Dr Zacharias AMARA Maître de Conférences
Curriculum Vitae *German Citizenship, born 22/11/1983, married, 1 child*

Research Experience

Jan. 2016–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
- Co-supervision of 6 postdocs, 2 visiting PhD students, 2 technicians, 5 MSc students
- Scientific advisor for startups 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

Jan. 2016–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**
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 7th 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
Reviewer: *ACS Sustainable Chem. Eng., Org. Process Res. Dev., React. Chem. Eng., Org. Lett., RSC Adv., New J. Chem.*

List of Publications, H index 12 (*= corresponding author) [Impact factor, cit.]

19. "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.*, **Submitted**

18. "Chemo- and Diastereoselective Hydrosilylation of Non-Conjugated Dienes: A Practical Route Towards Artemisinin from Amorphadiene" G. Schwertz, A. Zanetti, M. Nascimento de Oliveira, M. A. Gomez Fernandez, **Z. Amara***, J. Cossy*, *J. Org. Chem.* **Submitted**

17. "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**, 10.1021/acs.oprd.9b00420 [2.53, 0]

16. "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**, 10.1021/acs.oprd.9b00481 [2.53, 0]

15. "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 [2.65, 1]

14. "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 [10.61, 3]

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 [2.53, 18]

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, 14]

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) [2.53, 26]

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, 20]

9. "Investigating Scale up and Further Applications of DABAL-Me_3 Promoted Amide Couplings" D. S. Lee*, **Z. Amara***, M. Poliakoff, T. Harman, G. Reid, B. Rhodes, S. Brough, T. McInally, S. Woodward*, *Org. Process Res. Dev.* **2015**, *19*, 831 [2.53, 12]

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, 82]

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, 25]

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, 38]

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, 14]

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*) [3.56, 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 [11.01, 84]

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 [3.56, 27]

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, 2]

Selected List of Oral Communications (total 16) **Poster Communications** = total 17

- Colloque “Lumière sur la Chimie Organique" (Nantes – **2020**) *Organic Photochemistry with Solid Particles* [Invited Lecture]
- Séminaires Département de Chimie Université McGill (Montréal – **2020**) *New photochemical and non-photochemical routes to the antimalarial drug artemisinin* [Invited seminar]
- Groupe de Recherche CNRS Synth-Flux, LabFact (Rouen – **2019**) *Photo-oxidations using Supported Photocatalysts: Application to the Continous Flow Production of Juglone* [Invited talk]
- 9ème Symposium Francophone de Synthèse Totale, SFST9 (Nantes – **2019**) *Photo-oxidations with Supported Photocatalysts & Applications to Natural Products Synthesis* [Invited keynote]
- 27th IUPAC Photochemistry (Dublin, Ireland – **2018**) *Visible-Light Photochemical Reactions with Immobilized and Recyclable Photocatalysts* [Oral communication]
- Institute of Molecular Chemistry Reims (Reims, France– **2018**) *Immobilization of Photocatalysts and Continuous Flow Photochemistry: a Study of the Reactivity and Intensification of Photo-Oxidation Processes* [Invited lecture]
- 6th EuCheMS Chemistry Congress (Seville, Spain – **2016**) *Industrial Applications of Immobilized Catalysis in Flow* [Oral presentation]
- 3rd International Symposium on Green Chemistry (La Rochelle, France – **2015**) *Continuous Flow Heterogeneous Catalytic Pharmaceutical Synthesis* [Oral communication]