



CNRS Research Director

Team MESOO

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Dr Julien LEGROS



Groupe ment
de recherche
Synth Flux Organic, inorganic
and macromolecular synthesis
in continuous flow



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PROFESSIONAL EXPERIENCES

2019- Head of the French national network on flow chemistry (GDR CNRS Synth Flux)

2018- Research Director (CNRS) in the **COBRA laboratory** at the **University of Rouen Normandy / Group leader of the Team MESOO**

Research activities: chemical synthesis in non-conventional media (flow chemistry, very high pressure, fluorous phase)

2011- Research Scientist (CNRS) in the **COBRA laboratory** at the **University of Rouen Normandy**

2004-2011 Research Scientist (CNRS) in the **BioCIS laboratory** at the **Faculty of Pharmacy of Paris South**

2002-2004 Alexander von Humboldt fellow at the **RWTH Aachen University** (Germany; group of Prof. BOLM)

EDUCATION

2009 Habilitation degree (Faculty of Pharmacy-Univ. Paris South, Châtenay-Malabry)

2002 PhD in organic chemistry (Faculty of Pharmacy-Univ. Paris South, Châtenay-Malabry; group of Dr BEGUE)

ADMINISTRATIVE & INSTITUTIONAL RESPONSIBILITIES

2022- Co-coordinator of 'NormandieFlowChem' Platform

2021-2023 Co-Coordinator of the Project 'Autonomie Pharmaceutique Industrielle'

2020-2023 CNRS Coordinator of the European INTERREG FMA project "Intelligent Textiles (SmartT)".

2019- Head of the French National Network on Flow Chemistry Group (GDR CNRS "Synth Flux")

2018-2021 CNRS coordinator of the European INTERREG FMA project "Transforming laboratories into factories (LabFact)"

2018- Head of the MESOO/Member of the UMR COBRA Management Team

2014- Member of the Joint Administrative Commission of the CNRS

2008-2012 Scientific Secretary of Section 12 of the National Committee for Scientific Research

2009-2011 Member of the Council of the Faculty of Pharmacy-Paris Sud

- ✓ Member of 7 selection committees for Lecturer competitions
- ✓ Member of 2 HCERES visiting committees
- ✓ Ponctual expert for press organs on chemical weapons (AFP, Le Monde, RFI, Radio Canada, La Recherche, Sciences & Vie, Planète+)

RESEARCH INTERESTS

Julien Legros was educated at the University of Paris-South where he received his Ph.D. under the guidance of Dr. D. Bonnet-Delpon and J.-P. Bégue (2002). After an Alexander von Humboldt post-doctoral position with Prof. C. Bolm at the RWTH Aachen University (Germany), he was appointed as CNRS Research Associate in 2004 (Faculty of Pharmacy Paris-South), and then moved to the University of Rouen Normandy in 2011 (promoted CNRS Research Director in 2018). In 2019, he founded the 'national French network for flow chemistry' ([GdR Synth Flux](#)). Julien Legros' research is oriented toward the use of non-conventional media in organic chemistry (flow microreactors, hyperbaric conditions, fluoruous solvents).

SCIENTIFIC ACHIEVEMENTS

Academic record (h-index: 26)

74 publications, 6 book chapters, 1 patents, 34 invited lectures (academia & industry)

SUPERVISION ACTIVITIES

14 PhD thesis supervised • 14 post-doctoral research associates • 2 Engineers

TEACHING ACTIVITIES

Lecture courses in Flow synthesis, Neoteric media and Hyperbaric synthesis (Master degree-University of Rouen and Graduate School of Chemistry-Normandy) and Industrial organic chemistry (Technician degree-University of Rouen)

5 REPRESENTATIVE CONFERENCES

1. Neutralisation d'agents chimiques de guerre en flux continu
Journée DRAGON NRBC, NexterSystems, Versailles-Satory, 6 juillet 2022
2. Continuous flow microreactors for safe chemical synthesis with hazardous reagents
Workshop on green and sustainable chemistry: fostering chemical safety and security through innovation, Organisation pour l'Interdiction des Armes Chimiques, La Haye, Pays-Bas, December 2018
3. Control of highly reactive metallated heterocycles by microflow technology
Janssen Pharmaceutical Company, Val-de-Reuil (France), January 18th 2017
4. Selectivity control in organic synthesis by mean of flow microreactors
Favorsky Institute of the Russian Academy of Sciences, Irkutsk (Russia), November 25th 2016
5. Use of fluorous compounds for the synthesis and recovery of amines
Kyoto University (Japan), November 30th 2012

5 REPRESENTATIVE PUBLICATIONS

1. Flow synthesis of an α -amino boronic ester as key precursor of Bortezomib drug
T. Desrues, J. Legros*, Philippe Jubault*, Thomas Poisson* *React. Chem. Eng.* **2022**, 7, 1285-1288.
2. Soft and effective detoxification of a VX simulant in a nylon 3D printed basic flow reactor
S. Mansour, A. Delaune, M. Manneveau, B. Picard, A. Claudel, C. Vallières, L. Sigot, P.-Y. Renard, J. Legros* *Green Chem.* **2021**, 23, 7522-7527 (*hot article*).
3. Oxidative neutralization of mustard-gas simulants in an on-board flow device with in-line NMR monitoring
B. Picard, B. Gouilleux, T. Lebleu, J. Maddaluno, I. Chataigner, M. Penhoat, F.-X. Felpin,* P. Giraudeau,* J. Legros*, *Angew. Chem. Int. Ed.* **2017**, 56, 7568.
4. Benefits of a dual chemical and physical activation: direct aza-Michael addition of anilines promoted by solvent effect under high pressure
A. Fedotova, B. Crousse, I. Chataigner, J. Maddaluno*, A. Yu. Rulev*, J. Legros*, *J. Org. Chem.* **2015**, 80, 10375.
5. Selective monomethylation of primary amines with simple electrophiles
T. Lebleu, X. Ma, J. Maddaluno, J. Legros*, *Chem. Commun.* **2014**, 50, 1836.