



Special issue: Chirality in France

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Dedicated to Jean-Pierre Dutasta and Christian Roussel on the occasion of their retirement and to all scientists who contributed to the development of Chirality in France. Historically, the tremendous role played by French scientists in the importance of chirality in chemistry, physics, biology, medicine, or materials science, starting with the pioneering works and discoveries of Augustin Fresnel, Jean-Baptiste Biot, Louis Pasteur, or Aimé Cotton, has been largely acknowledged by the international scientific community. The French chemists and physicists interested by chirality in the broadest sense continued this tradition over the years by being very actively involved in many chirality related research fields such as enantioselective synthesis and catalysis, analytical and chiral separation techniques, chiroptical spectroscopies, theoretical approaches, supramolecular chemistry, polymers, biomimetic systems, chiral materials, and fundamental physics. Witnessing the ever growing interest in France of this interdisciplinary topic, a French network in chirality supported by the CNRS (GDR Chirafun), gathering about 30 chemistry and physics teams from different Institutes, has emerged in 2015, following the organization of the “André Collet Chirality Days” in 2009 and 2012, which were then continued in 2015 and 2018 under the auspices of the Chirafun network, with a new edition planned for October 2022. In this year 2022 marking the bicentenary of Louis Pasteur's birth, we are deeply pleased and honored to introduce this special virtual issue of Chirality gathering 19 very high quality articles spanning different chirality related fields covering

1. historical accounts on Pasteur's resolution of tartrates (G. Vantomme and J. Crassous) and Poincaré's polarization sphere (B. Kahr);
2. reviews on the synthesis and chiroptical properties of enantiopure cryptophane derivatives (O. Baydoun, T. Buffeteau and T. Brotin), synthesis of enantiopure planar [2.2]paracyclophanes and their use in asymmetric organocatalysis (S. Felder, S. Wu, J. Brom, L. Micouin and E. Benedetti), magneto-chiral anisotropy in optics and electric transport (M. Atzori, C. Train, E. A. Hillard, N. Avarvari and G. L. J. A. Rikken), time resolved circular dichroism (TRCD) from seconds to picoseconds with a focus on the conformational dynamics of several systems of biological interest (F. Hache and P. Chagnon), chirality determination in crystals with an emphasis on X-ray diffraction (A. Valentín-Pérez, P. Rosa, E. A. Hillard and M. Giorgi), NMR spectroscopy in chiral oriented systems applied to molecular enantiodiscrimination (C. Aroulanda and P. Lesot);
3. experimental and theoretical chiroptical properties and spectroscopies of nickel (II) bis (dithiolene) complexes (A. Abhervé, N. Mroweh, T. Cauchy, F. Pop, N. Vanthuyne and N. Avarvari), calcium salt dihydrate of glyceric acid, a molecule with astrochemical relevance (J. Bockova, N. C. Jones, V. Leyva, M. Gaysinski, S. V. Hoffmann and C. Meinert), (1S,2R)-(-)-cis-1-amino-2-indanol, with a focus on intra- versus intermolecular hydrogen bond occurrence (K. Le Barbu-Debus and A. Zehnacker), a [1]rotaxane, for which the absolute configuration has been determined (A. R. Puente, A. Bessaguet, N. Pairault, G. Pieters, J. Crassous, P. L. Polavarapu, I. Opalinski and S. Papot);
4. luminescent materials based on hybrid silica-organic nanohelices (A. Scalabre, Y. Okazaki, B. Kuppan, T. Buffeteau, F. Caroleo, G. Magna, D. Monti, R. Paolesse, M. Stefanelli, S. Nlate, E. Pouget, H. Ihara, D. M. Bassani and R. Oda), oligo-(3,30-dibenzothiophene) in a LED configuration by using the concept of wireless electrochemistry (G. Salinas, S. Arnaboldi, G. Bonetti, R. Cirilli, T. Benincori and A. Kuhn), europium (III) complexes with chiral 1,10-bis-2-

naphtol-derived ligands (C. A. Mattei, K. Dhbaibi, B. Lefevre, V. Dorcet, G. Argouarch, O. Cador, B. LeGuennic, O. Maury, C. Lalli, S. Guy, A. Bensalah-Ledoux, F. Riobé, B. Baguenard and F. Pointillart)

5. transition metal redox-active coordination polymers (M. Marinova, A. Bonnefont, T. Achard, A. Maisse-François and S. Bellemin-Laponnaz) or NHC complexes (M. Savchuk, L. Bocquin, M. Albalat, Marion Jean, N. Vanthuyne, P. Nava, S. Humbel, D. Hérault and H. Clavier);
6. kinetic studies on the racemization of lithium tert-butylphenylphosphido-borane (R. Fortrie, D. Gatineau, D. Hérault, A. Béal, J.-V. Naubron, L. Giordano and G. Buono);
7. a new mathematical measure of chirality information in molecules (P. Piras).

We are convinced that this timely special issue will motivate further endeavor in chirality-related fields in France and all over the world.