

# CURRICULUM VITAE



## Jeanne CRASSOUS born COSTANTE

52 years old, married, 3 children

Group 'Phosphorus and Molecular Materials', OMC Team, Institut des Sciences Chimiques de Rennes  
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### Career

- 2010** : **Director of Research (DR2) from CNRS**, Institut des Sciences Chimiques de Rennes - University of Rennes 1.  
**2005** : **Researcher from CNRS**, University of Rennes 1.  
**2005** : **Research habilitation**, Ecole Normale Supérieure de Lyon. « *Preparation of enantioenriched molecules for the study of fundamental properties related to chirality such as the observation of parity violation effect.* »  
**1998** : **Researcher from CNRS**, Ecole Normale Supérieure de Lyon.  
**1997** : **Post-doctorant**, ETH Zurich (Switzerland) (Prof. François Diederich). « *The chirality of fullerenes* »  
**1996** : **PhD in Organic Chemistry**, Ecole Normale Supérieure de Lyon (Prof. André Collet). « *Synthesis of bromochlorofluoromethane enantiomers and determination of their absolute configuration by molecular modeling and by Raman Optical Activity.* »  
**1992** : **Teaching diploma 'Agrégration de Sciences Physiques, option Chimie'**, Ecole Normale Supérieure de Lyon.  
**1989** : **Student** at Ecole Normale Supérieure de Lyon.

### Research domains

Fundamental and applied aspects of chirality. Chiral molecular materials. Coordination and organometallic chemistry of helicenes. Chiral transition metal complexes for parity violation observation. Chiroptics (electronic and vibrational circular dichroism, circularly polarized luminescence).

**Author of 126 publications** (28: IF>9, 37: 9>IF>5) among which: 1 Chem. Rev., 1 Chem Soc Rev., 1 Coord. Chem. Rev., 1 J. Am. Chem. Soc., 11 Angew. Chem. Int. Ed., 1 Nature Comm., 5 Chem. Sci., 3 Org. Lett., 13 Chem. Commun., 1 Macromolecules, 1 Polym Chem., 19 Chem. Eur. J., 3 J. Org. Chem., 4 Inorg. Chem, 8 Chirality. H factor: **35** [orcid.org/0000-0002-4037-6067](https://orcid.org/0000-0002-4037-6067). Researcher ID: I-1182-2017

1 Monography (Molécules Chirales. Stéréochimie et Propriétés. André Collet, Jeanne Crassous, Jean-Pierre Dutasta, Laure Guy, EDP Sciences, Ed. CNRS, 2006), 6 book chapters, 2 Actualité Chimique.

**Conferences and oral Communications: 41** invited conferences (**23** abroad) and **16** oral communications (**9** abroad), **58** conferences in laboratories (**28** abroad). 5 popular science conferences.

### Selected publications

- 1) *Progress toward a first observation of parity violation in chiral molecules by high-resolution laser spectroscopy.* B. Darquié, C. Stoeffler, A. Shelkovichov, C. Daussy, A. Amy-Klein, C. Chardonnet, S. Zrig, L. Guy, **J. Crassous**, P. Souldard, P. Asselin, T. R. Huet, P. Schwerdtfeger, R. Bast, T. Saue, *Chirality*, **2010**, 22, 870-884.
- 2) *Helicene-based transition metal complexes: synthesis, properties and applications.* N. Saleh, C. Shen, **J. Crassous**, *Chem. Sci.*, **2014**, 5, 3680-3694.
- 3) *Enantiopure cycloiridiated complexes bearing a pentahelicenic N-heterocyclic carbene and displaying long-lived circularly-polarized phosphorescence.* N. Hellou, M. Srebro-Hooper, L. Favereau, F. Zinna, E. Caytan, L. Toupet, V. Dorcet, M. Jean, N. Vanthuyne, J. A. G. Williams, L. Di Bari, J. Autschbach, **J. Crassous**, *Angew. Chem. Int. Ed.* **2017**, 56, 8236-8239.
- 4) *Enantioenriched helicenes and helicenoids containing main-group elements (B,Si,N,P).* K. Dhbaibi, L. Favereau, **J. Crassous**, *Chem. Rev.* **2019**, 119, 8846-8953.
- 5) *Modulation of Circularly Polarized Luminescence Through Excited-State Symmetry Breaking and Interbranched Exciton Coupling in Helical Push-Pull Organic Systems.* K. Dhbaibi, L. Favereau, M. Srebro-Hooper, C. Quinton, N. Vanthuyne, L. Arrico, T. Roisnel, B. Jamoussi, C. Poriel, C. Cabanetos, J. Autschbach, **J. Crassous**, *Chem. Sci.* **2020**, 11, 567-576.

