

## Research Experience

- Dec. 2015–present **Associate Professor: Laboratory of Genomics, Bio-Informatic & Molecular Chemistry, EA7528 National Conservatory of Arts and Crafts**  
*Organic Synthesis and Development of Greener Methods for the Production of Pharmaceuticals*
- Supervision of 6 postdocs, 1 PhD student, 2 visiting PhD students, 2 technicians, 5 MSc students
  - Scientific advisor at PILI (startup in green chemistry)
- Sep. 2015–Dec. 2015 **Postdoctoral Researcher: Laboratory of Organic Chemistry, School of Industrial Physics and Chemistry, ParisTech and Pierre-Gilles de Gennes Institute for Microfluidics**  
*Organic Synthesis, Colloids and Microfluidic Processing*  
Pr. Janine Cossy & Pr. Patrick Tabeling
- Microflusa project (EU FP7): Cross-linkable surfactants for colloid synthesis with microfluidics
- Oct. 2012–Sep. 2015 **Postdoctoral Researcher: Department of Inorganic and Materials Chemistry, School of Chemistry, University of Nottingham**  
*Organic Synthesis, Catalysis and Continuous-Flow Processing*  
Sir Martyn Poliakoff & Pr. Michael W. George: Clean Technology Group
- C2ML project (EPSRC): Chemical manufacturing with light
  - Artemisinin project (Sanofi, Gates Foundation): Photochemical oxidations
  - Synflow project (EU FP7): Challenging heterogeneous hydrogenations
    - Heterogenized asymmetric enamide hydrogenations
    - Bimetallic nanoparticles for amide and ester hydrogenations
  - Glivec project: Challenging amide coupling reactions
  - Cloud Chemistry project: Automated continuous flow synthesis

## Teaching Experience

- Dec. 2015–present (192 hours/year) **Associate Professor: National Conservatory of Arts and Crafts**  
Regular classroom based approaches
- *Organic Chemistry*: Lectures, tutorials and practical courses
  - *Formulation Chemistry*: In charge of the entire teaching unit
  - *Chemical Biology*: Lectures and tutorials in biosynthesis
- Oct. 2014–Jul. 2015 (30 hours/year) **Academic Tutor: School of Chemistry, University of Nottingham**
- *Organic Chemistry*: Module Year 1 tutorials
- Sep. 2008–Jul. 2011 (64 hours/year) **Academic Monitor: School of Pharmacy, Paris-Sud University**
- *Organic Chemistry*: Module Year 1 & Year 2 tutorials and practical courses

## Education

- Sep. 2008–Jul. 2012 **PhD in Organic Chemistry, School of Pharmacy, Paris-Sud University (now Paris-Saclay)**  
*Conception and synthesis of pyrrolidine analogues of Lobelia alkaloids as potential neuronal nicotinic acetylcholine receptors* (highest level of distinction)  
Supervisor: Pr. Delphine Joseph, BioCIS-CNRS Laboratory
- Sep. 2008–Feb. 2011 **PharmD, School of Pharmacy, Paris-Sud University**  
*Role of Lobelia alkaloids in dopamine-based therapies* (thesis prize)  
Supervisor: Pr. Delphine Joseph, BioCIS-CNRS Laboratory
- Sep. 2006–Jul. 2008 **M. Res. Organic Chemistry, School of Pharmacy, Paris-Sud University**  
*High pressure activation of Michael and aza-Michael additions* (ranked first)  
Supervisor: Pr. Delphine Joseph, BioCIS-CNRS Laboratory
- Sep. 2001–Jul. 2006 **Pharmaceutical degree School of Pharmacy, Paris-Sud University**

## Awards, Fellowships & Memberships

- 2018 (PI): Fonds de Recherche France Canada, *Supports Synergiques pour la Photocatalyse* (USD 13,500)  
2018 (PI): Bill & Melinda Gates Foundation, *Novel Artemisinin Manufacturing Technologies* (USD 375,000)  
2017 (PI): American Chemical Society, Green Chemistry Institute, *Ignition Grant* (USD 25,000)  
2016: Junior Professorship M2, TU Braunschweig, *declined*  
2014: Poster Prize Dechema 7<sup>th</sup> Green Solvents Conference (Dresden)  
2012: Pharmacy Laureate (Thesis prize, Université Paris-Sud)  
2008: Postgraduate Merit Scholarship (French Ministry of Science, Education & Technology)  
2008: Postgraduate Scholarship (Servier, French Medicinal Chemistry Society), *declined*  
Member of the French Chemical Society since 2016, Fellow of the Royal Society of Chemistry since 2015  
Peer Review: *ACS Sustainable Chem. Eng., Org. Process Res. Dev., React. Chem. Eng., Org. Lett., RSC Adv., New J. Chem., Photochem. Photobiol*

