

Dr. JABIN Ivan

Date of birth : 17 December 1968 | Nationality : French

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EDUCATION

July. 2004 Habilitation

University of Le Havre, Unité de Recherche en Chimie Organique et Macromoléculaires, France.

Sept. 96 Ph.D. in Organic Chemistry

University of Paris VI, Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI), France.
Laboratory of Organic Chemistry (UMR 7084).

Advisor: Dr. M. Pfau, Research Director at CNRS.

June 92 M.S. in Organic Chemistry

Diplôme d'Etudes Approfondies (DEA), University of Paris VI, France.

ESPCI, Laboratory of Organic Chemistry, (UMR 7084).

Same place and direction as above.

RESEARCH EXPERIENCE

Oct. 06/present Professor

Université Libre de Bruxelles (ULB), Belgium.

Head of the Organic Chemistry Laboratory

Themes: *syntheses, study of the host-guest properties and self-assembly of new calix[6]arene based receptors. Use of calixarenes for surface modification, in chiral recognition, biomimetism and as sensors.*

Sept. 98/sept 06 Assistant Professor (Maître de Conférences)

University of Le Havre, Unité de Recherche en Chimie Organique et Macromoléculaire, France.

Head of the Supramolecular Chemistry research group.

Research on *the synthesis and study of new calix[6]arene based receptors.*

Jan. 98/aug. 98 Post-doctoral position in Organic/Macrocyclic Chemistry

Conservatoire National de Paris des Arts et Métiers, Lab. of the Nuclear Sciences, Paris, France.

Research on the *synthesis of macrocyclic N-ligands for the separation of actinides vs lanthanides.*

Supervisors: Pr. A. Guy et Pr. J. Foos.

Oct. 96/Dec. 97 Post-doctoral position in Organic/Medicinal Chemistry

Lehigh University, Bethlehem, PA, USA.

Research on the *synthesis of novel photo-therapeutic agents.*

Supervisor: Pr. N. D. Heindel.

Sept. 93/Sept. 96 Ph. D. in Organic Chemistry

University of Paris VI, France. Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI), Laboratory of Organic Chemistry, (UMR 7084).

Thesis: *"Enantioselective Michael-type reaction of functionalized chiral cyclanone imines with substituted electrophilic olefins. Synthetic applications in the terpene field"*.

Advisor: Dr. M. Pfau, Research Director at CNRS.

TEACHING EXPERIENCE

Courses:

- Organic Chemistry (B.S., M.S. levels)
- Asymmetric Synthesis (M.S. level)
- Medicinal Chemistry (B.S. level)
- 2D NMR Spectroscopy (M.S. level)

PUBLICATIONS

**Author of 93 publications, 3 book chapters and 4 international patents.
28 invited oral presentations**

Selected publications (2005-2016):

