharest Romania, ISBN 978-606-521-526-9.
7. Special issue of Journal of Membrane Science, edited by Elsevier: "From simple molecules to complex membrane systems: bringing the molecular information to membranes and the converse" Dr. Mihail Barboiu Prof. Jean-Marie LEHN and Dr. Pierre Aimar Ed.
8. *Materials, Membranes and Processes*, Gheorghe Nechifor and **Mihail Barboiu** Editors, **2007**, PRINTECH ED, Bucharest Romania, ISBN 978-973-718-771-0.
9. C. Guizard, A. Ayrat, **M. Barboiu**, A. Julbe, "Handbook of Sol-Gel Technology - Volume 3 «Application of sol-gel technology ", édité par S. Sakka, chapitre 7: "Sol-gel processed membranes", 2004, pp. 139-178 (Kluwer Ed.), ISBN, 1-4020-7968-0.
10. L. Cot, A. Ayrat, C. Gavach, J. Sanchez, N. Hovnanian, **M. Barboiu**, C. Luca, Procédés à Membrane dans la Protection de l'Environnement, 1999, Ars Docendi (Ed.) Bucharest, Romania, ISBN: 973-99121-3-3.

Granted Patents

1. **M. Barboiu**, M. Michau, Précurseur hybride sulfoné, son procédé de synthèse, **2008**, FR08/01508
2. **M. Barboiu**, M. Michau, Matériau hybride superconducteur, son procédé de préparation, **2008**, FR08/01509
3. **M. Barboiu**, G. Nasr, C. Charmette, J. Sanchez, Membrane polymère autosupporté I, **2009**, FR09/0901540
4. **M. Barboiu**, G. Nasr, C. Charmette, J. Sanchez, Membrane polymère autosupportée II, **2009**, FR09/0901539
5. **M. Barboiu**, M Michau, Y. Leduc : Molécules bolaformes formant des canaux ioniques, submitted in **2012**

Top 10 invited presentations to international conferences (out of 119 invited lectures 2003-2014)

1. **M. Barboiu**, **Plenary lecture**, From Natural to Bioassisted and Biomimetic Artificial Water Channel Systems, Academy Lectures, Romanian Academy, Magna Aula, 10 Mars **2015**.
2. **M. Barboiu**, **Keynote Lecture**, Rubbery Organic Frameworks-ROFs-Tuning the gaz-diffusion through dynameric membranes, 10th International Congress on Membranes and Membrane porcesses, ICOM2014, 20-25 July, **2014**, Shouzou, China.
3. **M. Barboiu**, **Keynote Lecture**, Self-assembled supramolecular channels - toward hybrid materials for directional translocation, 13th International Conference on Inorganic Membranes ICIM2014, 6-9 July, **2014**, Brisbane, Australia.

4. **M. Barboiu**, **Keynote Lecture**, Dynamic behaviours and stabilization under confinement within supramolecular cages. 9th International Symposium on Macrocyclic & Supramolecular Chemistry (ISMCS-9). 7-11 June 2014, Shanghai, China.
5. **M. Barboiu**, Rubbery Organic Frameworks-ROFs-Tuning the gas-diffusion through dynamic membranes, **Invited Lecture**, World Congress on Chemical Engineering WCCE-2013 18-22 August, 2013, Seoul, Korea.
6. **M. Barboiu** Invited lecture Dynamic constitutional membranes, toward an adaptive facilitated transport, "Systems membranes, EUROMEMBRANE 2009, Montpellier, France, 5/09/2009.
7. **M. Barboiu**, Invited lecture, « Dynamic Supramolecular Hybrid Membranes». *MRS-2007 Spring Meeting*, San-Francisco, USA, 9-13 April 2007.
8. **M. Barboiu**, Invited lecture Molecular and supramolecular dynamics-a versatile tool for self-organization of membranes , World Polymer Congress, IUPAC-MACRO 2006, Rio de Janeiro, Brazil, 15-22 July 2006.
9. **M. Barboiu**, Invited Young Researcher by ESF and Nobel Foundation, *Alfred Nobel Symposium – «Energy in Cosmos and Life»*, Sanga Saby Conference Center and Stockholm University, Sweden, 18-22 June 2005.
10. **M. Barboiu**, Invited lecture, Supramolecular dynamic membranes as information transfer devices, *1st European Chemistry Congress*, Budapest, Hungary, 27-31 august 2006.

CURRENT AND PAST FUNDING ID

2015-2019: Member of "Programme ANR", DYNAFUN- 260.000 Euros

2013-2016: Member of "Programme Blanc International ANR", DYNAMULTIREC- 260.000 Euros

2011-2015: Coordinator of Research Training Network RTN Marie Curie – FP7, *DYNANO -Dynamic Interactive Systems* – 4. 000.000 Euros/whole network

2011-2014: Member of "Programme Blanc ANR", MULTISELF-Multifunctional memory elements using supramolecular self-constructing interconnects- 100.000 Euros

2011-2015: Member of 7th Capacities REGPOT program: Strengthening the Romanian research capacity in Multifunctional Polymeric Materials –STREAM –FP7-REGPOT-2010-1-264115

2007-2013: Member of "Cristofor I. Simionescu" Postdoctoral Fellowship Programme, POSDRU/89/1.5/S/55216, European Social Funds Programme-500000 euros.