### Independent Work at Cnam:

21. “Applications of Sensitized-Semiconductors as Heterogeneous Visible-Light Photocatalysts in Organic Synthesis”, D. Franchi\*, **Z. Amara**\*, *ACS Sustain. Chem. Eng.* **2020**, 8, 15405–15429 [7.63, 0]
20. “Chemo- and Diastereoselective Hydrosilylation of Amorphadiene toward the Synthesis of Artemisinin”, G. Schwertz, A. Zanetti, M. Nascimento de Oliveira, M. A. Gomez Fernandez, **Z. Amara**\*, J. Cossy\*, *J. Org. Chem.*, **2020**, 85, 9607-9613 [4.34, 0]
19. “Photocatalysis Meets Magnetism: Designing Magnetically Recoverable Supports for Visible-Light Photocatalysis”, J. C. S. Terra, A. Desgranges, C. Monnereau, E. H. Sanchez, J. A. De Toro, **Z. Amara**\*, A. Moores\*, *ACS Appl. Mater. Interfaces*, **2020**, 12, 24895-24904 [8.76, 2]
18. “Continuous Flow Photo-oxidations Using Supported Photocatalysts on Silica”, V. Blanchard, Z. Asbai, K. Cottet, G. Boissonnat, M. Port, **Z. Amara**\*, *Org. Process Res. Dev.*, **2020**, 24, 822-826 [3.02, 2]
17. “Crystallization-Induced Diastereoisomer Transformation of Dihydroartemisinic Aldehyde with the Betti Base”, A. Zanetti, P. Chaumont-Olive, G. Schwertz, M. Nascimento de Oliveira, M. A. Gomez Fernandez, **Z. Amara**\*, J. Cossy\*, *Org. Process Res. Dev.*, **2020**, 24, 850-855 [3.02, 1]
16. “Synthesis of Amorpha-4,11-Diene from Dihydroartemisinic Acid”, G. Schwertz, A. Zanetti, M. Nascimento de Oliveira, M. A. Gomez Fernandez, F. Dioury, J. Cossy\*, **Z. Amara**\*, *Tetrahedron*, **2019**, 75, 743-748 [2.65, 2]
15. “Outer-Sphere Effects in Visible-Light Photochemical Oxidations with Immobilized and Recyclable Ruthenium Bipyridyl Salts”, B. Tambosco, K. Segura, C. Seyrig, D. Cabrera, M. Port, C. Ferroud, **Z. Amara**\*, *ACS Catal.* **2018**, 8, 4383-4389 [12.35, 9]

### Postdoctoral Work:

14. “Stable Liquid Foams from a New Polyfluorinated Surfactant”, M. Russo, **Z. Amara**, J. Fenneteau, P. Chaumont-Olive, I. Maimouni, P. Tabeling, J. Cossy\*, *Chem. Commun.*, **2020**, 56, 5807-5810 [6.16, 1]
13. “Continuous Photo-Oxidation in a Vortex Reactor: Efficient Operations using Air Drawn from the Laboratory”, D. S. Lee, **Z. Amara**, C. Clark, Z. Xu, K. Zeyuan, M. Bruce, H. Morvan, S. Pickering, M. Poliakoff\*, M. George\*, *Org. Process Res. Dev.* **2017**, 21, 1042 [3.02, 26]
12. “Continuous Niobium Phosphate Catalysed Skraup Reaction for Quinoline Synthesis from Solketal”, J. Jin, S. Guidi, Z. Abada, **Z. Amara**, M. Selva, M. W. George, M. Poliakoff\*, *Green Chem.* **2017**, 19, 2439 [9.13, 18]
11. “Enabling the Scale-Up of a Key Asymmetric Hydrogenation Step in the Synthesis of an API Using Continuous Flow Solid-Supported Catalysis”, **Z. Amara**, M. Poliakoff\*, R. Duque, D. Geier, G. Franciò\*, C. M. Gordon, R. E. Meadows, R. Woodward, W. Leitner\*, *Org. Process Res. Dev.* **2016**, 20, 1321 (ACS Editors’ Choice, open access) [3.02, 38]
10. “Automated Serendipity in Self-Optimised Continuous Flow Reactors”, **Z. Amara**\*, R. A. Skilton, E. Streng, J. Jing, M. W. George, M. Poliakoff\*, *Eur. J. Org. Chem.* **2015**, 6141 [3.07, 27]
9. “Investigating Scale up and Further Applications of DABAL-Me<sub>3</sub> Promoted Amide Couplings”, D. S. Lee\*, **Z. Amara**\*, M. Poliakoff, T. Harman, G. Reid, B. Rhodes, S. Brough, T. McNally, S. Woodward\*, *Org. Process Res. Dev.* **2015**, 19, 831 [3.02, 14]
8. “Applying Green Chemistry to the Photochemical Route to Artemisinin”, **Z. Amara**, J. F. B. Bellamy, R. Horvath, S. J. Miller, A. Beeby, A. Burgard, K. Rossen\*, M. Poliakoff\*, M. W. George\*, *Nature Chem.* **2015**, 7, 489 (Highlighted in *Science*, **2015**, 348, 6239) [25.87, 103]
7. “Photocatalytic Hydroxylation of Boronic Acids using Continuous Flow Reactors”, I. G. T. M. Penders, **Z. Amara**, R. Horvath, K. Rossen, M. Poliakoff, M. George\*, *RSC Adv.* **2015**, 5, 6501 [3.29, 28]
6. “Remote-controlled experiments with cloud-chemistry”, R. A. Skilton, R. A. Bourne, **Z. Amara**, R. Horvath, J. Jin, M. J. Scully, E. Streng, S. L. Y. Tang, P. A. Summers, J. Wang, E. Pérez, N. Asfaw, G. L. P. Aydos, J. Dupont, G. Comak, M. W. George, M. Poliakoff\*, *Nature Chem.* **2015**, 7, 1 [25.87, 43]

