

PROFESSIONAL DOSSIER

Guy BERTRAND

December 2024

TABLE OF CONTENTS

BRIEF VITAE	3
PUBLICATIONS	7
REVIEW ARTICLES AND BOOK CHAPTERS	44
BOOK	46
PARTICIPATION TO GOVERNMENTAL REPORTS	47
PATENTS	48
INVITED LECTURES	53
. At Conferences	53
. At Companies	71
. At Universities	74
RESEARCH TRAINING	92
. Ph.D. Degrees Conferred	92
. Postdoctoral Associates	96
. Visiting Professors	100
PRESENT COLLABORATORS	101
PAST COLLABORATORS (in the US) AND PRESENT POSITION	102
CONTRACTS AND GRANTS IN THE US	105

Guy BERTRAND

Professional Address

UCSD/CNRS Joint Research Chemistry Laboratory (UMI 3555)
 Department of Chemistry and Biochemistry
 University of California, San Diego
 9500 Gilman Dr.,
 La Jolla, CA 92093-0343
 USA
 Tél : (+1) 858 534 5412
 e-mail : gbertrand@ucsd.edu

Education

D.U.E.S. PC (Université de Limoges), *June 1972*
 Ingénieur ENSC Montpellier, *June 1975*
 Docteur ès-Sciences Physiques (Université Paul Sabatier, Toulouse), *September 1979*

Research Activities

Attaché de Recherche CNRS	(Université Paul Sabatier) <i>Oct. 1975 - Oct. 1980</i>
Research Associate	Sanofi-Recherche Company <i>Oct. 1980 - Sept. 1981</i>
Chargé de Recherche CNRS	(Université Paul Sabatier) <i>Nov. 1981 - Feb. 1988</i>
Directeur de Recherche CNRS, 2 ^{ème} classe	(LCC-CNRS, Toulouse), <i>Mar. 1988 - Sept. 1994</i>
Directeur de recherche CNRS, 1 ^{ère} classe	(LCC-CNRS) <i>Oct. 1994 - Dec. 1998</i>
	(Université Paul Sabatier) <i>Jan. 1999- Sept. 2001</i>
Directeur de Recherche CNRS, Classe Exceptionnelle	(Université Paul Sabatier) <i>Oct. - 2001-present</i>
Distinguished Professor	(University of California, Riverside) <i>Oct. 2001-June 2012</i>
Distinguished Professor	(University of California, San Diego) <i>July 2012-present</i>

Administrative Responsibilities

Member of the Board of Directors of the International Council on Main Group Element, *1993-1999*
 Elected Member of the Administrative Board of « Institut de Promotion Supérieure du Travail », *1993-2000*
 Director of « Etudes CNAM Midi-Pyrénées », *1994 -1999*
 Vice-Chairman of the European Chemical Society, *Jan. 1995-2000*
 Director, UMR 5069 (Univ. Paul Sabatier, France), *Jan. 1999-Dec. 2005*
 Member of « Comité National d'Évaluation de la Recherche (CNER) », *1999-2003*
 Member of « Conseil Scientifique du département Sciences Chimiques du CNRS », *2000-2001*
 Member of « Conseil Scientifique de l'ENS Lyon », *2001-2004*
 Director of the UCR-CNRS Joint Research Laboratory (University of California, Riverside, USA), *2001-2012*
 Elected member of « Conseil Scientifique de l'Université Paul Sabatier », *2002-2006*
 Adhoc Member of the MCHA Study Section (NIH), *June 2004*
 Adhoc Member of the SBCB Study Section (NIH), *June 2005*
 Adhoc Member of the SBCB Study Section (NIH), *October 2009*
 Director of the UCSD-CNRS Joint Research Laboratory (University of California, San Diego, USA), *2012-present*

Teaching Activities

Maître de Conférence, Ecole Polytechnique (Paris), *1992 - 1999*
 Professor, Ecole Polytechnique (Paris), *2000-2004*
 Professor, University of California, Riverside, USA, *2001-2012*
 Professor, University of California, San Diego, USA, *2012-present*

Diffusion of Scientific Information

Co-Chairman, EUCHEM-PSIBLOCS Conference, Palaiseau, *Sept. 1988*
 Co-Chairman, XIIth International Conference on Phosphorus Chemistry (ICPC), Toulouse, *July 1992*
 Chairman, Carbene Zing Conference, Cancun (Mexico) February 18-21, *2009*
 Chairman, Symposium "Frontiers in Organometallic Chemistry" PACIFICHEM Conference, Honolulu, Hawaii (USA) December 14-20, *2010*.

Member of the Advisory Committee of Heron Island Conferences on Reactive Intermediates, *1994-present*
 Member of the Editorial Board, "Heteroatom Chemistry", *1989-present*
 Member of the Editorial Board, "Chemical Reviews", *1989-2021*
 Member of the Editorial Board, "Bull. Soc. Chim. Fr.", *1996-1998*
 Member of the Editorial Board, "Topics in Stereochemistry", *1996-2005*
 Member of the Editorial Board, "C. R. Acad. Sc. Paris", *1998-present*
 Member of the Editorial Board, "Eur. J. Inorg. Chem.", *December 2002-present*
 Member of the Editorial Board, "Chemistry: an Asian Journal.", *2006-2021*
 Member of the Editorial Board, "Chemistry Letters", *2010-present*
 Member of the Editorial Board "Chemical Science", *2010-2021*
 Member of the Editorial Advisory Panel for "Nature Communications", *2010-2016*
 Member of the Editorial Board "Organic Chemistry Frontiers (OCF) (RSC), *2013-present*
 Member of Senior Editors of Bulletin Chemical Society of Japan, *2013-present*
 Member of the Editorial Board of "Chem" (Cell Press), *2015-present*
 Member of the Advisory Board of "Natural Sciences", *2021-present*

Guest Editor, "Phosphorus, Sulfur, and Silicon" Vol. 75-77, *1993*
 Guest Editor, "Chemical Reviews", special issue on Phosphorus Chemistry, *August 1994*
 Associate Editor, "Bull. Soc. Chim. Fr. ", *July 1991 - Dec. 1995*
 Editor, "European Chemistry Chronicle", *1996 - 1998*
 Regional Editor, "J. Organomet. Chem. ", *January 1999-December 2010*
 Guest Editor, "Chemical Reviews", Special issue on Carbene Chemistry, *August 2009*
 Guest Editor, "Chemical Reviews", Special issue on Main Group Chemistry, *August 2010*
 Associate Editor, "Chemical Reviews", *2010-2021*

Awards

International Council on Main Group Chemistry Award, *1993*
 French-German Humboldt Award, *1994*
 Médaille d'Argent du CNRS, *1998*
 Japanese Society for Promotion of Science Award, *1999*
 Sir Ronald Nyholm Lectureship and Medal of the RSC, *2009-2010*
 Senior Humboldt Research Award, Reinvitation, *2010*

Grand Prix Le Bel of the French Chemical Society, *2010*
 Chevalier de la Legion d'Honneur, *2013*
 ACS Award in Inorganic Chemistry, *2014*
 Senior Humboldt Research Award, Reinvitation, *2015*
 Sir Geoffrey Wilkinson Award of the RSC, *2016*
 Sacconi Medal of the Italian Chemical Society, *2017*
 Highly Cited Researcher, Web of Science, *2017*
 Grand Prix de la Maison de la Chimie (shared with K. Matyjaszewski), *2020*

Academy membership

Membre Correspondant de l'Institut (French Academy of Sciences), *1996*
 Member of the Académie des Technologies, *2000*
 Member of the Academia Europea, *2002*
 Member of the European Academy of Sciences, *2003*
 Member the French Academy of Sciences, *2004*
 Fellow of the American Association for Advancement of Science, *2006*
 Member of the German National Academy of Sciences Leopoldina, *2023*

Honorary lectureship

Visiting Associate Professor at Utah University, Salt Lake City, USA, *June-Sept. 1983*
 Humboldt junior award at T. U. München, Germany, *Nov. 1988-May 1989*
 Visiting Professor at ETH Zürich, *June-Sept. 1998*
 Kharasch Lecturer, University of Chicago, *1998*
 Taiwan National Science Foundation Distinguished Lectureship, *2003*
 East Cost Lecturer (Scotland), *2007*
 Novartis Lectureship at the Scripps Research Institute, La Jolla, *2009-2010*
 Anthony J. Arduengo, III Lectureship of the University of Alabama, *2010*
 Pattison Lectureship, University of Western Ontario, *2010-2011*
 Bruker Lectureship, University of Toronto, *2010*
 Eli Lilly Lectureship, University of Illinois, Urbana-Champaign, *2010-2011*
 PKU-Eli Lilly Lecture, Peking University in Beijing, China, *2011*.
 Raymond Siedle Distinguished Lecture, Indiana University, Bloomington, *2012*
 Frontiers in Chemical Research Lectureship, Texas A&M University, College Station, *2012-2013*
 McRae Lectureship, Queen's University, ^[1]_{SEP}Kingston, Canada, *2012-2013*
 Gordon Stone Lectureship, School of Chemistry at the University of Bristol, UK, *2013*
 Andrews Lectureship, Mississippi State University, *2014*
 The Swiss Chemical Society Lectureship, *2015*.
 Gordon Stone Lectureship, Baylor University, *2015*
 Inaugural Anton B. Burg Memorial lecturership, USC, *2015*
 Charles F. Hutchison Memorial Lectureship, University of Rochester, *2016*
 Debye Lectureship, Cornell University, *2016*
 LuoJia Lecturship, Wuhan University (China), *2017*
 Vilsmeier Lecturship, University of Regensburg (Germany), *2018*
 Named "Distinguished Visiting Professor" at Tsinghua University (China), *2018*

Named “Honorable Professor” at Wuhan University of Technology (China), *2018*

Strem lecturership in chemical catalysis at Boston College, *2019-2020*.