- "*Synthesis and conformational study of the first triply-bridged calix[6]azatubes*"
Le Gac, S.; Zeng, X.; Reinaud, O.; Jabin, I. *J. Org. Chem.* **2005**, *70*, 1204-1210.
- "*Calix[6]tren and Copper(II): A new generation of funnel complexes on the way to redox calixzymes*"
Izzet, G.; Douziech, B.; Prangé, T.; Tomas, A.; Jabin, I.; Le Mest, Y.; Reinaud, O. *Proc. Nat. Acad. Sci.* **2005**, *102*, 6831-6836.
- "*Polarizing a hydrophobic cavity for the efficient binding of organic guests: the case of calix[6]tren, a highly efficient and versatile receptor for neutral or cationic species*"
Darbost, U.; Rager, M.-N.; Petit, S.; Jabin, I.; Reinaud, O. *J. Am. Chem. Soc.* **2005**, *127*, 8517-8525.
- "*Optically pure calix[6]tris-ammoniums: syntheses and host-guest properties toward neutral guests*"
Darbost, U.; Zeng, X.; Giorgi, M.; Jabin, I. *J. Org. Chem.* **2005**, *70*, 10552-10560.
- "*Allosterically coupled double induced fit for a 1+1+1+1 self-assembly of a calix[6]tris-amine, a calix[6]tris-acid and their respective guest*"
Le Gac, S.; Marrot, J.; Reinaud, O.; Jabin, I. *Angew. Chem., Int. Ed. Engl.* **2006**, *45*, 3123-3126.
- "*Efficient synthesis of calix[6]tmpa: a new calix[6]aza-cryptand with unique conformational and host-guest properties*"
Zeng, X.; Coquière, D.; Alenda, A.; Garrier, E.; Prangé, T.; Li, Y.; Reinaud, O.; Jabin, I. *Chem. Eur. J.* **2006**, *12*, 6393-6402.
- "*Efficient Synthesis and Host-guest Properties of a New Class of Calix[6]aza-cryptands*"
Le Gac, S.; Zeng, X.; Girardot, C.; Jabin, I. *J. Org. Chem.* **2006**, *71*, 9233-9236.
- "*First insights into the electronic properties of a Cu(II) center embedded in the PN3 cap of a calix[6]arene-based ligand*"
Izzet, G.; Zeng, X.; Over, D.; Douziech, B.; Zeitouny, J.; Giorgi, M.; Jabin, I.; Le Mest, Y.; Reinaud, O. *Inorg. Chem.* **2007**, *46*, 375-377.
- "*Allosteric Tuning of the Intra-Cavity Binding Properties of a Calix[6]arene through External Binding to a ZnII Center Coordinated to Amino Side Chains*"
Darbost, U.; Sénèque, O.; Li, Y.; Bertho, G.; Marrot, J.; Rager, M.-N.; Reinaud, O.; Jabin, I. *Chem. Eur. J.* **2007**, *13*, 2078-2088.

- *"Syntheses and study of calix[6]cryptamides: a novel class of heteroditopic receptors displaying versatile host-guest properties toward neutral species or organic associated ion-pair salts"*
Le Gac, S.; Jabin, I. *Chem. Eur. J.* **2008**, *14*, 548-557.
- *"Highly selective synthesis of a 1,3,5-tris-protected calix[6]arene type molecular platform through coordination and host-guest chemistry"*
Le Gac, S.; Marrot, J.; Jabin, I. *Chem. Eur. J.* **2008**, *14*, 3316-3322.
- *"Calix[6]tris-(thio)ureas: heteroditopic receptors for the cooperative binding of organic ion-pairs"*
Hamon, M.; Ménand, M.; Le Gac, S.; Luhmer, M.; Dalla, V.; Jabin, I. *J. Org. Chem.* **2008**, *73*, 7067-7071.
- *"Dioxygen Activation at a Mononuclear Cu(I) Center Embedded in the Calix[6]arene-Tren Core"*
Izzet, G.; Zeitouny, J.; Akdas-Killig, H.; Frapart, Y.; Ménage, S.; Douziech, B.; Jabin, I.; Le Mest, Y.; Reinaud, O. *J. Am. Chem. Soc.* **2008**, *130*, 9514-9523.
- *"Second generation of calix[6]aza-cryptands: synthesis of heteroditopic receptors for organic ion pairs"*
Le Gac, S.; Ménand, M.; Jabin, I. *Org. Lett.* **2008**, *10*, 5195-5198.
- *"Synthesis of the First Calix[6]crypturea via a Versatile Tris-azide Precursor"*
Ménand, M.; Jabin, I. *Org. Lett.* **2009**, *11*, 673-676.
- *"Induced fit encapsulation by a 1,3,5-alternate calix[6]arene"*
Ménand, M.; Leroy, A.; Marrot, J.; Luhmer M.; Jabin, I. *Angew. Chem., Int. Ed. Engl.* **2009**, *48*, 5509-5512.
- *"Dramatic Effect of a Protein-like Cavity on Dissociative vs. Associative Copper Redox Chemistry"*
Le Poul, N.; Douziech, B.; Zeitouny, J.; Thiabaud, G.; Colas, H.; Conan, F.; Cosquer, N.; Jabin, I.; Lagrost, C.; Hapiot, P.; Reinaud, O.; Le Mest Y. *J. Am. Chem. Soc.* **2009**, *131*, 17800–17807.
- *"Acid-base Controllable Recognition Properties of a Highly Versatile Calix[6]crypturea"*
Ménand, M.; Jabin, I. *Chem. Eur. J.* **2010**, *16*, 2159-2169.
- *"Calix[6]arene Based Cascade Complexes of Organic Ion-Triplets Stable in a Protic Solvent"*
Moerkerke, S; Ménand, M.; Jabin, I. *Chem. Eur. J.* **2010**, *16*, 11712-11719.
- *"Auto-catalyzed "electroclick" immobilization of a copper complex onto self-assembled monolayers on a gold electrode"*
Gomila, A.; Le Poul, N.; Cosquer, N.; Kerbaol, J.-M.; Noël, J.-M.; Reddy, M. T.; Jabin, I.; Reinaud, O.; Conan, F.; Le Mest, Y. *Dalton Trans.* **2010**, *39*, 11516-11518.
- *"Ru-TAP complexes with btz and pytz ligands: novel candidates as photooxidizing agents"*
Mattiuzzi, A.; Jabin, I.; Moucheron, C.; Kirsch-De Mesmaeker, A. *Dalton Trans.* **2011**, *40*, 7395-7402.
- *"Ipsa-nitration of calix[6]azacryptands: intriguing effect of the small rim capping pattern on the large rim substitution selectivity"*
Lejeune, M.; Picron, J.-F.; Mattiuzzi, A.; Lascaux, A.; De Cesco, S.; Brugnara, A.; Thiabaud, G.; Darbost, U.; Colasson, B.; Reinaud, O.; Jabin, I. *J. Org. Chem.*, **2012**, *77*, 3838-3845.