### Principal activities

- Coordinator of European Project ITN Network (*HELACHIROLED*, 2020-2024).
- Coordinator of ANR (PRC *Hel-NHC*, 2016-2021, ANR-PRC; *MetalHel* 2013-2017, ANR BLANC; *PHOSHELIX*, 2006-2010, ANR JCJC) and partner of ANR collaborative projects (*CPL-SMM*, 2019-2023, coord. B. Le Guennic ; *iChiralight*, 2019-2023, coord. G. Pieters ; *Helphos*, 2016-2020, coord. A. Marinetti; *NPCHEM*, 2010-2014, coord. T. Saue; *NCPMOL*, 2005-2009, coord. C. Chardonnet)
- Director of French Research Network (*GDR CHIRAFUN*, Multifunctional Chirality, renewed, 2020-2025)
- Elected member at French National Committee (CoNRS, *section 12*, 2016-2021)
- Elected member of the Laboratory Council (ENS Lyon, 2000-2005). Member of *Commissions in Chemistry* (ENS-Lyon, 2001-2005; Université d'Angers, 2011 ; Université Paul Sabatier, Toulouse, 2012; INSA Rouen 2013; AI CNRS 2013; CNRS Jury 2014; Paris Descartes 2016; Centrale Marseille 2016; Bordeaux 2018; Bochum 2019) and *HCERES* (SRSMC, Nancy 2016 ; LCR Marseille 2017 ; IPCM, Paris 2018 ; LHFA Toulouse 2019)
- President of « Journées André Collet de la Chiralité » symposia, Dinard, France (*JACC 2009*, October 2009, *JACC 2012* October 2012) and co-organizer of *JACC 2015* (4-7th October 2015 in Lyon)
- Chair of the International Symposium on Chiroptical Spectroscopy (*CD2017*, Rennes, 11-15th June 2017). Co-chair of next International Symposium on Chiral Discrimination (*Chirality 2019*, Bordeaux, 14-17th July 2019, with Chairwoman: Reiko Oda)
- Member of *International Committees of Conferences* "International Symposium of Chiral Discrimination (Chirality)" and "International Symposium on Chiroptical Spectroscopies (CD)" - Member of *PhD juries* (35) and *Habilitations* (12). - Member of *Editorial board of journal "Chirality"* (Wiley).
- *Supervisor and co-supervisor of 15 PhD, 12 post-doctorants, 12 Masters 2 - Expert for Hexal* (Aventis) in 2010-2011 - *Invited Professor*, Queen's University, Kingston, Canada, 18-22 nov. 2013.