Neil Bartlett lectureship at UC Berkeley, *2021*.

Silliman Lectureship at Yale, *2022*

Fellow of the Hagler Institute for Advanced Study at Texas A&M University, *2022-2023*

Moses Gomberg Lectureship at the University of Michigan, *2024*

Luigi M. Venanzi lectureship at the ETH Zurich, *2024*

George A. Olah Annual Lecture at USC, *2024*

PUBLICATIONS

- 1 *Réarrangements thermiques d'oxa-6 sila-2 bicyclo[3.1.0]hexanes : oxa-1 sila-2 cyclohexènes-5 et sila-1 cyclopentanone-3.* M. Lesbre, G. Bertrand, G. Manuel, P. Mazerolles, **C. R. Acad. Sc. Paris Série C** **1977**, 284, 709-712.
- 2 *Synthèse et réarrangements de cycles α -fonctionnels du germanium : oxa-6 diphényl-2,2 germa--2-bicyclo [3.1.0]hexane et diphényl-1,1 germa-1 cyclopentanol-2. Etude comparative avec les dérivés isologues du silicium.* G. Manuel, G. Bertrand, P. Mazerolles, **J. Organomet. Chem.** **1978**, 146 (1), 7-16.
- 3 *Synthèses et réarrangements thermiques de sila-1 et sila-2 dichloro-6,6 bicyclo[3.1.0]hexanes.* G. Bertrand, G. Manuel, P. Mazerolles, **J. Organomet. Chem.** **1978**, 144 (3), 303-315.
- 4 *Délocalisation à travers un atome de silicium. Formation d'un ion silicénium au cours du piégeage du méthyl-2 sila-2 butadiène-1,3.* G. Bertrand, G. Manuel, P. Mazerolles, **Tetrahedron Lett.** **1978**, 19, 2149-2152.
- 5 *Hypothèses sur la formation par pyrolyse du premier intermédiaire à silicium digonal.* G. Bertrand, G. Manuel, P. Mazerolles, **Tetrahedron** **1978**, 34 (13), 1951-1956.
- 6 *Theoretical investigations on some C_2SiH_4 isomers.* J. C. Barthelat, G. Trinquier, G. Bertrand, **J. Am. Chem. Soc.** **1979**, 101, 3785-3789.
- 7 *Claisen rearrangement in the silicon series.* J. Ancelle, G. Bertrand, M. Joanny, P. Mazerolles, **Tetrahedron Lett.** **1979**, 20, 3153-3156.
- 8 *Asymmetric induction at silicon from prochiral silaethylenes.* G. Bertrand, J. Dubac, P. Mazerolles, J. Ancelle, **J. Chem. Soc., Chem. Commun.** **1980**, 382-383.
- 9 *Photolytic rearrangement of phosphorus azide. Evidence for a transient metaphosphonimide.* G. Bertrand, J.P. Majoral, A. Baceiredo, **Tetrahedron Lett.** **1980**, 21, 5015-5018.
- 10 *Le réarrangement de Claisen en séries siliciée et germaniée : silaéthylène et germaéthylène.* G. Bertrand, P. Mazerolles, J. Ancelle, **Tetrahedron** **1981**, 37, 2459-2466.
- 11 *Isomérisations thermiques originales de composés β -chlorés du silicium induites par un groupe β -éthylénique.* G. Manuel, G. Bertrand, P. Mazerolles, J. Ancelle, **J. Organomet. Chem.** **1981**, 212, 311-323.
- 12 *Photolytic rearrangement of germanium azides. Evidence for transient germa-imines.* A. Baceiredo, G. Bertrand, P. Mazerolles, **Tetrahedron Lett.** **1981**, 22, 2553-2556.

- 13 *Le problème de la conjugaison à travers un atome de silicium π -lié dans les systèmes sila-2 butadiéniques.* G. Bertrand, G. Manuel, P. Mazerolles, G. Trinquier, **Tetrahedron** **1981**, 37, 2875-2880.
- 14 *Surprising reactivity of very crowded phosphinic derivatives.* A. Baceiredo, G. Bertrand, P. Mazerolles, J. P. Majoral, **J. Chem. Soc., Chem. Commun.** **1981**, 1197-1198.
- 15 *Photolytic rearrangement of phosphorus, germanium and silicon azides: evidence for new hybridized species.* J. P. Majoral, G. Bertrand, A. Baceiredo, P. Mazerolles, **A.C.S. Series** **1981**, 171, 597-600.
- 16 *First asymmetric synthesis of functionalized mono-aromatic or non-aromatic silanes from prochiral silaethylenes.* G. Bertrand, J. Dubac, P. Mazerolles, J. Ancelle, **Nouveau J. de Chimie** **1981**, 6, 381-386.
- 17 *Les extraterrestres sont-ils en silicium ?* S. Ortolí, G. Bertrand, **Science et Vie**, **1982**, 780, 26-29.
- 18 *A new route to bis(2,4,6-tri-tert-butylphenyl)diphosphene via silylated compound.* G. Bertrand, C. Couret, J. Escudie, S. Majid, J. P. Majoral, **Tetrahedron Lett.** **1982**, 23, 3567-3570.
- 19 *An improved synthesis of key intermediates in metallole 4B chemistry.* G. Manuel, G. Bertrand, F. El Anba, **Organometallics** **1983**, 2, 391-394.
- 20 *Réarrangement de Curtius en série organométallique : photolyse d'azotures du phosphore tétra- coordonné pentavalent.* A. Baceiredo, G. Bertrand, J. P. Majoral, **Nouveau J. de Chimie** **1983**, 7, 255-261.
- 21 *Le réarrangement de Curtius en série siliciée : mécanismes et applications synthétiques.* A. Baceiredo, G. Bertrand, J. P. Majoral, P. Mazerolles, **Nouveau J. de Chimie** **1983**, 7, 645-651.
- 22 *Stannylenes and germylenes as powerful dechlorinated reagents : new route to diphosphene.* M. Veith, V. Huch, J. P. Majoral, G. Bertrand, G. Manuel, **Tetrahedron Lett.** **1983**, 24, 4219-4222.
- 23 *Synthèse et propriétés pharmacologiques du (d-1)thia-PAF.* A. Bernat, G. Bertrand, D. Delebassee, B. Garrigues, J. P. Maffrand, E. Vallee, **J. de Pharmacologie** **1983**, 14(1), 49.
- 24 *Photolysis of phosphonium and phosphorane azides.* J. P. Majoral, G. Bertrand, A. Baceiredo, M. Mulliez, R. Schmutzler, **Phosphorus Sulfur** **18**, 221-224 (1983)
- 25 *First evidence for a Curtius type rearrangement involving a pentacoordinated atom.* A. Baceiredo, G. Bertrand, J. P. Majoral, U. Wermuth, R. Schmutzler, **J. Am. Chem. Soc.** **1984**, 106, 7065-7068.

- 26 *Synthesis and structure of the first cyclodiphosphazene. Dimerization of a phosphonitrile $>P\equiv N$.* A. Baceiredo, G. Bertrand, J. P. Majoral, G. Sicard, J. Jaud, J. Galy, **J. Am. Chem. Soc.** **1984**, *106*, 6088-6089.
- 27 *First evidence for an intermediate nitrilo- λ^5 -phosphane ($>P\equiv N$).* G. Sicard, A. Baceiredo, G. Bertrand, J. P. Majoral, **Angew. Chem. Int. Ed. Engl.** **1984**, *23*, 459-460.
- 28 *Thermolysis of 6-oxa-3-silabicyclo[3.1.0]hexanes : a new convenient route to silicon-oxygen π -bonded species.* G. Manuel, G. Bertrand, W. P. Weber, S. A. Kazoura, **Organometallics** **1984**, *3*, 1340-1343.
- 29 *Reactions of phosphorus electrophiles with $[(\eta^5-C_5Me_5)Fe(CO)_2]^-$: spectroscopic evidence for a phosphinidene complex.* H. Nakazawa, W. E. Buhro, G. Bertrand, J. A. Gladysz, **Inorg. Chem.** **1984**, *23*, 3431-3433.
- 30 *First evidence for a Curtius type rearrangement involving a charged atom. An easy synthesis of an iminophosphonium salt.* M. Mulliez, J. P. Majoral, G. Bertrand, **J. Chem. Soc., Chem. Commun.** **1984**, 284-285.
- 31 *An efficient synthesis of azathia analogs of platelet activating factor.* B. Garrigues, G. Bertrand, J. P. Maffrand, **Synthesis** **1984**, 870-872.
- 32 *Synthèse de la d,l-(acetoxy-2 octadecylthio-1)propyl-3 phosphorylcholine ou Thia-PAF.* B. Garrigues, G. Bertrand, D. Frehel, J. P. Maffrand, **Phosphorus and Sulfur** **1984**, *21*, 171-176.
- 33 *Versatile photochemical behavior of phosphorus azides : Curtius-type rearrangement and diverse fates of α -phosphorus nitrenes.* A. Baceiredo, G. Bertrand, J.P. Majoral, F. El Anba, G. Manuel, **J. Am. Chem. Soc.** **1985**, *107*, 3945-3949.
- 34 *Synthesis of the first α -diazo phosphines. Phosphorus-carbon multiple bond character of phosphinocarbenes.* A. Baceiredo, G. Bertrand, G. Sicard, **J. Am. Chem. Soc.** **1985**, *107*, 4781-4783.
- 35 *Kinetics and mechanism of the pyrolysis of 6-oxa-3,3-dimethyl-3-silabicyclo[3.1.0]hexane, a dimethylsilanone precursor.* I. M.T. Davidson, A. Fenton, G. Manuel, G. Bertrand, **Organometallics** **1985**, *4*, 1324-1327.
- 36 *Binding phosphinidenes to transition-metal fragments.* G. Trinquier, G. Bertrand, **Inorg. Chem.** **1985**, *24*, 3842-3856.
- 37 *The reactions of some azides with an anionic phosphorus(III) complex.* A. Baceiredo, G. Bertrand, J.P. Majoral, K.B. Dillon, **J. Chem. Soc., Chem. Commun.** **1985**, 562-563.
- 38 *Azides of heavier main group elements : the reluctance of phosphine azides to undergo a Curtius type rearrangement.* E. Ocando, S. Majid, J. P. Majoral, A. Baceiredo, G. Bertrand **Polyhedron** **1985**, *4*, 1667-1668.