2010-2013: Coordinator of "Programme Blanc ANR", DYNAMERS-Dynamic Polymers- 250.000 Euros

2011-2015: Coordinator IEM of 7th Framework Programme Research Potential: Strengthening the Romanian research capacity in Multifunctional Polymeric Materials

2007-2010: Coordinator of "Programme Blanc ANR", POLYFUNMAG-Self-organizing supramolecular and bioorganic dynamic systems within hybrid organic-inorganic matrix of magnetic properties- 250.000 Euros

2005-2010: Deputy Director of Research Training Network RTN Marie Curie - FP6, *Dynamic - Dynamic Interactive Chemical Biology* - 250.000 Euros

2005-2009: Coordinator of European Young Investigator Award: SUPRACOMBIMAT-*Dynamic Adaptive Materials for Separation and Sensing Microsystems*- 1.000.000 Euros

2005-2009 Coordinator CNRS (IEM:LGC) WP 9 "Membrane Materials" Network of Excellence (NoE) NANOMEMPRO

2004-2006- International Advisory Board RAINS projects (Romanian Action for Integrating Networking and Strengthening the ERA) FP6 2005-2008, 200 000 euros

2008-2009 Coordinator of PAI Egide STAR Hanyang University Seoul, Corea, 50000 Euros.

2004-2005 Coordinator of PAI Egide – Brancusi, (UPB Bucarest, Romania), 25000 euros

2005- Scientific Director of Industrial program BOSCH-LOMB Chauvin Montpellier - 28000 Euros/year

2002-2005 : Coordinator of « ACI Jeunes Chercheurs » MNRT-France ACI 4034, 200 000 euros

1999-2001: Group Leader, ERBIC15-CY98-0147, INCO-COPERNICUS Project: 200 000 euros

1997-1999: Coordinator of Macrocyclic Research program- 4 thematic programs, 200 000 euros (MNERT, Romania).

International Congress or Session Chair

1. Chairman of the Dynamic Constitutional Systems Symposium 2015, 27-28/07/2015, Montpellier France.
2. Chairman of Colloque Franco-Roumain de Chimie Appliquée CoFRRoCA 2014, 15-18 September 2014, Montpellier, France.
3. Session Chair, Responsive Membranes and Biomembranes (Joint EMS-NAMS), North American Membrane Society NAMS-2013 meeting 8-12 June, **2013**, Boise, USA.
4. Session Chair, Honorary session: Founding fathers of inorganic membranes, International Conference on Inorganic membranes- ICIM2012, 9-13 June, 2012, Enschede, the Netherlands.
5. Session Chair, EMS-NAMS session, Euromembrane-2012 23-27 September, **2012**, London, UK.
6. Session Chair, Responsive Membranes and Biomembranes (Joint EMS-NAMS), North American Membrane Society NAMS-2012 meeting 10-13 June, **2012**, New Orleans, USA.
7. Chairman of the Symposium "Open Problems in Systems Chemistry", Montpellier, 23-25 January 2012.
8. Session Chair, Gordon Research Conferences: Membranes: Materials and Processes, 29 July-3 August, 2012, Colby Sawyer College, New London, USA.
9. Chairman of European Membrane Society Summer School 2010, Systems Membranes-Complex Roadmaps toward Devices and Coupled Processes, 14-19 June 2010, Bucharest, Romania.
10. Chair session, North American Membrane Society, NAMS 2010, Washington DC, , 17-22/07, 2010.
11. Chair session, North American Membrane Society, NAMS 2012, New Orleans,, 9-13/06, 2010.
12. Member of Scientific Committee of EUROMEMBRANE 2009, Montpellier 6-10/09/2009.
13. Chairman of the IInd EURYIAS Congress: "Complexity and Evolution in Matter, Molecules, Life and Society" 29 April-03 May 2008, Bucharest, Romania.
14. Chairman of the Ist EURYIAS Congress: "Complexity and Diversity in Matter, Molecules, Life and Society" 29 November-02 December 2006, Strasbourg, France.
15. Chairman Colloque GDR 2922: Matériaux Hybrides Multifonctionnels, La Grande Motte, Mai 2006

Grant reviewer: Member of Engineering and Physical Sciences Research Council (EPSRC) Peer Review College 2005-2008

Coordinator CNRS WP 9 "Membrane Materials" Network of Excellence (NoE) NANOMEMPRO European Science Foundation ESF pool of reviewers 2006-

International Advisory Board des projets RAINS (Romanian Action for Integrating Networking and Strengthening the ERA) FP6 2005-2008.

