M. Malacria

The author presented on this page has published more than **25 articles** since 2000 in Angewandte Chemie, most recently: "Palladium-Catalyzed Reaction of Aryl Iodides with *ortho*-Bromoanilines and Norbornene/Norbornadiene: Unexpected Formation of Dibenzoazepine Derivatives": N. Della Ca', G. Maestri, M. Malacria, E. Derat, M. Catellani, *Angew. Chem.* **2011**, *123*, 12465–12469; *Angew. Chem. Int. Ed.* **2011**, *50*, 12257–12261.

Max Malacria

Date of birth:	February 7, 1949
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Education:	1970 MSc, Université de Aix-Marseille III (France) 1974 PhD in Chemistry from the Université de Aix-Marseille III under the supervision of Professor Marcel Bertrand 1981–1983 Postdoctoral position (NATO Scholarship) at the University of California, Berkeley, under the supervision of Professor K. Peter C. Vollhardt
Awards:	**2001** Médaille d'argent of the CNRS; **2009** Prix Catalan–Sabatier, Spanish Royal Society of Chemistry; **2010** William G. Dauben Memorial Lectureship, University of California, Berkeley
Current research interests:	Transition-metal-catalyzed cyclization and cycloisomerization; radical chemistry; asymmetric synthesis involving heteroatoms (S, P, N, I); new hybrid materials; self-assembled molecules
Hobbies:	Hiking, music, gastronomy, oenology

What I appreciate most about my friends is … loyalty and frankness.

The greatest scientific advance of the last decade was … published at the very beginning of the 21st century: the first draft sequence and analysis of the human genome.

I am waiting for the day when someone will discover … the economic system that allows the problems of famine and disparities between human beings to be solved.

Science is fun because … most of the time, when you find a solution it opens new doors to a lot of original questions.

My favorite saying/quote is … related to the previous question, "Science is always wrong. It never solves a problem without creating ten more" (George Bernard Shaw).

The most significant historic event of the past 100 years was … the creation of the European Community, which still needs to be consolidated.

If I could be anyone for a day, I would be … an astronaut. I am fascinated with flight, and being part of a hard-working team doing chemical experiments in space while looking at our beautiful blue planet must be magical.

My first experiment was … carrying out a Grignard reaction on a 3 mole scale in 1969; it taught me how to work, and to like organometallic chemistry.

My favorite way to spend a holiday is to go to … Calvi in Corsica—my favorite mediterranean island—where the mountains and the sea create a kind of paradise.

My favorite name reaction is … the Grignard Reaction, which was a milestone in organometallic chemistry and opened the way to modern and elegant synthesis.

My science "heroine" is … Marie Curie, a woman in science at the beginning of the 20th century, and a model for every scientist.

The most important thing I learned from my students is … to stay young in my mind and curious.

My favorite science author is … Leonardo da Vinci, the Renaissance "uomo universale".

My favorite painter is … Paul Cézanne, the pioneer of pictorial modernism.

My favorite book is … "Les fleurs du mal" by Charles Baudelaire: pure poetry with constructive imagination.

My motto is … respect and fair play, work hard with perseverance and a fighting spirit.

The natural talent I would like to be gifted with … like Napoleon Bonaparte, to not need much sleep but also be creative and efficient.

How has your approach to chemistry research changed since the start of your career?

I started my career more than forty years ago, so my answer is quite trivial: it is a matter of size, back then we were thinking mole, when now it is almost nanomole! The development of computer science has allowed the synthetic chemist to work on a very small scale for a better efficiency and a greater respect for the environment.

What do you think the future holds for your field of research?

Even if synthesis has reached a superb level of performance nowadays, there is plenty of room for improvement. I am convinced efforts will be devoted to finding even more elegant, practical, efficient, ecologically friendly, economical, and energy-saving syntheses and processes. Environmental awareness will be the next major challenge facing researchers. In this context, catalysis will remain a major area of research with the aim of finding new environmentally benign and highly efficient catalysts that show a greater efficiency in generating chirality than enzymes. The development of very sophisticated "one-pot processes", which, through the use of compatible multiple catalysts, allow the controlled construction of very complex molecules will be a hot area of research. The use of new robotic systems for conducting very safe, fast, and precise experiments will increase. Finally, the synergy between theoretical and experimental work will improve.