- 39 *Synthèse de la d,l-(acetoxy-3 octadecylthio-1) propyl-2 phosphorylcholine : un isomère géométrique du thia-PAF.* B. Garrigues, G. Bertrand, J. P. Maffrand, **Phosphorus and Sulfur** **1986**, 26, 53-56.
- 40 *α -diazophosphines stables analogie λ^3 -phosphinocarbene/ λ^5 -phosphaacetylene.* A. Baceiredo, G. Bertrand, **Phosphorus and Sulfur** **1986**, 26, 57-62.
- 41 *Phosphorus-nitrogen triple-bonded species.* J. P. Majoral, G. Bertrand, A. Baceiredo, E. Ocando-Mavarez, **Phosphorus and Sulfur** **1986**, 27, 75-80.
- 42 *First example of prototropism in iminobis(phosphines) induced by phosphorus alkylation.* A. M. Caminade, E. Ocando, J. P. Majoral, M. Cristante, G. Bertrand, **Inorg. Chem.** **1986**, 25, 712-714.
- 43 *Phosphonitriles : versatile intermediates.* J. Boske, E. Niecke, E. Ocando-Mavarez, J. P. Majoral, G. Bertrand, **Inorg. Chem.** **1986**, 25, 2695-2698.
- 44 *Phosphorus azides, powerful reagents in heterocyclic chemistry.* J. P. Majoral, G. Bertrand, E. Ocando-Mavarez, A. Baceiredo, **Bull. Soc. Chim. Belg.** **1986**, 95, 945-957.
- 45 *Phosphinocarbene-phosphaalkene rearrangement and intramolecular Wittig-like reaction involving a phosphorus vinyl ylide.* A. Baceiredo, A. Igau, G. Bertrand, M. J. Menu, Y. Dartiguenave, J. J. Bonnet, **J. Am. Chem. Soc.** **1986**, 108, 7868-7869.
- 46 *Triple-bonded-like tricoordinated phosphorus species $>P\equiv$.* G. Bertrand, A. Baceiredo, G. Sicard, M. Granier, **Phosphorus and Sulfur** **1987**, 30, 353-356.
- 47 *Synthesis and electrocyclic ring opening of 1,3,2 λ^3 ,4 λ^5 -diazadiphosphetines.* J. Boske, E. Ocando-Mavarez, E. Niecke, J. P. Majoral, G. Bertrand, **J. Am. Chem. Soc.** **1987**, 109, 2822-2823.
- 48 *Synthesis and reactivity of diazomethylenephosphoranes ($\rightarrow P=C=N_2$): new phosphacumulene ylides and first stable pseudounsaturated diazo derivatives.* J. M. Sotiropoulos, A. Baceiredo, G. Bertrand, **J. Am. Chem. Soc.** **1987**, 109, 4711-4712.
- 49 *Reaction of the (trimethylsilyl)diazomethane anion with metal complexes: synthesis and X-ray study of iodomethyltris(trimethylphosphine)rhodium(III)(trimethylsilyl)diazomethane, $RhICH_3 (PMe_3)_3\{C(N_2)SiMe_3\}$.* M. J. Menu, P. Desrosiers, M. Dartiguenave, Y. Dartiguenave, G. Bertrand, **Organometallics** **1987**, 6, 1822-1824.
- 50 *A new route to nitrile oxides via α -nitrosodiazo derivatives.* G. Sicard, A. Baceiredo, G. Crocco, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1988**, 27, 301-302.
- 51 *Synthesis and reactivity of a stable nitrile imine.* G. Sicard, A. Baceiredo, G. Bertrand, **J. Am. Chem. Soc.** **1988**, 110, 2663-2664.

- 52 *First direct evidence for nitrile imine-diazo isomerization. Synthesis of relatively stable N-silylated nitrile imines.* M. Granier, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1988**, 27, 1350-1351.
- 53 *Analogous α, α' bis carbenoid triply bonded species : synthesis of a stable λ^3 -phosphinocarbene – λ^5 -phosphaacetylene.* A. Igau, H. Grutzmacher, A. Baceiredo, G. Bertrand, **J. Am. Chem. Soc.** **1988**, 110, 6463-6466.
- 54 *Reactivity of $Rh(PMe_3)_4Cl$ with lithium derivatives of phosphorus-substituted diazomethanes. First evidence for a transient nitrogen-transition-metal nitrile imine. X-ray structure of $(PMe_3)_2RhNBuNCHP(N-i-Pr)_2$.* M. J. Menu, G. Crocco, M. Dartiguenave, Y. Dartiguenave, G. Bertrand, **Organometallics** **1988**, 7, 2231-2233.
- 55 *Synthesis of N-bonded diazoalkane complexes via the reaction of the trimethylsilyldiazomethane anion with $M(CO)_5PPh_3$ ($M = Cr; W$): X-ray structure of $W(CO)_4(PPh_3)[N_2C(SiMe_3)_2]$.* M. J. Menu, G. Crocco, M. Dartiguenave, Y. Dartiguenave, G. Bertrand, **J. Chem. Soc., Chem. Commun.** **1988**, 1598-1599.
- 56 *[Bis(diisopropylamino)phosphino]trimethylsilylcarbene : a stable nucleophilic carbene.* A. Igau, A. Baceiredo, G. Trinquier, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1989**, 28, 621-622.
- 57 *Reactivity of phosphonitriles with low-coordinated phosphorus double-bonded compounds.* J. Boske, E. Niecke, M. Nieger, E. Ocando, J. P. Majoral, G. Bertrand, **Inorg. Chem.** **1989**, 28, 499-504.
- 58 *Analogy α, α' -bis carbenoid - triply-bonded species: attempted synthesis of $\sigma^2\lambda^3$ -phosphacarbene ($-C-P=C<$) – $\sigma^2\lambda^5$ -phosphaacetylene ($-C\equiv P=C<$).* A. Igau, A. Baceiredo, G. Bertrand, K. Kuhnel Lysek, E. Niecke, **New J. Chem.** **1989**, 13, 359-362.
- 59 *First structural characterization of an α -diazophosphane : crystal structure of bis[bis(diisopropylamino)phosphanyl]diazomethane $[(i-Pr_2N)_2P]_2CN_2$.* M. J. Menu, M. Dartiguenave, Y. Dartiguenave, J. J. Bonnet, G. Bertrand, A. Baceiredo, **J. Organomet. Chem.** **1989**, 372, 201-206.
- 60 *A distillable C- and N-silylated nitrile imine.* F. Castan, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1989**, 28, 1250-1251.
- 61 *Synthesis, reactivity, and crystal structure of the first methylenephosphonium ion : a severely twisted valence isoelectronic olefin.* A. Igau, A. Baceiredo, H. Grutzmacher, H. Pritzkow, G. Bertrand, **J. Am. Chem. Soc.** **1989**, 111, 6853-6854.
- 62 *Evidence for α -phosphanyl- α' -sulfinylcarbene to α -phosphoranyl- α' -sulfonylcarbene rearrangement. Synthesis of 2-oxo- and 2-thioxo-1,2 λ^5 -azaphosphetanes.* G. Sicard, H. Grutzmacher, A. Baceiredo, J. Fischer, G. Bertrand, **J. Org. Chem.** **1989**, 54, 4426-4430.