- *"Reductive electrografting of calix[4]arene diazonium salts onto surfaces: Anchoring versatile platforms for spatially-controlled functionalization"*
Mattiuzzi, A.; Jabin, I.; Mangeney, C.; Roux, C.; Reinaud, O.; Santos, L.; Bergamini, J.F.; Hapiot, P.; Lagrost, C. *Nat. Commun.* **2012**, *3*, 1130.
- *"Synthesis, electrochemical and photophysical properties of calixarene based Ru(II) complexes as potential multivalent photoreagents"*
Mattiuzzi, A.; Marcélis, L.; Jabin, I.; Moucheron, C.; Kirsch-De Mesmaeker, A. *Inorg. Chem.* **2013**, *52*, 11228–11236.
- **Publication featuring on the front cover of *J. Org. Chem.*:**
"Supramolecular assistance for the selective mono-functionalization of a calix[6]arene tris-carboxylic acid based receptor"
Inthasot, A.; Dang Thy, M.-D.; Lejeune, M.; Fusaro, L.; Reinaud, O.; Luhmer, M.; Colasson, B.; Jabin, I. *J. Org. Chem.*, **2014**, *79*, 1913-1919.
- *"Revisited photophysics and photochemistry of a Ru-TAP complex using chloride ions and a calix[6]crypturea"*
Rebarz, M.; Marcélis, L.; Menand, M.; Cornut, D.; Moucheron, C.; Jabin, I.; Kirsch - De Mesmaeker, A. *Inorg. Chem.* **2014**, *53*, 2635-2644.
- *"Intra- and Intermolecular Alkylation of N,O-Acetals and α -Activated Alcohols Catalyzed by in situ Generated Acid"*
Hamon, M.; Dickinson, N.; Devineau, A.; Bolien, D.; Tranchant, M.-J.; Taillier, C.; Jabin, I.; Harrowven, D.C.; Whitby, R.J.; Ganesan A.; Dalla V. *J. Org. Chem.* **2014**, *79*, 1900-1912.
- *"Fluorescent Chemosensors for Anions and Contact Ion-Pairs with a Cavity-based Selectivity"*
Brunetti, E.; Picron, J.-F.; Flidrova, K.; Bruylants, G.; Bartik, K.; Jabin, I. *J. Org. Chem.* **2014**, *79*, 6179-6188.
- *"One-pot electrografting of mixed mono-layers with controlled composition "*
Santos, L. Mattiuzzi, A.; Jabin, I.; Vandencastele, N.; Reniers, F.; Reinaud, O.; Hapiot, P.; Lhenry, S.; Leroux, Y.; Lagrost, C. *J. Phys. Chem. C*, **2014**, *118*, 15919-15928.
- *"Tailored Functionalization of Polyphenol-based Molecular Platforms"*
Lavendomme, R.; Leroy, A.; Luhmer, M.; Jabin, I. *J. Org. Chem.* **2014**, *79*, 6563-6570.
- *"A biomimetic heteroditopic receptor for zwitterions in protic media"*
Cornut, D.; Moerkerke, S.; Wouters, J.; Bruylants, G.; Jabin, I. *Chem. Asian J.* **2015**, *10*, 440-446.
- *"Supramolecular assistance for the selective demethylation of calixarene-based receptors"*
Danjou, P.-E.; De Leener, G.; Cornut, D.; Moerkerke, S.; Mameri, S.; Lascaux, A.; Wouters, J.; Brugnara, A.; Colasson, B.; Reinaud, O.; Jabin, I. *J. Org. Chem.* **2015**, *80*, 5084-5091.
- *"Supramolecular Modeling of Mono-Copper Enzyme Active Sites with Funnel-Complexes"*
Le Poul, N.; Le Mest, Y.; Jabin, I.; Reinaud, O. *Acc. Chem. Res.* **2015**, *48*, 2097-2106.
- *"Selective Recognition of Phosphatidylcholine Lipids by a Biomimetic Calix[6]tube Receptor"*
Moerkerke, S.; Wouters, J.; Jabin, I. *J. Org. Chem.* **2015**, *80*, 8720-8726.
- *"Highly Selective Synthesis of (Homooxa)calixarene-monoquinones through the "All-but-one" Methodology"*
Lavendomme, R.; Cragg, P.J.; Marcos, P.M.; Luhmer, M.; Jabin, I. *Org. Lett.* **2015**, *17*, 5690-5693.

