

# Dr Yves QUENEAU

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Research Director at CNRS

Head of the Organic and Biorganic Chemistry Lab in INSA Lyon

and Deputy-Head of the Institut de Chimie et Biochimie

Moléculaires et Supramoléculaires (ICBMS), Lyon, France



## Education, positions and awards:

Since 2011	Head of the Organic and Bioorganic team of ICBMS at INSA Lyon
Since 2009	Honorary professor at the University of Hull, UK, Department of Chemistry.
2007	Promoted Directeur de Recherche 1 <sup>st</sup> Class
Since 2004	Deputy-director of the main synthetic organic chemistry department of the University of Lyon, named since 2007 "Institut de Chimie et Biochimie Moléculaires et Supramoléculaires (UMR 5246) (175 persons)
1998	Prize for Scientific Innovation "Millésimé Europol'Agro" (Alternative uses of renewable carbohydrates)
1995	Promoted to Directeur de Recherche au CNRS, in a mixed industry-academy research lab dedicated on Suchochemistry (Lyon) and director of this lab from 1999 to 2003
1994	Bronze Medal of the CNRS
1991	Post doc: Memorial Sloan Kettering Cancer Center, New York, synthesis of taxanes, Prof S.J. Danishefsky
1988	Appointed at CNRS as Chargé de Recherche, carbohydrate chemistry, Orsay
1988	PhD in Organic Chemistry at University of Paris Orsay, water as green solvent, Prof A. Lubineau

**Research interests:** Bioorganic chemistry and carbohydrate chemistry towards functional derivatives and bioactive derivatives. Development of the synthon CMG lactone. Application to targets of biological interest: glycopeptides, pseudo oligosaccharides, glycosteroïdes, peptidomimetics. Reactivity of unprotected carbohydrates. Use of sugars as organic raw materials. Carbohydrate based liquid crystals. Selectivity, catalysis, solvents. Chemistry in water. Multistep synthesis of inhibitors of the quorum sensing.

**International collaborations:** United Kingdom : Honorary Professor at the university of Hull. China: University of Xiamen. Chair of a Franco Chinese workshop in Lyon in 2006, Co-chair of a workshop in Xiamen in 2007 and in Shanghai in 2014, Guest editor of two special issue on collaborations in chemistry between China and France (Comptes Rendus Chimie, 2008, issue 1 and of Science in China Chemistry, 2010, issue 9). Chili (Santiago). Portugal (Lisbon). India (Pune).

**Publications, conferences and communications:** 151 contributions (112 articles, 14 book chapters, 3 book co-editions, 7 proceedings, 4 editorials and popularization articles, 10 patents and extensions). Conferences and seminars: 156. Other communications: 226.

**Supervision and co-supervision:** PhD: past: 20, presently 3, + within collaborative projects in other labs: past 4 + 4 present. Other co-workers in whole career: 12 Post docs and 40 undergraduate students.

**Teaching:** *Present:* Biorefinery post master programme, INP Grenoble. Master Pro Chimie et Environnement, University of Savoie, Chambéry. Département Biosciences, INSA Lyon. Department of Chemistry, University of Hull, UK. E-learning course on carbohydrate chemistry, University of Lisbon, Portugal. ECUST, Shanghai, HUST, Wuhan. *Past:* University of Paris Orsay.

## Expertise and boards:

Editorial board of the RSC book series "Carbohydrate Chemistry", Specialist periodical reports. Advisory board du Mediterranean Journal of Chemistry. Advisory board of the Journal of Carbohydrate Chemistry. Referee for: Journal of the American Chemical Society, Journal of Organic Chemistry, Organic Letters, European Journal of Organic Chemistry, Tetrahedron, Tetrahedron Asymmetry, Tetrahedron Letters, Synthesis, Synlett, Letters in Organic Chemistry, Carbohydrate Research, Journal of Carbohydrate Chemistry, Green Chemistry, Green Chemistry Letters and Reviews, Journal of Molecular Catalysis, Comptes Rendus Chimie, Croatica Chemica Acta, Biomacromolecules, Biochimie, Journal of Agricultural and Food Chemistry, Journal of Physical Chemistry, Molecules, Macromolecules, Topics in Current Chemistry, Journal of Surfactants and Detergents, Organic and Biomolecular Chemistry, Bioorganic and Medicinal Chemistry, Chemistry and Physics of Lipids, Journal of Polymer Research, Journal of Enzyme inhibition and Medicinal Chemistry, European Journal of Medicinal Chemistry, Mediterranean Journal of Chemistry, Current Organic Chemistry, Chinese Journal of Chemistry, Beilstein Journal of Organic chemistry, Sensors.