- 63 *Synthesis and reactivity of stable phosphorus-substituted nitrilimines; X-ray crystal structure of C-[bis(diisopropylamino)thioxophosphoranyl]-N-[bis(diisopropylamino)phosphanyl]nitrilimine.* M. Granier, A. Baceiredo, Y. Dartiguenave, M. Dartiguenave, M. J. Menu, G. Bertrand, **J. Am. Chem. Soc.** **1990**, *112*, 6277-6285.
- 64 *Direct evidence for nitrile imine - imidoynitrene rearrangement : X-ray crystal structure of an unusual nitrene complex.* M. Granier, A. Baceiredo, H. Grutzmacher, H. Pritzkow, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1990**, *29*, 659-661.
- 65 *Electron-impact and flash-vacuum pyrolysis of trivalent and pentavalent phosphorus azides: generation of original unsaturated mono-, di- and tricoordinated phosphorus cations.* A. Maquestiau, L. Z. Chen, R. Flammang, J. P. Majoral, G. Bertrand, **Inorg. Chem.** **1990**, *29*, 3097-3102.
- 66 *Synthesis and reactivity of the first stable λ^5 -phosphaacetylene.* G. Bertrand, A. Igau, A. Baceiredo, H. Grutzmacher, **Phosphorus, Sulfur, and Silicon** **1990**, *49/50*, 301-304.
- 67 *Use of phosphorus for stabilizing highly reactive organic species: nitrileimines and pseudo-diazo-alkenes.* A. Baceiredo, M. Granier, F. Castan, J. M. Sotiropoulos, G. Bertrand **Phosphorus, Sulfur, and Silicon** **1990**, *49/50*, 131-134.
- 68 *Stereospecific formation of a 1,2 λ^3 -azaphosphetane in the thermolysis of bis[bis(diisopropyl- amino)phosphanyl]diazomethane.* M. J. Menu, Y. Dartiguenave, M. Dartiguenave, A. Baceiredo, G. Bertrand, **Phosphorus, Sulfur, and Silicon** **1990**, *47*, 327-334.
- 69 *An N-phosphino C-thiophosphinoyl nitrilimine as a formal 1,4 dipole : synthesis of 1,2,3 λ^5 -diaza- and 1,2,4,3 λ^5 -triazaphosphinines.* M. Granier, A. Baceiredo, M. Nieger, G. Bertrand **Angew. Chem. Int. Ed. Engl.** **1990**, *29*, 1123-1125.
- 70 *Spontaneous formation of stable phosphino(silyl)-carbenes from unstable diazo compounds.* G. Gillette, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1990**, *29*, 1429-1431.
- 71 *Stable phosphanyl silyl carbenes : synthesis and reactivity.* G. R. Gillette, A. Igau, A. Baceiredo, G. Bertrand, **New J. Chim.** **1991**, *15*, 393-400.
- 72 *Synthesis and reactivity of stable silyl-substituted nitrilimines.* F. Castan, A. Baceiredo, D. Bigg, G. Bertrand, **J. Org. Chem.** **1991**, *56*, 1801-1807.
- 73 *Bis(diisopropylamino)phosphanyldiazomethane: a building block for the synthesis of stable carbene and nitrilimines.* G. Bertrand, **Heteroatom. Chem.** **1991**, *2*, 29-38.
- 74 *X-ray crystal structure and reactivity of an N- phosphonio-substituted nitrilimine : a stable electrophilic nitrilimine.* M. Granier, A. Baceiredo, V. Huch, M. Veith, G. Bertrand, **Inorg. Chem.** **1991**, *30*, 1161-1162.

- 75 *Preparation of novel low-coordinate chloro and azido P-N compounds. Attempted synthesis of cyclodiphosphazenes.* H. Rolland, E. Ocando-Mavarez, P. Potin, J. P. Majoral, G. Bertrand, **Inorg. Chem.** **1991**, *30*, 4095-4098.
- 76 *Synthesis of the first distillable α -boranyldiazomethane. Direct evidence of lithioboranyldiazo methane-lithioboranylisodiazomethane [$(>BCNN^-, Li^+)-(>BNNC^-, Li^+)$] rearrangement.* M. P. Arthur, A. Baceiredo, G. Bertrand, **J. Am. Chem. Soc.** **1991**, *113*, 5856-5857.
- 77 *Stable N-phosphanyl nitrilimines: reactivity on the periphery of the nitrilimine skeleton.* F. Castan, M. Granier, T. Straw, A. Baceiredo, K. B. Dillon, G. Bertrand, **Chem. Ber.** **1991**, *124*, 1739-1746.
- 78 *New synthesis and first X-ray crystal study of a C-borylated phosphorus ylide.* K. Horchler von Locquenghien, A. Baceiredo, R. Boese, G. Bertrand, **J. Am. Chem. Soc.** **1991**, *113*, 5062-5063.
- 79 *Synthesis of stable boryl-substituted diazomethane and nitrilimines.* M. P. Arthur, H. Goodwin, A. Baceiredo, K. B. Dillon, G. Bertrand, **Organometallics** **1991**, *10*, 3205-3210.
- 80 *Reactivity of a (diazomethylene)phosphorane with alkylating agents and Lewis acids; synthesis of the first α -diazoalkylborates.* J. M. Sotiropoulos, A. Baceiredo, K. Horchler von Locquenghien, F. Dahan, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1991**, *30*, 1154-1156.
- 81 *Synthesis and X-ray crystal structure of the first diphosphirenium salt.* F. Castan, A. Baceiredo, J. Fischer, A. De Cian, G. Commenges, G. Bertrand, **J. Am. Chem. Soc.** **1991**, *113*, 8160-8161.
- 82 *The first nitrogen NMR spectroscopic study of nitrile imides (nitrilimines).* K. Horchler von Locquenghien, R. Reau, G. Bertrand, **J. Chem. Soc., Chem. Commun.** **1991**, 1192-1193.
- 83 *Electronic structure of λ^5 -phosphaacetylenes and corresponding triplet methylenes.* D. A. Dixon, K. D. Dobbs, A. J. Arduengo III, G. Bertrand, **J. Am. Chem. Soc.** **1991**, *113*, 8782-8785.
- 84 *Photochemical behavior of thioxophosphoranyl diazo compounds : evidence for transient λ^5 -phosphathiirenes and for structural isomerizations of the diazo group.* M. Soleilhavoup, A. Baceiredo, F. Dahan, G. Bertrand, **Inorg. Chem.** **1992**, *31*, 1500-1504.
- 85 *Substitution reactions at nitrilimine skeletons,* M. P. Arthur, A. Baceiredo, J. Fischer, A. De Cian, G. Bertrand, **Synthesis** **1992**, 43-45.
- 86 *A straightforward synthesis of nitrilimines. X-Ray crystal structure of a nitrilimine stabilized by non-heteroatom substituents.* R. Reau, G. Veneziani, F. Dahan, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1992**, *31*, 439-440.

- 87 *Reaction of a stable phosphinocarbene with germane- and stannanediyls: evidence for C-phosphanylgerma- and C-phosphanylstannaethene to C-germyl- and C-stannylphosphaalkene rearrangements.* V. D. Romanenko, A. O. Gudima, A. N. Chernega, G. Bertrand, **Inorg. Chem.** **1992**, *31*, 3493-3494.
- 88 *Formation of nitrilimines and diazo compounds from lithiated and stannyl diazo derivatives: scope and mechanism.* R. Reau, G. Veneziani, G. Bertrand, **J. Am. Chem. Soc.** **1992**, *114*, 6059-6063.
- 89 *Aluminium chloride promoted aminolysis of lactams.* E. Bon, D. C. H. Bigg, G. Bertrand **Synlett** **1992**, 747-748.
- 90 *Synthesis and reactivity of diazomethylenephosphoranes ($>P=C=N_2$).* J. M. Sotiropoulos, A. Baceiredo, G. Bertrand, **Bull. Soc. Chim. Fr.** **1992**, *129*, 367-375.
- 91 *The surprisingly facile dehydrohalogenation of a hydrazonoyl chloride into a stable phosphorus-substituted nitrilimine.* F. Castan, A. Baceiredo, F. Dahan, N. Auner, G. Bertrand, **J. Chem. Soc., Chem. Commun.** **1992**, 1274-1276.
- 92 *Use of tin derivatives for selective allylation and methylation of halogenophosphorus compounds.* H. Rolland, P. Potin, J. P. Majoral, G. Bertrand, **Tetrahedron Lett.** **1992**, *33*, 8095-8098.
- 93 *Synthesis and X-ray crystal structure of $[(i\text{-Pr}_2\text{N})_2\text{P(H)CP(N-}i\text{-Pr}_2)_2]^+\text{CF}_3\text{SO}_3^-$: a carbene, a cumulene or a phosphaacetylene?* M. Soleilhavoup, A. Baceiredo, O. Treutler, R. Ahlrichs, M. Nieger, G. Bertrand, **J. Am. Chem. Soc.** **1992**, *114*, 10959-10961.
- 94 *Phosphanylcarbenes : from unstable intermediates to X-ray characterized compounds.* M. Soleilhavoup, G. Alcaraz, R. Reau, A. Baceiredo, G. Bertrand, **Phosphorus, Sulfur, and Silicon** **1993**, *76*, 49-52.
- 95 *Use of tin derivatives for the synthesis of polyphosphazenes featuring phosphorus-carbon bonds.* H. Rolland, P. Potin, J. P. Majoral, G. Bertrand, **Phosphorus, Sulfur, and Silicon** **1993**, *76*, 211-214.
- 96 *Synthese und thermolyseverhalten von Si-funktionellen 2-silaazetidinen.* N. Auner, A. W. Weingartner, G. Bertrand, **Chem. Ber.** **1993**, *126*, 581-589.
- 97 *DBU and DBN are strong nucleophiles: X-ray crystal structures of onio- and dionio-substituted phosphanes.* R. Reed, R. Reau, F. Dahan, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1993**, *32*, 399-401.
- 98 *Transition-metal complexes featuring a diazo group on a ligand : X-ray crystal structure of $[\text{exo-}(\text{Me}_3\text{SiCN}_2)\text{-}\eta^5\text{-C}_6\text{H}_6]\text{Mn(CO)}_3$.* R. Reau, R. W. Reed, F. Dahan, G. Bertrand, **Organometallics** **1993**, *12*, 1501-1502.