### Distinction and prizes

*Distinguished member of the French Chemical Society SCF* (2013, first promotion)  
*National prize of the Organic Chemistry Division of the French Chemical Society* (2020)

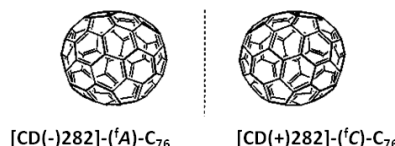
Jeanne Crassous received her PhD in 1996 under supervision of Prof. André Collet (ENS, Lyon, France), working on the absolute configuration of bromochlorofluoromethane. After a one-year postdoctoral period studying the chirality of fullerenes in Prof. François Diederich's group (ETH Zurich, Switzerland), she received a CNRS researcher position at the ENS Lyon in 1998, and she joined the "Institut des Sciences Chimiques de Rennes" (University of Rennes 1, France) in 2005. She is currently Director of Research at the CNRS. In 2013, she became a distinguished member of French Chemical Society (Société Chimique de France, SCF) and received the DCO-SCF prize in 2020. Her group is dealing with many fields of chirality (metal-based helicene derivatives, chiral phosphorated  $\pi$ -conjugated systems and assemblies, fundamental aspects of chirality such as parity violation effects) and chiroptical activity (electronic and circular dichroism, circularly polarized luminescence).

### Bromochlorofluoromethane



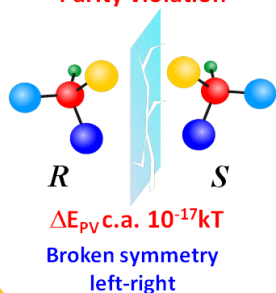
*Angew. Chem. Int. Ed.* **1997**, 36, 885; *J. Am. Chem. Soc.* **1997**, 119, 3818

### Chirality in fullerenes



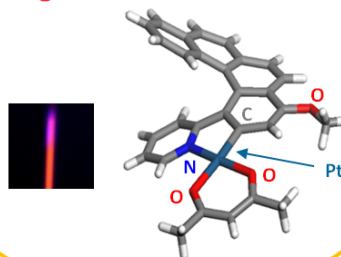
*Angew. Chem. Int. Ed.* **1998**, 37, 1919; *Angew. Chem. Int. Ed.* **1999**, 38, 1613

### Parity violation

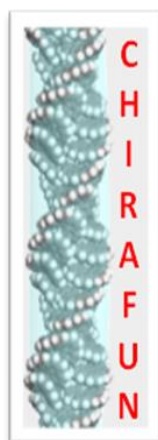
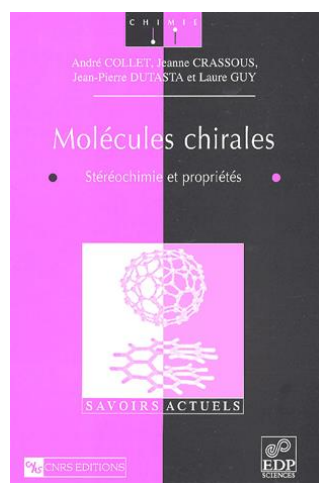


*Org. Biomol. Chem.* **2005**, 3, 2218; *Phys. Chem. Chem. Phys.* **2006**, 8, 79; *Chem. Comm.* **2009**, 4841; *Chirality*, **2010**, 22, 870; *Chirality* **2018**, 30, 147

### Heteroatomic and organometallic helicenes



*J. Am. Chem. Soc.* **2009**, 131, 3183; *Angew. Chem. Int. Ed.* **2010**, 49, 99; *J. Am. Chem. Soc.* **2011**, 133, 3800; *J. Am. Chem. Soc.*, **2012**, 134, 15628; *Angew. Chem. Int. Ed.* **2014**, 53, 5786; *Angew. Chem. Int. Ed.* **2016**, 55, 8062; *Angew. Chem. Int. Ed.* **2017**, 56, 8236; *Angew. Chem. Int. Ed.* **2018**, 57, 6774; *Chem. Rev.* **2019**, 119, 8846; *Angew. Chem. Int. Ed.* **2020**, 59, 8394



CHIRAFUN Network "Chirality and multifunctionality"



**HEL4CHIROLED**

Helical systems for chiral OLEDs  
European ITN project

Grant Agreement number: 859752 -  
HEL4CHIROLED - H2020-MSCA-  
ITN-2019