My 5 top papers:

1. "The Effect of a Hydroxy Protecting Group on the $PtCl_2$-Catalyzed Cyclization of Dienynes—A Novel, Efficient, and Selective Synthesis of Carbocycles": E. Mainetti, V. Mouriès, L. Fensterbank, M. Malacria, J. Marco-Contelles, *Angew. Chem.* **2002**, *114*, 2236–2239; *Angew. Chem. Int. Ed.* **2002**, *41*, 2132–3135.
   The rediscovery of the Rautenstrauch rearrangement, which paved the way for the understanding of the reactivity of carbophilic Lewis acids such as platinum and gold, and notably their propensity to give carbene intermediates. The use of propargylic acetates as cascade reactions promoters is now widespread.
2. "New Cobalt-Catalyzed Cycloisomerization of ε-Acetylenic β-Ketoesters. Application to a Powerful Cyclization Reactions Cascade": P. Cruciani, R. Stammler, C. Aubert, M. Malacria, *J. Org. Chem.* **1996**, *61*, 2699–2708.
   An efficient route to the phyllocladane and kaurane families by a one-pot sequence of three cyclizations: cobalt-mediated ene-type, [2+2+2], and [4+2]. This new cascade stereoselectively created six carbon–carbon bonds and four rings from an easily accessible acyclic triyne, and illustrates the potential of cobalt in the design of tandem catalysis.
3. "Generation and Trapping of Cyclopentenylidene Gold Species: Four Pathways to Polycyclic Compounds": G. Lemière, V. Gandon, K. Cariou, A. Hours, T. Fukuyama, A.-L. Dhimane, L. Fensterbank, M. Malacria, *J. Am. Chem. Soc.* **2009**, *131*, 2993–3006.
   This paper is interesting as it shows how simple starting materials can evolve under the action of a gold catalyst into complex molecules. It also features an application of this method to the total synthesis of a linear triquinane, one of my favourite families of natural products. The next paper is about the building of linear triquinane skeletons with radical methods. It was a pleasure to return to these compounds ten years later, but this time using organometallic catalysis.
4. "From Acyclic Precursors to Linear Triquinanes through a Diastereoselective One-Pot Process. A New Illustration of the Synthetic Power of Radical Cascades": P. Devin, L. Fensterbank, M. Malacria, *J. Org. Chem.* **1998**, *63*, 6764–6765.
   The longest radical reaction cascade reported to date, with 11 elementary steps in a single sequence. This complex domino process exemplifies the versatility of radical cyclizations by delivering tetra- or pentacyclic triquinanes from their acyclic precursor in a diastereoselective fashion.
5. "Lanthanide Complexes of Monovacant Dawson Polyoxotungstate $[\alpha_1\text{-}P_2W_{17}O_{61}]^{10-}$ as Selective and Recoverable Lewis Acid Catalysts": C. Boglio, G. Lemière, B. Hasenknopf, S. Thorimbert, E. Lacôte, M. Malacria, *Angew. Chem.* **2006**, *118*, 3402–3405; *Angew. Chem. Int. Ed.* **2006**, *45*, 3324–3327.
   A new class of reactions catalyzed by POMs upon coordination of a suitable lanthanide atom onto a lacunary Dawson structure. These molecules provided the first example of Lewis acid catalysis by a (recyclable) POM, triggering efficient aldol condensation of imines with various vinyl ethers.

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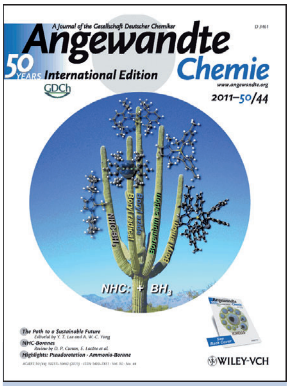

Work by M. Malacria has been featured on the cover of Angewandte Chemie: "Synthesis and Reactions of N-Heterocyclic Carbene Boranes": D. P. Curran, A. Solovyev, M. Makhlouf Brahmi, L. Fensterbank, M. Malacria, E. Lacôte, *Angew. Chem.* **2011**, *123*, 10476–10500; *Angew. Chem. Int. Ed.* **2011**, *50*, 10294–10317.