- 99 *The “phosphonioyl(phosphoranediy)carbene” [(iPr₂N)₂P(H)CP(NiPr₂)₂]⁺ as a source of new 1,3-diphosphaallene ylides : the first carbodiphosphoranes with P-H bonds.* M. Soleilhavoup, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1993**, *32*, 1167-1169.
- 100 *Synthesis and evolution of phosphanylcarbene-borane adducts.* G. Alcaraz, R. Reed, A. Baceiredo, G. Bertrand, **J. Chem. Soc., Chem. Commun.** **1993**, 1354-1355.
- 101 *Straightforward synthesis of polyallylphosphazenes from poly(dichlorophosphazene).* H. Rolland, P. Potin, J. P. Majoral, G. Bertrand, **Inorg. Chem.** **1993**, *32*, 4679-4680.
- 102 *Synthesis and molecular structure of a 1,2λ⁵-azaphosphete : a cyclic 4-π-electron ylide.* J. Tejada, R. Reau, F. Dahan, G. Bertrand, **J. Am. Chem. Soc.** **1993**, *115*, 7880-7881.
- 103 *Thermal and metal-catalyzed rearrangements of bis(stannyl)diazo derivatives into carbodiimides: carbodiimide-transfer reactions.* G. Veneziani, R. Reau, G. Bertrand, **Organometallics** **1993**, *12*, 4289-4290.
- 104 *Formation of polyaza-phospholes and -phospholyl anions from diazomethylenephosphoranes induced by pseudo-aromaticity.* A. Baceiredo, M. Nieger, E. Niecke, G. Bertrand, **Bull. Soc. Chim. Fr.** **1993**, *130*, 757-760.
- 105 *Nucleophilic additions to a diphosphirenium salt : ring opening and ring expansion reactions.* M. Soleilhavoup, A. Baceiredo, F. Dahan, G. Bertrand, **J. Chem. Soc., Chem. Commun.** **1994**, 337-338.
- 106 *Reactivity of a phosphanylcarbene(λ⁵-phosphaacetylene) with Lewis acids : X-ray crystal structures of the first carbene-gallane complex and C-gallyl-substituted phosphorus ylides.* A. H. Cowley, F. P. Gabbai, C. J. Carrano, L. M. Mokry, M. R. Bond, G. Bertrand. **Angew. Chem. Int. Ed. Engl.** **1994**, *33*, 578-580.
- 107 *λ⁵-phosphonitriles-λ³-phosphinonitrenes : evidence for nitrene-Lewis acid adducts.* G. Alcaraz, A. Baceiredo, F. Dahan, G. Bertrand, **J. Am. Chem. Soc.** **1994**, *116*, 1225-1229.
- 108 *Preparation of mono- and bis(germyl)nitrilimines from germylenes and stannyl diazo derivatives.* C. Leue, R. Reau, B. Neumann, H. G. Stammler, P. Jutzi, G. Bertrand, **Organometallics** **1994**, *13*, 436-438.
- 109 *Aluminum chloride promoted aminolysis of N-tosyl lactams.* E. Bon, D. C. H. Bigg, G. Bertrand. **J. Org. Chem.** **1994**, *59*, 1904-1906.
- 110 *Evidence for imidoynitrene intermediates in the reaction of bromophenyldiazirine with phosphines : first ring-expansion reaction of a diazirine.* G. Alcaraz, A. Baceiredo, M. Nieger, G. Bertrand, **J. Am. Chem. Soc.** **1994**, *116*, 2159-2160.
- 111 *Synthesis and rearrangement of intramolecularly stabilized 1σ²,3σ²-diphosphaallylic cations into intramolecularly stabilized 1σ¹,3σ³-diphosphaallylic cations.* M. Soleilhavoup,

- Y. Canac, A. M. Polozov, A. Baceiredo, G. Bertrand, **J. Am. Chem. Soc.** **1994**, *116*, 6149-6152.
- 112 *Effects of a strong electron-withdrawing N-boryl substituent on the stability of nitrilimines : Surprising dimerization involving the nitrilimine heteroatom substituents with formation of (fused) bicyclic[3.3.0] and [4.3.0] derivatives.* N. Dubau, M. P. Arthur, F. Dahan, A. Baceiredo, G. Bertrand, **Organometallics** **1994**, *13*, 2913-2916.
- 113 *Synthesis and reactivity of cyclic 6-membered six- π - and four-membered four- π electron ylides.* K. Bieger, J. Tejada, R. Reau, F. Dahan, G. Bertrand, **J. Am. Chem. Soc.** **1994**, *116*, 8087-8094.
- 114 *Aluminum chloride promoted transamidation reactions.* E. Bon, D. C. H. Bigg, G. Bertrand **J. Org. Chem.** **1994**, *59*, 4035-4036.
- 115 *Reactions Of Stable (Phosphino)(Silyl)Carbenes With Iminophosphines.* V. Romanenko, A. O. Gudima, A. N. Chernega, J. M. Sotiropoulos, G. Alcaraz, G. Bertrand, **Bull. Soc. Chim. Fr.** **1994**, *131*, 748-753.
- 116 *N-cyano-P-hydrogenoiminophosphorane-trimethylchlorostannane adducts $[R_2P(H)=N-CN. Me_3SnCl]$ and related species: building blocks for bis(carbodiimides) of phosphorus.* G. Veneziani, P. Dyer, R. Reau, G. Bertrand, **Inorg. Chem.** **1994**, *33*, 5639-5642.
- 117 *Bis(phosphino)carbodiimide: a bis(1,3)dipole.* G. Veneziani, R. Reau, F. Dahan, G. Bertrand, **J. Org. Chem.** **1994**, *59*, 5927-5929.
- 118 *Synthesis and reactivity of cyclic 4- π -electron ylides: non-antiaromatic inorganic ring systems.* R. Reau, A. Baceiredo, G. Bertrand, **Phosphorus, Sulfur, and Silicon** **1994**, *93-94*, 1-12.
- 119 *Phosphorus substituted "CN₂" groups : building blocks in heterocyclic chemistry.* A. Baceiredo, R. Reau, G. Bertrand, **Bull. Soc. Chim. Bel.** **1994**, *103*, 531-537.
- 120 *Phosphorus chemistry: introduction,* G. Bertrand, **Chem. Rev.** **1994**, *94*, 1161-1162.
- 121 *Structural investigation into the surprising stability of free and complexed bis(amino) phosphine azides.* A. H. Cowley, F. P. Gabbai, G. Bertrand, C. J. Carrano, M. R. Bond, **J. Organomet. Chem.** **1995**, *493*, 95-99.
- 122 *Synthesis of onio-, dionio-, and trionio-substituted phosphines; the nucleophilic behavior of DBN an DBU toward main group electrophiles.* G. Bouhadir, R.W. Reed, R. Reau, G. Bertrand, **Heteroatom Chem.** **1995**, *6*, 371-375.
- 123 *Synthesis of a 2H-azirine by [1+2]-cycloaddition of a phosphinocarbene with a nitrile and its ring-expansion to a 1,2 λ^5 -azaphosphete.* G. Alcaraz, U. Wecker, A. Baceiredo, F. Dahan, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1995**, *34*, 1246-1248.

- 124 *Lawesson's reagent: an efficient 1,3-dipole trapping agent.* N. Dubau-Assibat, A. Baceiredo, G. Bertrand, **J. Org. Chem.** **1995**, *60*, 3904-3906.
- 125 *The surprising unstability of (phosphino)(stannyl)carbenes!* N. Emig, J. Tejada, R. Reau, G. Bertrand, **Tetrahedron Lett.** **1995**, *36*, 4231-4234.
- 126 *Addition of a diphosphirenium salt to palladium(0) complexes: the first examples of diphospha- metallacyclobutenes.* Y. Canac, M. Soleilhavoup, L. Ricard, A. Baceiredo, G. Bertrand, **Organometallics** **1995**, *14*, 3614-3616.
- 127 *Synthesis of a stable 1 λ^5 ,2 λ^3 -diphosphete: the first codimer of a λ^3 -phosphaalkyne with a λ^5 -phosphaalkyne.* R. Armbrust, M. Sanchez, R. Reau, U. Bergstrasser, M. Regitz, G. Bertrand, **J. Am. Chem. Soc.** **1995**, *117*, 10785-10786.
- 128 *Synthesis of a cationic 1,3-diphospha-2,4-dipallada(II)tricyclo[1.1.1]pentane (derivative): the first structurally characterized pyramidal μ_2 -phosphinidene.* Y. Canac, A. Baceiredo, H. Gornitzka, D. Stalke, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1995**, *34*, 2677-2679.
- 129 *A new reaction involving 1,5-diazabicyclo[4.3.0]non-5-ene as a nucleophile and a two proton donor.* P. Dyer, O. Guerret, F. Dahan, A. Baceiredo, G. Bertrand, **J. Chem. Soc., Chem. Commun.** **1995**, 2339-2340.
- 130 *A new approach to the synthesis of diazomethylenephosporanes ($>P=C=N_2$).* N. Dubau-Assibat, A. Baceiredo, F. Dahan, G. Bertrand, **Bull. Soc. Chim. Fr.** **1995**, *132*, 1139-1143.
- 131 *Bis(diisopropylamino)phosphano(trimethylsilyl)diazomethane- $(CH_3)_3SiC(=N_2)P[N(i-C_3H_7)_2]_2$.* A. Baceiredo, G. Bertrand. **Synthetic Methods of Organometallic and Inorganic Chemistry**, Georg Thieme Verlag, Stuttgart, **1996**, *1*, 67-69.
- 132 *Bis(diisopropylamino)boryl]diazomethane- $HC(=N_2)B[N(i-C_3H_7)_2]_2$.* M. P. Arthur, G. Bertrand, **Synthetic Methods of Organometallic and Inorganic Chemistry**, Georg Thieme Verlag, Stuttgart, **1996**, *1*, 69-70.
- 133 *Bis(triisopropylsilyl)nitrilimine- $(i-C_3H_7)_3SiCNNSi(i-C_3H_7)_3$.* F. Castan, G. Bertrand, **Synthetic Methods of Organometallic and Inorganic Chemistry**, Georg Thieme Verlag, Stuttgart, **1996**, *1*, 70-71.
- 134 *Synthesis of stable multifunctional C-phosphonio phosphorus vinyl ylides.* P. Dyer, A. Baceiredo, G. Bertrand, **Inorg. Chem.** **1996**, *35*, 46-50.
- 135 *Comment jouer avec un vieux concept tel que l'antiaromaticité?* G. Bertrand, R. Reau, A. Baceiredo, **Lettre des Sciences Chimiques** **1996**, November-décember-january, 20-22.
- 136 *λ^5 -phosphetes, benzo- λ^5 -phosphetes, naphtho- λ^5 -phosphetes: four- π , eight- π , and twelve- π electron systems.* U. Heim, H. Pritzkow, U. Fleischer, H. Grutzmacher, M. Sanchez, R. Reau, G. Bertrand, **Chem. Eur. J.** **1996**, *2*, 68-74.

