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Professional course

2020 **Founding PARTNER, MeCAWaRe SAS and Scientific Adviser**
2018 - 20 **Full Professor** (PR1), Univ. Claude Bernard Lyon 1. **Applied Supramolecular Chemistry group (CSAp) leader**, UMR 5246 ICBMS
2013 - 18 Associate Professor (PR2), Univ. Lyon 1. Applied Supramolecular Chemistry group (CSAp) leader, UMR 5246 ICBMS
2010 Habilitation à diriger les Recherches (Aix-Marseille Université)
2005 Assistant Professor (MCF), Ecole Centrale Marseille, UMR 7313 iSm2
2003 - 05 Research associate, University of Cambridge. Advisor: J. K. M. Sanders
2000 - 03 Ph.D. in Chemistry, Toulouse University, LCC UPR 8241 Advisor: J.-P. Majoral

Awards and Grants (selected)

2011 JSP Young Promising Researcher fellowship, 46th Bürgenstock Conference
 2012 ANR Young Investigator JCJC 12-JS07-001 *MA²RCO₂SCARE* project, Coordinator
 2013 SATT Sud-Est *CO₂-Met* (CO₂-based metal capture) Pre-maturation Grant, Coordinator
 2013 **Chair in Chemistry, Multi-scale Science & Technology Excellence Laboratory (iMuST LABEX)**
 2013 European Project *LEGOMEDIC* (UCB Pharma –CNRS – ANRT joint Grant), Partner
 2016 Pulsalys *Proc-CO₂-Met* (CO₂-based Metal Capture Process) Maturation Grant, Coordinator
 2018 ADEME – VICAT CO₂-Remediation Project, Coordinator
 2019 Pack Ambition Recherche *CO₂Met*, Coordinator
 2020 **Jean-Marie Lehn Prize, French Chemical Society**
 2020 **Chemistry of the Year, American Chemical Society**
 2021 R&D Booster BlackCO₂Met, Partner
 2022 ADEME PIA 4 ScrapCO₂Met, Partner

Administrative responsibilities (selected)

2017 – present **ADEME** (GT-Val, FdR CCUS) panel **Member, Mission Innovation Representative (2018)**
 2018 – present Panel member, Chemistry section, FWO (Belg.) NCN (Pol.)
 2018 – present Labex iMuST : steering and executive steering committee member
 2020 – present **ERC (STG), ESF expert**
 2021 – present **GDR Prométhée, Scientific Board, nominated member**
 2022 – 2024 **iMuST LABEX Coordinator**

Output and impact

Publications	93		Bibliometrics		Oral Communications	
Articles	43	H-index	23	<i>Web of Science</i>	Plenary and keynotes	12+
Patents	21		23	<i>Scopus</i>	Communications	40+
Dissemination	29		25	<i>Google Scholar</i>	Seminars	30+
Proceedings	2	Citations	2871	<i>Web of Science</i>	Dissemination	6 [†]
			3674	<i>Google Scholar</i>		
			3023	<i>Scopus</i>		

[†] 4 radio interviews and 2 TV reports

*1 article >1000 citations, 6 articles >100.

Selection of articles as a corresponding author

Article	Journal	Citations
Simultaneous CO ₂ capture and metal purification from waste streams using triple-level dynamic combinatorial chemistry.	<i>Nature Chem.</i> 2020 , 12, 202.	23
Wetting the lock and key enthalpically favours polyelectrolyte binding.	<i>Chem. Sci.</i> , 2019 , 10, 277.	9
CO ₂ Binding by Dynamic Combinatorial Chemistry: An Environmental Selection	<i>J. Am. Chem. Soc.</i> 2010 , 132, 3582,	52
Structure elucidation of a complex CO ₂ -based organic framework material by NMR crystallography	<i>Chem. Sci.</i> 2016 , 7, 4379	44
A call to (green) arms: a rallying cry for green chemistry and engineering for CO ₂ capture, utilization and storage	<i>Green. Chem.</i> 2018 , 20, 5058	68