- *"Kinetic and Thermodynamic Stabilization of Metal Complexes by Introverted Coordination in a Calix[6]-azacryptand"*
Inthasot, A.; Brunetti, E.; Lejeune, M.; Ménard, N.; Prangé, T.; Fusaro, L.; Bruylants, G.; Reinaud, O.; Luhmer, M.; Jabin, I.; Colasson, B. *Chem. Eur. J.* **2016**, *22*, 4855-4862.
- *"A Calix[6]azacryptand Ligand with a Sterically Protected Tren-based Coordination Site for Metal Ions"*
Zahim, S.; Wickramasinghe, L. A.; Evano, G.; Jabin, I.; Schrock, R. R.; Müller, P. *Org. Lett.* **2016**, *18*, 1570-1573.
- *"Extremely robust and post-functionalizable gold nanoparticles coated with calix[4]arenes via metal-carbon bonds"*
Troian-Gautier, L.; Valkenier, H.; Mattiuzzi, A.; Jabin, I.; Van den Brande, N.; Van Mele, B.; Hubert, J.; Reniers, F.; Bruylants, G.; Lagrost, C.; Leroux, Y. *Chem. Commun.* **2016**, *52*, 10493-10496.
- *"Immobilization of monolayers incorporating Cu funnel complexes onto gold electrodes. Application to the selective electrochemical recognition of primary alkylamines in water"*
De Leener, G.; Evoung-Evoung, F.; Lascaux, A.; Mertens, J.; Porrás-Gutierrez, A. G.; Le Poul, N.; Lagrost, C.; Over, D.; Leroux, Y. R.; Reniers, F.; Hapiot, P.; Le Mest, Y.; Jabin, I.; Reinaud, O. *J. Am. Chem. Soc.* **2016**, *138*, 12841-12853.
- *"Controlled Modification of Polymer Surfaces Through Grafting of Calix[4]arene-Tetradiazoate Salts"*
Troian-Gautier, L.; Martínez-Tong, D.; Hubert, J.; Reniers, F.; Sferrazza, M.; Mattiuzzi, A.; Lagrost, C.; Jabin, I. *J. Phys. Chem. C* **2016**, *120*, 22936-22945.
- *"A Nano-Sized Container for Specific Encapsulation of Isolated Water Molecules"*
Lavendomme, R.; Marcélis, L.; Wouters, J.; Luhmer, M.; Jabin, I. *Chem. Commun.* **2016**, *52*, 14109-14112.