- 137 *The ligand behaviour of a (Z)-phosphazide (a 1,2,3,4 λ^5 -triazaphosphinine) and of the corresponding phosphazene (a 1,2 λ^5 -azaphosphete).* K. Bieger, G. Bouhadir, R. Reau, F. Dahan, G. Bertrand, **J. Am. Chem. Soc.** **1996**, *118*, 1038-1044.
- 138 *The mechanism of the exchange reaction of halodiazirines with nucleophiles revisited. Synthesis of neutral, mono- or di-cationic four- to sixteen-membered phosphorus heterocycles.* G. Alcaraz, V. Piquet, A. Baceiredo, F. Dahan, W.W. Schoeller, G. Bertrand, **J. Am. Chem. Soc.** **1996**, *118*, 1060-1065.
- 139 *Aluminum trichloride-promoted aminolysis of cyclic imides and oxazolidinones.* E. Bon, R. Reau, G. Bertrand, D. C. H. Bigg, **Tetrahedron Lett.** **1996**, *37*, 1217-1220.
- 140 *Bis(trimethylstannyl)diazomethane, (triisopropylsilyl)(trimethylstannyl)diazomethane $\text{Me}_3\text{Sn}-\text{C}(\text{N}_2)-\text{SnMe}_3$, $(i\text{-Pr})_3\text{Si}-\text{C}(\text{N}_2)-\text{SnMe}_3$.* R. Reau, G. Bertrand, **Synthetic Methods of Organometallic and Inorganic Chemistry**, Georg Thieme Verlag, Stuttgart, **1996**, *2*, 286-288.
- 141 *4- π -electron 4-membered phosphorus heterocycles.* R. Reau, A. Baceiredo, G. Bertrand, **Phosphorus, Sulfur, and Silicon** **1996**, *109/110*, 429-432.
- 142 *X-ray crystal structure, ab initio calculations, and reactivity of 1,3,2 λ^5 -diazaphosphetes: a new type of 4- π -electron 4-membered heterocycle.* G. Alcaraz, A. Baceiredo, M. Nieger, W. W. Schoeller, G. Bertrand, **Inorg. Chem.** **1996**, *35*, 2458-2462.
- 143 *Diphosphirenium salt: a new versatile ligand.* Y. Canac, G. Bouhadir, R. Reau, A. Baceiredo, G. Bertrand, **Phosphorus, Sulfur, and Silicon** **1996**, *111*, 53.
- 144 *Synthesis and reactivity of the first spectroscopically observed 1H-diazirine.* N. Dubau-Assibat, A. Baceiredo, G. Bertrand, **J. Am. Chem. Soc.** **1996**, *118*, 5216-5220.
- 145 *Synthesis and structure of the first chiral tetracoordinated aluminum cation.* N. Emig, R. Reau, H. Krautscheid, D. Fenske, G. Bertrand, **J. Am. Chem. Soc.** **1996**, *118*, 5822-5823.
- 146 *2,2,4,4-tetrakis(diisopropylamino)-1,3,2-5, 4-5-diazodiphosphete.* A. Baceiredo, J. P. Majoral, G. Bertrand, **Synthetic Methods of Organometallic and Inorganic Chemistry**, Georg Thieme Verlag, Stuttgart, **1996**, *3*, 160-161.
- 147 *From 1 σ^4 , 2 σ^2 to 1 σ^4 to 1 σ^4 , 2 σ^2 -diphosphetes ($n = 3-6$): the surprising persistence of the P-P bond.* M. Sanchez, R. Reau, F. Dahan, M. Regitz, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1996**, *35*, 2228-2230.
- 148 *Synthesis and multinuclear NMR characterization of iminophosphoranyl phosphines and silanes.* S. Goumri, F. Lacassin, A. Baceiredo, G. Bertrand, **Heteroatom Chem.** **1996**, *7*, 403-407.

- 149 *N-phosphino and N-phosphonionitrilimines: From nucleophilic to electrophilic 1,3-dipoles.* F. Palacios, J. Pagalday, V. Piquet, F. Dahan, A. Baceiredo, G. Bertrand, **J. Org. Chem.** **1997**, *62*, 292-296.
- 150 *Nitrilimines: evidence for the allenic structure in solution, experimental and ab initio studies of the barrier to racemization, and first diastereoselective [3+2]-cycloaddition.* J. L. Faure, R. Reau, M. W. Wong, R. Koch, C. Wentrup, G. Bertrand, **J. Am. Chem. Soc.** **1997**, *119*, 2819-2824.
- 151 *The versatile behavior of 1,2λ⁵-azaphosphetes towards protic nucleophiles.* G. Bouhadir, K. Bieger, P. Livotto, R. Reau, H. Gornitzka, F. Dahan, G. Bertrand, **J. Organomet. Chem.** **1977**, *529*, 79-85.
- 152 *A room temperature stable 1,3-diphosphaallyl radical.* Y. Canac, A. Baceiredo, W. W. Schoeller, D. Gigmes, G. Bertrand, **J. Am. Chem. Soc.** **1997**, *119*, 7579-7580.
- 153 *1,2,4-Triazole-3,5-diylidene: a building block for organometallic polymer synthesis.* O. Guerret, S. Sole, H. Gornitzka, M. Teichert, G. Trinquier, G. Bertrand, **J. Am. Chem. Soc.** **1997**, *119*, 6668-6669.
- 154 *1σ⁴,2σ^x-diphosphetes (x = 2-6): on the persistence of the P-P bond.* M. Sanchez, R. Reau, H. Gornitzka, F. Dahan, M. Regitz, G. Bertrand, **J. Am. Chem. Soc.** **1997**, *119*, 9720-9728.
- 155 *Synthesis and reactivity of a stable η²-(diphosphirenylium)W(CO)₅ complex.* D. Bourissou, Y. Canac, M.I. Collado, A. Baceiredo, G. Bertrand, **J. Am. Chem. Soc.** **1997**, *119*, 9923-9924.
- 156 *The stable (phosphino)(silyl)carbene as a Useful building block : synthesis and reactivity of 2-phosphorus substituted 2H-azirines.* V. Piquet, A. Baceiredo, H. Gornitzka, F. Dahan, G. Bertrand, **Chem. Eur. J.** **1997**, *3*, 1757-1764.
- 157 *One-pot synthesis and reactivity of new tetrazoles, 1,3,4-oxa- and 1,2,3-thiadiazoles.* D. Bourissou, C. Dupuch, F. Dahan, G. Bertrand, **Bull. Soc. Chim. Bel.** **1997**, *106*, 533-539.
- 158 *Organophosphorus compounds; 123.¹ Trimethylsilylphosphaacetylene as cycloaddition partner for 1,2-dipoles.* W. Fiedler, M. Regitz, G. Bertrand, **Bull. Soc. Chim. Bel.** **1997**, *106*, 455-460.
- 159 *New routes to free and coordinated 1H-diphosphirenes,* D. Bourissou, Y. Canac, M. I. Collado, A. Baceiredo, G. Bertrand, **J. Chem. Soc., Chem. Commun.** **1997**, 2399-2400.
- 160 *Evidence for a transient acylphosphenium ion.* M. Soleilhavoup, O. Guerret, J. L. Faure, A. Baceiredo, G. Bertrand, **Phosphorus, Sulfur and Silicon** **1997**, *123*, 161-167.
- 161 *Oxydation-induced ring expansion of a 2-phosphino-2H-azirine.* V. Piquet, A. Baceiredo, F. Dahan, G. Bertrand, **C. R. Acad. Sc. Paris, série IIc** **1998**, 123-128.