## Invited lectures in international meetings:

Meeting of the National Tunisian Chemical Society, Monastir, 2012. Bioinspired materials, Nice, 2012. Green Chemistry for Industry 2011, Lille. Bilateral Sino-French Conference on Green Chemistry, Guangzhou, 2011. Iberian Carbohydrate Meeting, 2011. Biovision 2011, Lyon. Annual seminar of the Belgium Royal Society of Chemistry, Gembloux, 14 oct 2010. . 6th GERLI meeting, Rennes, 2 juillet 2009, 2<sup>nd</sup> Bioresources summit, NEPIC, Sedgefield, Durham, 25th nov 2008, XVth symposium AVH, "Utilisation of sugars as raw materials for chemical and biotechnological applications and eco-compatible processing", Reims, March 2008. From black to green gold: tomorrow towards a selected chemistry, Lyon, France, 2007. Université de l'Environnement, Lyon, France 2007. 14<sup>th</sup> European Carbohydrate Symposium, Lübeck, Germany, Septembre 2007. Glupor 6 and 3<sup>rd</sup> Iberian Carbohydrate Symposium, Coimbra, Portugal, 2005. International Workshop on Carbohydrates in Natural Products Chemistry, Cracow, Poland, 2005. International Symposium on Green Chemistry. use of renewable ressources. Poitiers, France, 2003. COST Meeting "Towards New Processes for Chemistry", Carry le Rouet, France, 2001. XI<sup>th</sup> European Carbohydrate

Symposium. Lisbonne, Portugal, 2001. COST Workshop on Preparative Aspects of Sonochemistry, Chambéry, France, 2000. International Seminar on Specialty Chemicals for the 21<sup>st</sup> Century, Valbonne, France, 1999. Conference COST D10 "Towards Environmentally benign processes using sonochemistry", Chambéry, France, 1999. Workshop Lyon-Lodz, Ruciane-Nida, Pologne, 1999. Young Chemist Workshop on Extreme and non classic conditions, Gottingen, Germany, 1995. Young Organic Chemist workshop, Rocamadour, France, 1994.