Expert Externe Fonds Québécois de la Recherche sur la nature et les Technologies 2004- National Research Agency (ANR-France) reviewer

Member of Editorial Board

Journal of Enzyme Inhibition and Medicinal Chemistry

Journal of Colloid and Surface Chemistry,

Member of University Politehnica of Bucharest, Scientific Bulletin"

Peer Reviewer: Angewandte Chemistry, JACS, Chemical Comm., Organic Letters, Inorganic Chemistry, Journal of Membrane Science, Journal of Medicinal Chemistry, Journal of Molecular Recognition, Journal of Material Chemistry.

Member of Scientific Societies

- ♦ FRSC Fellow, Royal Society of Chemistry 2015-
- ♦ European Membrane Society : 1998- present; 2008 Member of EMS Council
- ♦ Société Française de Chimie 1999-present
- ♦ Société Roumaine de Chimie : 1997- present
- ♦ American Chemical Society ACS 2003- present
- ♦ American Association for the Advancement of Science (AAAS): 2006- present
- ♦ Association Roumaine de Chimie des Colloïdes et des Surfaces : 1995- 1998
- ♦ Société de Génie Chimique de Roumanie : 1997-1998

Dr. Mihaï-Dumitru BARBOIU
EURYI-PROJECT LEADER
INSTITUT EUROPEEN DES MEMBRANES
IEM/UMII - Place E. Bataillon
Case Courrier 047
34095 MONTPELLIER Cédex 5 - FRANCE

LIST OF PUBLICATIONS

MAI 2016

Mihail-Dumitru BARBOIU

Senior Research Scientist CNRS -Directeur de Recherche- DR1,
Institut de Chimie - Section 12

Peer review publications – 230

Invited lectures and communications -314

Peer review papers 181
Peer review proceedings –28
Books and Chapters – 17
Patents-4

Invited Lectures-119
Invited Seminars – 50
Communications -87
Posters -59

The top 10 publications, as senior author

1. Y.M. Legrand, A. van der Lee, **M. Barboiu**, Single-crystal X-ray structure of 1,3-dimethylcyclobutadiene by confinement in a crystalline matrix, *Science*, **2010**,329, 299-302.
2. **M. Barboiu**, Y. Le Duc, A. Gilles, P.-A. Cazade, M. Michau, Y.-M.Legrand, A. van der Lee, B. Coasne, P. Parvizi, J. Post, T. Fyles. An artificial primitive mimic of Gramicidin-A channel, *Nature Comm.* **2014**, 5, 4142. DOI: 10.1038/ncomms5142.
3. G. B. Rusu, F. Cunin, **M. Barboiu**, Real-Time Optical Detection of Stabilized Artificial G-Quadruplexes under Confined Conditions, *Angew. Chem.* **2013**, 125(48), 12829-12833; *Angew. Chem. Int. Ed.* **2013**, 52(48), 12597-12601 DOI: 10.1002/anie. 201306230.
4. **M. Barboiu**, Artificial water channels, *Angew. Chem. Int. Ed.* **2012**, 51 11674-11676.
5. Y. Le Duc, M. Michau, A. Gilles, V. Gence, Y.-M. Legrand, A. van der Lee, S. Tingry, **M. Barboiu**, Imidazole I-quartet water and proton dipolar channels, *Hot paper. Angew. Chem. Int. Ed.* **2011**, 50(48), 11366-11372.
6. **M. Barboiu**, Dynamic Interactive Systems - Dynamic selection in hybrid organic-inorganic constitutional networks, Feature and Cover Article, *Chem. Commun.* **2010**, 46, 7466-7476.
7. A. Cazacu, Y.M. Legrand, A. Pasc, G. Nasr, A. van der Lee, **M. Barboiu**, Dynamic hybrid materials for constitutional selective membranes, *Proc. Natl. Acad. Sci.*, **2009**, 106, 8117-8122.
8. C. Arnal-Herault, A. Pasc-Banu, M. Michau, D.Cot, E. Petit, **M. Barboiu**, Functional G-Quartet Macroscopic Membrane Films, Cover Article, *Angew. Chem. Int. Ed.* **2007**, 46, 8409-8413.
9. C. Arnal-Herault, A. Pasc-Banu, M. Barboiu M. Michau, A. van der Lee, Amplification and Transcription of the Dynamic Supramolecular Chirality of the G-quadruplex, *Angew. Chem. Int. Ed.* **2007**, 46, 4268-4272.
10. A. Cazacu, C. Tong, A. van der Lee, T.M. Fyles, **M. Barboiu**, Columnar Self-Assembled Ureidocrown-ethers – an Example of Ion-channel Organization in Lipid Bilayers, *J. Am. Chem. Soc.*, **2006**, 128, 9541-9548.

References

Prof. Achim Muller

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Chemie, Postfach 10 01 31

Prof. Jean-Marie Lehn
ISIS-Université de Strasbourg
8, allée Gaspard Monge
67000-Strasbourg, France

Prof. Gérard Ferey

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Université de Versailles-Saint
Quentin
Bâtiment Lavoisier
45 avenue des États-Unis
78035 Versailles Cedex