### PhD Work:

5. “Switchable Stereocontrolled Divergent Synthesis Induced by Aza-Michael of Deactivated Primary Amines and Acid Catalysis”, **Z. Amara**, E. Drège, C. Troufflard, P. Retailleau, M.-Tran Huu-Dau, D. Joseph\*, *Chem. Eur. J.* **2014**, 20, 15840 [5.37, 13]
4. “Thermodynamic Epimeric Equilibration and Crystallisation-Induced Dynamic Resolution of Lobelanine, Norlobelanine and Related Analogues”, **Z. Amara**, G. Bernadat, P.-E. Venot, P. Retailleau, C. Troufflard, F. Le Bideau\*, D. Joseph\*, *Org. Biomol. Chem.* **2014**, 12, 9797 (Front Cover Picture) [3.41, 12]

3. "Recent Contributions from the Aza-Michael Reaction to Asymmetric Alkaloids Total Synthesis", **Z. Amara**, J. Caron, D. Joseph\*, *Nat. Prod. Rep.* **2012**, *30*, 1211 [12.00, 95]
2. "Solvent-Free Double Aza-Michael under Ultrasound Irradiations: Diastereoselective Sequential One-Pot Scalable Synthesis of Pyrrolidine Lobelia Alkaloids Analogues", **Z. Amara**, E. Drège, C. Troufflard, P. Retailleau, D. Joseph\*, *Org. Biomol. Chem.* **2012**, *10*, 7148 [3.41, 28]
1. "Amine Mediated Tandem Conjugative Isomerisation-Bridging Michael Addition: Concise Synthesis of 1-Azabicyclo[3.3.1]nonane", A. N. Ngo, K. Kassimi, **Z. Amara**, E. Drège, D. Joseph\*, *Tetrahedron Lett.* **2012**, *53*, 3296 [2.38, 3]

**Selected List of Oral Communications (total 16)**

**Poster Communications = total 17**

List of Invited Lectures:

- Colloque « Lumière sur la Chimie Organique » (Nantes – **2020**) *Shedding new lights on artemisinin synthesis*
- Journées d'automne du Groupe de Recherche CNRS Synth-Flux, (Rouen – **2019**) *Réactions de Photo-oxidations intensifiées : Hétérogénéisation de photocatalyseurs et transposition en flux continu*
- Seminar Department of Chemistry, University McGill (Montréal – **2020**) *New photochemical and non-photochemical routes to the antimalarial drug artemisinin*
- 9<sup>ème</sup> Symposium Francophone de Synthèse Totale, SFST9 (Nantes – **2019**) *Photo-oxidations with Supported Photocatalysts & Applications to Natural Products Synthesis*
- Institut de Chimie Moléculaire de Reims (Reims – **2018**) *Immobilization of Photocatalysts and Continuous Flow Photochemistry: a Study of Reactivity and Intensification of Photo-Oxidation Processes*