### Selected Recent Publications

- 1 Biobased solvents for the Baylis Hillman reaction of HMF. J. N. Tan, M. Ahmar, Y. Queneau, *RSC Adv.* **2015**, 5, 69238-69242.
- 2 A Pyranose-2-phosphate Motif is Responsible for both Antibiotic Import and Quorum-Sensing Regulation in *Agrobacterium tumefaciens*. A. El Sahili, S. L. Li, J. Lang, C. Virus, S. Planamente, M. Ahmar, B. G. Guimaraes, M. Aumont-Nicaise, A. Vigouroux, L. Soullère, J. Reader, Y. Queneau, D. Faure, S. Moréra, *PLOS Pathogens*, **2015**, 11, e1005071.
- 3 Synthesis and use of new C-glycosyl bicyclic lactones. A. Listkowski, O. Otman, S. Chambert, Y. Queneau, *Tetrahedron Lett.*, **2015**, 56, 5051-5053.
- 4 A convenient method for phosphorylation using triallyl phosphate. S. L. Li, M. Ahmar, Y. Queneau, L. Soullère, *Tetrahedron Lett.* **2015**, 56, 4694-4696.
- 5 Glucosyloxymethylfurfural (GMF): a creative renewable scaffold towards bioinspired architectures. J. N. Tan, M. Ahmar, Y. Queneau, *Pure Appl. Chem.*, **2015**, 87, 827-839.
- 6 Effect of Fatty Chains vs Cholesteryl Balance on the Self-organizing Behaviour of Glycosteroidal Bolaphiles: Insights into Lipidic Microsegregation. R.Xu, F. Alirachedi, S. Chambert, F. Ferkous, Y. Queneau, S.J. Cowling, E.J. Davis, J.W. Goodby, *Org. Biomol. Chem.*, **2015**, 13, 783-792.
- 7 Development of a high-throughput assay for measuring phospholipase A activity using synthetic 1,2- $\alpha$ -eleostearoyl-sn-glycero-3-phosphocholine coated on microtiter plates, M. El Alaoui, A. Noiriél, L. Soullère, L. Grand, Y. Queneau, A. Abousalham, *Anal. Chem.* **2014**, 86, 10576-10583.
- 8 Red Emitting Neutral Fluorescent Glycoconjugates for Membrane Optical Imaging. S. Redon et al. *Bioconjugate Chem.* **2014**, 25, 773-787.
- 9 Isomaltulose oxidation and dehydration products as starting materials towards fine chemicals, J. N. Tan et al., *Curr. Org. Chem.*, **2014**, 18, 1768-1787.
- 10 At a supra-physiological concentration, human sexual hormones act as quorum-sensing inhibitors. A. Beury-Cirou; M. Tannières; C. Minard; L. Soullère; T. Rasamiravaka; R. H. Dodd; Y. Queneau; Y. Dessaux; C. Guillou; O. M Vandeputte; D. Faure, *PLOS One*, **2013**, E 8(12): e83564.
- 11 N,N'-alkylated Imidazolium-Derivatives act as Quorum-Sensing Inhibitors Targeting the Pectobacterium atrosepticum-induced Symptoms on Potato Tubers, Y. Raoul des Essarts et al, *Int. J. Mol. Sci.* **2013**, 14, 19976-19986.
- 12 HMF derivatives as platform molecules: Aqueous Baylis-Hillman reaction of glucosyloxymethyl-furfural towards new biobased acrylates, J. N. Tan, M. Ahmar, Y. Queneau, *RSC Advances*, **2013**, 3, 17649-17653.
- 13 AHL signalling molecules enhance biofilm. A. González et al. *Appl. Microbiol. Biotechnol.* **2013**, 97, 3729-3737.
- 14 Hydrophobic and hydrophilic balance and its effect on mesophase, M. K. Singh et al., *Chem. Eur. J.* **2013**, 19, 5041-5049.
- 15 A new route towards fimbrolide analogues, M. Sabbah et al., *Med. Chem. Commun.* **2013**, 4, 363-366.
- 16 Glyco-lipids as a source of original linear and cross-linked polyurethanes, A. Boyer et al. *Polymer. Chem.*, **2013**, 4, 296-306.
- 17 Synthesis and biological evaluation as LuxR-dependent Quorum-Sensing modulators of new N-acyl-homoserine-lactone analogues based on triazole and tetrazole scaffolds. M. Sabbah et al. *Bioorg. Med. Chem.* **2012**, 20, 4727-4736.
- 18 Sequestration of edible oil using microcapsules from plant spores, A. Diego-Taboada et al. *J. Mater. Chem.* **2012**, 22, 9767.
- 19 LuxR dependent quorum sensing inhibition by imidazolium salts. M. Sabbah et al. *Biorg. Med Chem*, **2011**, 19, 4968-4875.
- 20 Generation of Well-Defined Clickable Glycopolymers from Aqueous RAFT Polymerization of Isomaltulose-Derived Acrylamides. O. Abdelkaderet al. *J. Polym. Sci. A.* **2011**, 49, 1309-1318.
- 21 Mechanisms and Synthetic Modulators of AHL-dependent Gene Regulation. A. M. Stevens et al., *Chem. Rev.* **2011**, 111, 4-27.
- 22 Carbohydrates in sustainable development, Part 1. Renewable resources for chemistry and biotechnology, Part 2. A mine for new synthons and materials. Eds. A. P. Rauter, Y. Queneau, P. Vogel, Topics in Current Chemistry Vol 294 & 295, Springer: Heidelberg, **2010**.
- 23 Functionalization of carbohydrates in water, M.-C. Scherrmann, A. Lubineau, Y. Queneau, "Handbook of Green Chemistry", P. Anastas, Ed. Volume 5 "Green solvents. Reactions in water", C. J. Li, Ed., Wiley, **2010**, 291-330
- 24 Neutral Push-Pull Chromophores for Nonlinear Imaging of Membrane. C. Barsu et al. *Org. Biomol. Chem.*, **2010**, 8, 142-150.
- 25 Enantioselective synthesis of Ypoamide, J. Chen et al, *J. Org. Chem.* **2009**, 74, 7457.
- 26 The unusual self organization of a carbohydrate bolaphile, F. Alirachedi et al, *Chem. Commun*, **2009**, 6355.