Production of the 5 past years (Year 2021 was mostly devoted to MeCaWaRe development and fundraising in the framework of Concours scientific awarded (loi Pacte))

- J Leclaire, G Poisson, F Ziarelli, G Pepe, F Fotiadu, F.M. Paruzzo, A. J Rossini, J.-N. Dumez, B. Elena-Herrmann, L. Emsley, Structure elucidation of a complex CO₂-based organic framework material by NMR crystallography, *Chem. Sci.* **2016**, *7*, 4379-4390
- P.-T. Skowron, M. Dumartin, E. Jeamet, F. Perret, C. Gourlaouen, A. Baudouin, B. Fenet, J.-V. Naubron, F. Fotiadu, L. Vial, J. Leclaire, On-Demand Cyclophanes: Substituent-Directed Self-Assembling, Folding, and Binding. *J. Org. Chem.* **2016**, *80*, 654-661
- V. Point, A. Bénarouche, J. Zarrillo, A. Guy, R. Magnez, L. Fonseca, B. Raux, J. Leclaire, G. Buono, F. Fotiadu, T. Durand, F. Carrière, C. Vaysse, L. Couëdelo, J.-F. Cavalier, Slowing down fat digestion and absorption by an oxadiazolone inhibitor targeting selectively gastric lipolysis, *Eur. J. Med. Chem.* **2016**, *123*, 834-848.
- G. Poisson, G. Germain, J. Septavaux, J. Leclaire. Straightforward and selective metal capture through CO₂-induced self-assembling, *Green Chem.* **2016**, *18*, 6436 - 6444
- L. Vial, M. Dumartin, M. Donnier-Maréchal, F. Perret, J.-P. Francoia, J. Leclaire, Chirality Sensing and Discrimination of Lysine Derivatives in Physiological Conditions with a Dyn[4]arene, *Chem. Commun.* **2016**, *52*, 14219 – 14221
- J. Septavaux, G. Geoffroy, J. Leclaire, Dynamic Covalent Chemistry of Carbon Dioxide: Opportunities to Address Environmental Issues, *Acc. Chem. Res.* **2017**, *50*, 1692-1701.
- M. Donnier-Marechal, J. Septavaux, E. Jeamet, A. Heloin, F. Perret, E. Dumont, A. J.-C. Rossi, F. Ziarelli, J. Leclaire, Diastereoselective Synthesis of a Dyn[3]arene with Distinct Binding Behaviors toward Linear Biogenic Polyamines Vial, L., *Org. Lett.* **2018**, *20*, 2420-2423.
- J. Leclaire, D. J. Heldebrant, A call to (green) arms: a rallying cry for green chemistry and engineering for CO₂ capture, utilisation and storage, *Green Chem.*, **2018**, *22*, 5058–5508. FRONT COVER.
- E. Jeamet, J. Septavaux, A. Heloin, M. Donnier-Maréchal, M. Dumartin, P. Mandal, I. Huc, E. Bignon, E. Dumont, C. Morell, J.-P. Francoia, F. Perret, L. Vial, J. Leclaire, Wetting the lock and key enthalpically favours polyelectrolyte binding. *Chem. Sci.*, **2019**, *10*, 277-283. Highlighted in C&EN.
- B. Ourri, J.-P. Francoia, G. Monard, J.-C. Gris, J. Leclaire, L. Vial, Dendrigrapt of Poly-l-lysine as a Promising Candidate To Reverse Heparin-based Anticoagulants in Clinical Settings, *ACS Med. Chem. Lett.* **2019**, *106*, 917-922
- F. Marocco Stuardi, F. MacPherson, J. Leclaire, Integrated CO₂ capture and utilization: A priority research direction. *Curr. Opin. Green Sustain. Chem.*, **2019**, *16*, 71-76.
- J. Septavaux, C. Tosi, P. Jame, C. Nervi, R. Gobetto & J. Leclaire, Simultaneous CO₂ capture and metal purification from waste streams using triple-level dynamic combinatorial chemistry. *Nature Chem.* **2020**, *12*, 202–212.