- 162 *Isolation of a benzene valence isomer with one-electron phosphorus-phosphorus bonds.* Y. Canac, D. Bourissou, A. Baceiredo, H. Gornitzka, W. W. Schoeller, G. Bertrand, **Science**, **1998**, 279, 2080-2082.
- 163 *The azide-nitrilimine analogy in aluminum chemistry.* N. Emig, F. Gabbai, H. Krautscheid, R. Reau, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1998**, 37, 989-992.
- 164 *Transition metal complexes and cycloaddition products of pentafluorophenyl isocyanide.* D. Lentz, M. Anibarro, D. Preugschat, G. Bertrand, **J. Fluor. Chem.** **1998**, 89, 73-81.
- 165 *Neutral and cationic tetracoordinated aluminum complexes featuring tridentate nitrogen donors: synthesis, structure and catalytic activity for the ring opening polymerization of propylene oxide and (D,L)-lactide.* N. Emig, H. Nguyen, H. Krautscheid, R. Reau, J.-B. Cazaux, G. Bertrand, **Organometallics** **1998**, 17, 3599-3608.
- 166 *Synthesis and X-ray crystal structure of bis(germyl)carbodiimides. Spectroscopic characterisation of (hydrogeno)(germyl)cyanamides.* M. Dahrouch, M. Riviere-Baudet, H. Gornitzka, G. Bertrand, **J. Organomet. Chem.** **1998**, 562, 191-195.
- 167 *Apparent 1,2-Silyl migrations in aromatic carbenes occur by intermolecular silyl exchange.* S. Sole, H. Gornitzka, O. Guerret, G. Bertrand. **J. Am. Chem. Soc.** **1998**, 120, 9100-9101.
- 168 *The inferior p-donor ability of phosphanyl orus versus amino substituent : consequences on the stability and reactivity of phosphanyl- and aminocarbenes.* S. Goumri, Y. Leriche, H. Gornitzka, A. Baceiredo, G. Bertrand, **Eur. J. Inorg. Chem.** **1998**, 1539-1542.
- 169 *Les liaisons phosphore-phosphore à 1 électron et un nouveau défi aux structures de Lewis.* G. Bertrand, **Lettre des Sciences Chimiques**, **1998**, August, September, October, 22-23.
- 170 *From 2-phosphino-2H-phosphirene to 1-phosphino-1H phosphirene, 1 λ^5 ,2 λ^3 -diphosphete, and 1,2-dihydro-1 λ^3 ,2 λ^3 -diphosphete: an experimental and theoretical study.* M. Sanchez, R. Reau, C. J. Marsden, M. Regitz, G. Bertrand, **Chem. Eur. J.** **1999**, 5, 274-279.
- 171 *The deprotonated iminophosphorane o-C₆H₄PPh₂P = NSiMe₃ as a novel chelating ligand in organocopper(I) and -zinc(II) chemistry.* S. Wingerter, H. Gornitzka, G. Bertrand, D. Stalke, **Eur. J. Inorg. Chem.** **1998**, 173-178.
- 172 *Effect of lithiation on the reactivity of diazo derivatives with sulfonylalkynes: application to the synthesis of three isomeric trisubstituted pyrazoles.* D. Bourissou, G. Bertrand, **Tetrahedron Lett.** **1999**, 40, 883-886.
- 173 *Synthetic utility of stable phosphanylcarbenes : synthesis and crystal structure of an α -(lithiomethylene)phosphorane.* S. Goumri-Magne, H. Gornitzka, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1999**, 38, 678-680.

- 174 *Free and supported phosphorus ylides as strong neutral brønsted bases.* S. Goumri, O. Guerret, H. Gornitzka, J. B. Cazaux, D. Bigg, F. Palacios, G. Bertrand, **J. Org. Chem.** **1999**, *64*, 3741-3744.
- 175 *On the way to phosphino-phosphaalkyne.* D. Bourissou, P. Lefloch, F. Mathey, G. Bertrand, **C. R. Acad. Sc. Paris, série IIc** **1999**, 351-357.
- 176 *Ligand properties of 1H-diphosphirenes and diphosphirenylium salts towards iron carbonyl fragments.* D. Bourissou, Y. Canac, H. Gornitzka, A. Baceiredo, G. Bertrand, **J. Chem. Soc. Chem. Commun.** **1999**, 1535-1536.
- 177 *New types of stable aldehydes : formylphosphane and formylphosphane oxide.* D. Ansallem, H. Gornitzka, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1999**, *38*, 2201-2203.
- 178 *Tungsten carbonyl complexe of 1H-diphosphirenes and diphosphirenylium salt.* D. Bourissou, Y. Canac, H. Gornitzka, C. J. Marsden, A. Baceiredo, G. Bertrand, **Eur. J. Inorg. Chem.** **1999**, 1479-1488.
- 179 *2- π - and 3- π -electron diphosphorus-containing 3-membered heterocycles.* Y. Canac, D. Bourissou, H. Gornitzka, W. W. Schoeller, A. Baceiredo, G. Bertrand, **Phosphur, Sulfur and Silicon** **1999**, *144-146*, 37-40.
- 180 *Synthesis, characterization and dynamic behavior of mono- and dinuclear palladium(II) carbene complexes derived from 1,1'methylenebis(4-alkyl-1,2,4-triazolium) diiodides.* G. Bertrand, E. Diez-Barra, J. Fernandez-Baeza, H. Gornitzka, A. Moreno, A. Otero, R. I. Rodriguez-Curiel, J. Tejada. **Eur. J. Inorg. Chem.** **1999**, 1965-1971.
- 181 *The dramatic influence of diamidoamine ligands on the structure and reactivity of low-valent tin and bismuth derivatives.* J. L. Faure, H. Gornitzka, R. Reau, D. Stalke, G. Bertrand, **Eur. J. Inorg. Chem.** **1999**, 2295-2299.
- 182 *The electrophilic behavior of stable phosphanylcarbenes towards phosphorus lone pair.* S. Goumri, O. Polischuck, H. Gornitzka, C. J. Marsden, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **1999**, *38*, 3727-3729.
- 183 *Transmetalation reaction of dimethylzinc and bis(2-pyridyl)methyl)lithium.* H. Gornitzka, C. Hemmert, G. Bertrand, M. Pfeiffer, D. Stalke, **Organometallics** **2000**, *19*, 112-114.
- 184 *On the electronic structure of (phosphino)(silyl) carbenes : single crystal X-ray diffraction and ELF analyses.* T. Kato, H. Gornitzka, A. Baceiredo, A. Savin, G. Bertrand, **J. Am. Chem. Soc.** **2000**, *122*, 998-999.
- 185 *Easy and efficient generation of reactive anions with free and supported ylides as neutral brønsted bases.* F. Palacios, D. Aparicio, J. M. De Los Santos, A. Baceiredo, G. Bertrand, **Tetrahedron** **2000**, *56*, 663-669.

- 186 *Stable versions of transient push-pull carbenes : extending lifetimes from nanoseconds to weeks.* C. Buron, H. Gornitzka, V. Romanenko, G. Bertrand, **Science** **2000**, 288, 834-836.
- 187 *Stereoselectivity and stéréospécificity of cyclopropanation reactions with stable (phosphanyl)(silyl)carbenes.* S. Goumri-Magnet, T. Kato, H. Gornitzka, A. Baceirido, G. Bertrand, **J. Am. Chem. Soc.** **2000**, 122, 4464-4470.
- 188 *1,2,4-Triazolium-5-ylidene and 1,2,4-Triazol-3,5-diylidene as new ligands for transition metals.* O. Guerret, S. Sole, H. Gornitzka, G. Trinquier, G. Bertrand, **J. Organomet. Chem.** **2000**, 600, 112-117.
- 189 *Free and supported phosphorus ylides : efficient, neutral non-nucleophilic brønsted bases with a wide utility in organic synthesis.* G. Bertrand, J.B. Cazaux, A. Baceiredo, O. Guerret, F. Palacios, D. Aparicio, J. M. De Los Santos, **C. R. Acad. Sc. Paris** **2000**, 3, 261-265.
- 190 *A cyclic carbanionic valence isomer of a carbocation: diphosphino analogs of diaminocarboxocations.* T. Kato, H. Gornitzka, A. Baceiredo, W. W. Schoeller, G. Bertrand **Science** **2000**, 289, 754-756.
- 191 *The peculiar behavior of a diphosphirenium salt towards sodium η^5 -cyclopentadienyl (dicarbonyl)ferrate.* T. Kato, O. Polishchuk, H. Gornitzka, A. Baceiredo, G. Bertrand, **J. Organomet. Chem.** **2000**, 613, 33-36.
- 192 *Synthesis, structure, and reactivity of a $1\sigma^4,3\sigma^2$ -diphosphaallene.* T. Kato, H. Gornitzka, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed. Engl.** **2000**, 39, 3319-3321.
- 193 *Diphosphetes-substituent stabilized ring systems.* G. Bertrand, W. Eisfeld, L. Nyulaszi, R. Reau, M. Regitz, D. Szieberth, **J. Chem. Soc., Perkin Trans.** **2000**, 2, 2324-2327.
- 194 *The "one-pot" syntheses of α,α' -diphosphino-substituted imines: a unique reaction of bulky bis(dialkylamino)chlorophosphines.* A. Baceiredo, G. Bertrand, P. W. Dyer, J. Fawcett, N. Griep-Raming, O. Guerret, M. J. Hanton, D. R. Russell, A. M. Williamson, **New J. Chem.** **2001**, 25, 591-596.
- 195 *(Amino)(aryl)carbenes : stable singlet carbenes featuring a spectator substituent.* S. Sole, H. Gornitzka, W.W. Schoeller, D. Bourissou, G. Bertrand, **Science** **2001**, 292, 1901-1903.
- 196 *Formation of the monoanion $[ArP(BH_3)(\square-BH_2)2H]^-$ with a symmetrically bridging hydride from the attempted synthesis of the dianion $[ArP(BH_3)_3]^{2-}$.* V. L. Rudzevich, H. Gornitzka, V. Romanenko, G. Bertrand, **Chem. Commun.** **2001**, 1634-1635.
- 197 *The first asymmetric cyclopropanation reactions involving a stable carbene.* J. Krysiak, T. Kato, H. Gornitzka, A. Baceiredo, M. Mikolajczyk, G. Bertrand, **J. Org. Chem.** **2001**, 66, 8240-8242.
- 198 *Ruthenium carbene complexes containing a triazolidene cationic ligand.* A. Chaumonnot, B. Donnadieu, S. Sabo-Etienne, B. Chaudret, C. Buron, G. Bertrand, P. Mitivier, **Organometallics** **2001**, 20, 5614-5618.

