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Geraldine Masson

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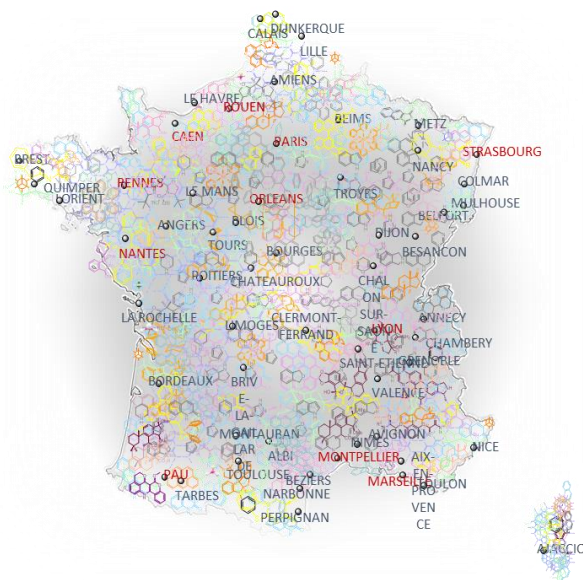
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La chimie organique en France : une longue tradition qui persiste !

Géraldine Masson*

Institut de Chimie des Substances Naturelles, CNRS UPR 2301, Université Paris-Sud, Université Paris-Saclay, 1, av. de la Terrasse, 91198 Gif-sur-Yvette Cedex, France

France is known worldwide for its gastronomy, art, cultural diversity, and, last but not least, for being a country of an incredible complexity. Higher education in France is the perfect example of how intricate a French system might be, with a very specific academic structuration, not only based on universities, but also on specialized schools, different institutes, and the famous “grandes écoles.” Where many would consider it a very odd habit to render complex what should be kept simple, one (mostly French people!) could argue that it represents a unique way to explore new ideas with the mindset to apprehend the intricacy and subtlety in everything. Whether or not it has contributed to the emergence of extremely talented chemists remains uncertain, but undisputable is the fact that chemistry, organic chemistry in particular, holds a remarkably strong French lineage.



Ever since “alchemy,” a blend of myths, magic, religion, and so forth disappeared for the benefit of the true rational science, which is now referred to as “modern chemistry,” the French contribution to this scientific domain has been considerable. At the end of the 18th century, the emergence of this new field of research notably became possible thanks to Antoine Laurent Lavoisier, the “father of modern chemistry.” Among many other things, his work allowed us to switch from a purely qualitative observation of chemical transformations to a more rational quantitative reasoning. Owing to Lavoisier, the famous motto “Nothing is lost, everything is transformed” is engraved in the minds of chemists everywhere. Whereas he also contributed, with Louis-Bernard Guyton-Morveau, Claude-Louis Berthollet, Antoine-François Fourcroy, Jean Henri Hassenfratz, and Pierre Auguste Adet, to reform chemical nomenclature, other famous French chemists who had a major impact include Henri Moissan (1906 Nobel Prize) who discovered elemental fluorine, Joseph Gay-Lussac, Charles F. Gerhardt and Charles A. Wurtz who

contributed to the understanding of the structure of organic molecules, and Louis Pasteur who introduced the concept of chirality. Other major advances in stereochemistry were later introduced by Joseph Le Bel, concomitantly developed by the Dutch chemist Jacobus Hendricus van't Hoff, which aided the advancement and progression of chemistry further.

As mentioned by Marcellin Berthelot, « la chimie crée son objet » (Chemistry creates its object). It certainly drove the discovery of several important named organic reactions at the end of the 19th and the beginning of the 20th century. For instance, Charles Friedel together with American chemist James Mason Crafts disclosed the reaction which, in addition to carrying their names, still constitutes one of the most powerful methods for the functionalization of arenes. Auguste G. Darzens, a Russian-born French chemist, reported the Darzen's condensation for the preparation of epoxides. Other major contributions include the discovery of the organomagnesium reagents by Victor Grignard (Philippe Barbier's student) and the metal-catalyzed hydrogenations of olefins by Paul Sabatier. These latter works were recognized by the 1912 Nobel Prize in Chemistry, one year after the Nobel Prize had been awarded to Marie Curie for the discovery of the two radioactive elements: radium and polonium.

More recently, French chemists have not ceased to play decisive roles in shaping the future of this discipline. Jean-Marie Lehn, together with Donald Cram and Charles Pedersen, received the 1987 Nobel Prize in Chemistry for the development of three-dimensional multidentate ligands, known as cryptands. Lehn is also renowned worldwide for his tremendous contribution to the domain of supramolecular chemistry. Jointly with Robert H. Grubbs and Richard R. Schrock, Yves Chauvin received the 2005 Chemistry Nobel Prize for his contribution to the elucidation of the olefin metathesis reaction mechanism. The Royal Sweden Academy of Science also honored another French chemist in 2016, Jean-Pierre Sauvage, for the design and synthesis of molecular machines, together with James Fraser Stoddart and Bernard Lucas Feringa.

Aside from these prestigious prizes, many French chemists have significantly contributed to countless major advances in organic chemistry. Because it would be impossible to give an exhaustive list in this short essay, we will only cite a selected few herein. Both Henri Normant and his son, Jean-François, played a key role in the field of organometallic chemistry, notably through the development of new solvents (HMPA and THF) and original copper-based processes (carbocupration of alkynes). The Julia brothers, Marc and Sylvestre, are well known for their work concerning the development of stereoselective olefination methods. Robert Corriu and his Japanese contemporaries Makoto Kumada and Kohei Tamao independently reported the "Kumada-Tamao-Corriu" reaction, one of the first nickel-catalyzed cross-coupling reactions.

Pierre Sinaÿ, notably through his discovery of glycoside formation via imidates, has greatly influenced the expansion of glycochemistry. Henri B. Kagan is widely recognized as a one of the pioneers in the field of asymmetric catalysis, notably by introducing the concept of nonlinear effects, and has studied transformations based on the use of SmI_2 , commonly referred to as “Kagan’s reagent.” Pierre Potier has been influential in the field of isolation/structure elucidation/synthesis of natural products. His more decisive contributions to science and health sciences are certainly the development of the two anticancer drugs, Navelbine and Taxotere, which are still in use nowadays. Finally, France has also been the welcome home of numerous brilliant scientists, including Derek H. R. Barton, Robert H. Crabtree and Hugh Felkin, among many others.

At the present time, France is still the home of much innovative organic chemistry research conducted by my talented and dear French colleagues, of whom I would not dare to give a comprehensive list inasmuch as I would certainly forget to mention major contributors. Among the different domains currently covered in our country: total synthesis, carbene chemistry, radical chemistry, supramolecular chemistry, catalysis, organometallic catalysis, asymmetric metal/ organo-promoted catalysis, enzymatic catalysis, green processes, photochemistry, electrochemistry and theoretical calculation, just to cite a few. To scratch the surface and entice the reader to explore further, we present a [virtual issue of *The Journal of Organic Chemistry*](#) in which several talented established and young researchers have been selected for a total number of 25 research articles published over the past two years. We hope that you will enjoy reading their works, as we believe they represent the next generation of French organic chemists in all its diversity and richness.

Géraldine Masson, Associate Editor
orcid.org/0000-0003-2333-7047

Notes

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