- M. Dumartin, J. Septavaux, M. Donnier-Maréchal, E. Jeamet, E. Dumont, F. Perret, L. Vial, J. Leclaire. The dark side of disulfide-based dynamic combinatorial chemistry. *Chemical Sci.* **2020**, *11* (31), 8151-8156.
- F. Marocco Stuardi, C. Tosi, A. M. Ducreux, Baudouin, J. Leclaire, Tuning the covalent chemistry of CO₂ capture by supramolecular effects, *J. Am. Chem. Soc* **2022**, , in revision
- L. Rotundo, F. Marocco Stuardi, C. Nervi, J. Leclaire, R. Gobetto, Efficient formate production by CO₂ electroreduction using a supported Mn complex in the presence of amines, *Chem. Eur. J.* **2022**, *28*, e202104377
- Y. Zhang, B. Ourri, P.-T. Skowron, E. Jeamet, A. Belenguer, N. Vanthuyne, O. Cala, P. Mandal, C. Duchamp, E. Dumont, F. Perret, L. Vial, I. Huc, J. Leclaire, Encoding stereochemical molecular information on cyclophanes using non-directional interactions, **2021**, submitted; chemrxiv **2021**, 10.26434/chemrxiv-2021-p1kvx
- J. Leclaire, F. Perret, L. Vial, Dyna[n]arenes : from stereoselective self-assembling to applications, *Eur. J. Org. Chem* **2022**, *2*, e202101274, FRONT COVER.
- J. Septavaux, M. Ducreux, J. Leclaire *Energy Procedia*, **2022**, in press
- M. Dumartin, J. Leclaire, E. Norrant, F. Perret. Methods for Identifying Proteins by using Synthetic Receptors. *Eur. Patent* **2016**, EP 16305674.0
- C. de Bellefon, J. Leclaire, R. Philippe, G. Poisson, L. Vanoye, Procédé de capture et/ou de détection d'un élément chimique et installation pour la mise en œuvre du procédé. *Fr. Patent* **2016**, FR16 53968.
- B. Ourri, M. Dumartin, J. Leclaire, E. Norrant, F. Perret, Method for discriminating Proteins by using Synthetic Receptors, *WO Patent* **2017**, PCT EP 2017064022.
- J. Leclaire, T-X. Metro, J. Septavaux. Procédé d'extraction sélective de métaux par mécanosynthèse et lixiviation, **2017**, *Fr. Patent* FR1758538.
- J. Leclaire, G. Poisson, R. Philippe, J. Septavaux, L. Vanoye Process of capture and/or detection of chemical element and installation related to the process. C. de Bellefon, *WO patent* **2017**, PCT EP 2017060166.
- J. Leclaire, T-X. Metro, J. Septavaux, Selective Metal Extraction by Mechanically assisted leaching, *WO patent* **2018**, PCT EP 2018 074789
- M. Ducreux, J. Leclaire, Process for selectively capturing metallic elements from polymetallic mixtures, *Eur Patent* **2022**, EP22305858
- C. Tosi, E. Schmith, L. Barnes-Davin, J. Leclaire, Procédé de carbonatation minérale intégrée à l'absorption de CO₂ (IAM) – Voie mécano-chimique, *Fr Patent* **2022**, **BR117949 filled**
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C. Tosi, E. Schmith, L. Barnes-Davin, J. Leclaire- Utilisation de sel alcalin d'acide aminé pour la carbonatation de matrice minérale (IAM), *Fr Patent 2022*, **BR117950 filled**

M. Hennebelle, L. Vial, L. Jean-Gerard, B. Andrioletti, J. Leclaire, Procédé de synthèse de Mousses et polymères biocompatibles eco-sourcés, *Fr Patent 2022*, pending

M. Ducreux, P. K.-J. Tan, J. Leclaire, T. a. Hatton, Electrochemical method for the selective recovery of Metal Elements from solutions, *US Patent 2022*, pending