- 199 *Singlet diradicals: from transition states to crystalline compounds*. D. Scheschkewitz, H. Amii, H. Gornitzka, W.W. Schoeller, D. Bourissou, G. Bertrand, **Science** **2002**, 295, 1880-1881.
- 200 *Synthesis and rearrangement of diphosphorus analogues of amidinium salt*. T. Kato, H. Gornitzka, A. Baceiredo, W. W. Schoeller, G. Bertrand, **J. Am. Chem. Soc.** **2002**, 124, 2506-2512.
- 201 *The first "naked" primary phosphanide anion [ArPH]⁻*. V. L. Rudzevich, H. Gornitzka, K. Miqueu, J.-M. Sotiropoulos, G. Pfister-Guillouzo, V. Romanenko, G. Bertrand, **Angew. Chem. Int. Ed.** **2002**, 41, 1193-1195.
- 202 *Zinc(II), Samarium(III) and Tin(II) complexes featuring a tridentate nitrogen donor for the ring-opening copolymerization of (D,L)-lactide and glycolide*. A. Dumitrescu, B. Martin-Vaca, H. Gornitzka, J.-B. Cazaux, D. Bourissou, G. Bertrand, **Eur. J. Inorg. Chem.**, **2002**, 1948-1951.
- 203 *A crystalline phosphenium salt featuring the electron-withdrawing 2,6-bis(trifluoromethyl)phenyl group*. A. Dumitrescu, H. Gornitzka, W. W. Schoeller, D. Bourissou, G. Bertrand, **Eur. J. Inorg. Chem.** **2002**, 1953-1956.
- 204 *Stable Non Push-Pull (Phosphino)carbenes: NMR Characterization of a Methylcarbene*. E. Despagne, H. Gornitzka, A. Rozhenko, W. W. Schoeller, D. Bourissou, G. Bertrand, **Angew. Chem., Int. Ed.** **2002**, 41, 2835-2837.
- 205 *The stable pentamethylcyclopentadienyl cation remains unknown*. M. Otto, D. Scheschkewitz, T. Kato, M. M. Midland, J. F. Lambert, G. Bertrand, **Angew. Chem., Int. Ed.** **2002**, 41, 2275-2276.
- 206 *Stable (Amino)(phosphino)carbenes: Difunctional Molecules*. N. Merceron, K. Miqueu, A. Baceiredo, G. Bertrand, **J. Am. Chem. Soc.** **2002**, 124, 6806-6807.
- 207 *Stable (aryl)(phosphino)carbenes : New ligands for transition metals*. E. Despagne, K. Miqueu, H. Gornitzka, P. W. Dyer, D. Bourissou, G. Bertrand, **J. Am. Chem. Soc.** **2002**, 124, 11834-11835.
- 208 *C-Phosphanyl-C-chloroiminium salts as electrophilic carbene synthetic equivalents*. N. Merceron, A. Baceiredo, H. Gornitzka, G. Bertrand, **Chem. Commun.** **2002**, 2250-2251.
- 209 *Synthesis and Structure of 1,2,4-Triazol-2-ium-5-ylidene Complexes of Hg(II), Pd(II), Ni(II), Ni(0), Rh(I) and Ir(I)*. C. Buron, L. Stelzig, O. Guerret, H. Gornitzka, V. Romanenko, G. Bertrand, **J. Organomet. Chem.** **2002**, 664, 70-76.
- 210 *A Rare Example of a Four Structural Isomers' Rearrangement: α -Phosphino nitrile - C-Phosphino ketenimine - 1-Aza-4-phosphabutadiene - 1,2-Dihydro-1,2-azaphosphete*. D. Amsallem, S. Mazieres, V. Piquet-Faure, H. Gornitzka, A. Baceiredo, G. Bertrand, **Chem. Eur. J.** **2002**, 8, 5305-5311.

- 211 *Various Stabilization Modes of (Phosphino)(Aryl)Carbenes*. E. Despagne-Ayoub, S. Solé, H. Gornitzka, A. B. Rozhenko, W. W. Schoeller, D. Bourissou, G. Bertrand, **J. Am. Chem. Soc.** **2003**, *125*, 124-130.
- 212 *Transient Azomethine-ylides from a Stable Amino-Carbene and an Aldiminium Salt*. X. Cattoën, S. Solé, C. Pradel, H. Gornitzka, K. Miqueu, D. Bourissou, G. Bertrand, **J. Org. Chem.** **2003**, *68*, 911-914.
- 213 *The First Coordination of an (α -Diazo)Phosphine to a Transition Metal Center*. E. Despagne-Ayoub, H. Gornitzka, J. Fawcett, P. W. Dyer, D. Bourissou, G. Bertrand, **Organometallics** **2003**, *22*, 1358-1360.
- 214 *Synthesis and Reactivity of a Stable Crystalline Diastereomerically Pure Trifluoromethanesulfinic Acid Derivative: (S)-(-)-1-Trifluoromethylsulfinyl-(R)-4-phenyloxazolidin-2-one*. V. D. Romanenko, C. Thoumazet, V. Lavallo, F. S. Tham, G. Bertrand, **Chem. Commun.** **2003**, 1680-1681.
- 215 *On the Electronic Structures of the 1,3-Dibora-cyclobutane-1,3-diyls*. W. W. Schoeller, A. Rozhenko, D. Bourissou, G. Bertrand, **Chem. Eur. J.** **2003**, *9*, 3611-3617.
- 216 *(Phosphino)(Aryl)Carbene: Ground- and Excited-State Reactions*. E. Despagne-Ayoub, H. Gornitzka, D. Bourissou, G. Bertrand, **Eur. J. Org. Chem.** **2003**, 2039-2042.
- 217 *nido-5-Vertex Clusters In and Out of Boron Chemistry*. Y. Canac, G. Bertrand, **Angew. Chem. Int. Ed.** **2003**, *42*, 3578-3580.
- 218 *Reactions of a Stable (Phosphino)(silyl)carbene with Alkyl Aldehydes: [2+1] versus [2+2] Addition to Carbonyl*. O. Illa, H. Gornitzka, V. Branchadell, A. Baceiredo, G. Bertrand, R. M. Ortuño, **Eur. J. Org. Chem.** **2003**, 3147-3152.
- 219 *Carbene's synthesis via Substitution Reactions at a Carbene Center*. N. Merceron-Saffon, A. Baceiredo, H. Gornitzka, G. Bertrand, **Science** **2003**, *301*, 1223-1225.
- 220 *Theoretical Study of Ligand Effects in Rhodium(I) Carbene complexes: The Structural Versatility of Phosphino- Compared to Amino-Carbenes*. K. Miqueu, E. Despagne-Ayoub, F. W. Dyer, D. Bourissou, G. Bertrand, **Chem. Eur. J.** **2003**, *9*, 5858-5864.
- 221 *Synthesis and Structural Characterization of Unusual Amido Samarium(III) Complexes*. B. Martín-Vaca, A. Dumitrescu, H. Gornitzka, D. Bourissou, G. Bertrand, **J. Organomet. Chem.** **2003**, *682*, 263-266.
- 222 *Stereoselective Synthesis of Phosphoranyl Aryloxiranes through the Addition of a Nucleophilic Stable Carbene to Aromatic Aldehydes*. O. Illa, H. Gornitzka, A. Baceiredo, G. Bertrand, V. Branchadell, R. M. Ortuño, **J. Org. Chem.** **2003**, *68*, 7707-7710.

- 223 *Role of the 2,6-Bis(trifluoromethyl)phenyl group on the acidity of the corresponding phosphine.* K. Miqueu, J. M. Sotiropoulos, G. Pfister-Guillouzo, V. Rudzevitch, V. Romanenko, G. Bertrand, **Eur. J. Inorg. Chem.** **2004**, 381-387.
- 224 *σ Bond Stretching: a Static Approach for a Dynamic Process.* D. Scheschkewitz, H. Amii, H. Gornitzka, W. W. Schoeller, D. Bourissou, G. Bertrand, **Angew. Chem. Int. Ed.** **2004**, 43, 585-587.
- 225 *Mono- and Di-Amino Carbenes from Chloro-Iminium and -Amidinium Salts: Synthesis of Metal-Free Bis(dimethylamino)carbene.* M. Otto, S. Conejero, Y. Canac, V. D. Romanenko, V. Rudzevitch, G. Bertrand, **J. Am. Chem. Soc.** **2004**, 126, 1016-1017.
- 226 *Amino-Aryl-Carbenes : Alternative Ligands for Transition Metals?* X. Cattoën, H. Gornitzka, D. Bourissou, G. Bertrand, **J. Am. Chem. Soc.** **2004**, 126, 1342-1343.
- 227 *Radical-type Reactivity of the 1,3-Dibora-2,4-Diphosphoniocyclobutane-1,3-diyl.* H. Amii, L. Vranicar, H. Gornitzka, D. Bourissou, G. Bertrand, **J. Am. Chem. Soc.** **2004**, 126, 1344-1345.
- 228 *Stable Optically Pure Phosphino(silyl)carbenes: Reagents for Highly Enantioselective Cyclopropanation Reactions.* J. Krysiak, C. Lyon, A. Baceiredo, H. Gornitzka, M. Mikolajczyk, G. Bertrand, **Chem. Eur. J.** **2004**, 10, 1982-1986.
- 229 *α,β -(phosphino)(aminocarbene) and α,ω -(phosphino)(oxyaminocarbene): new bidentate ligands for transition metal complexes.* N. Merceron-Saffon, H. Gornitzka, A. Baceiredo, G. Bertrand, **J. Organomet. Chem.** **2004**, 689, 1431-1435.
- 230 *Reaction of a stable amino-aryl-carbene with 2-chloroacrylonitrile: dearomatizing cyclization rather than cyclopropanation.* S. Solé, X. Cattoën, H. Gornitzka, D. Bourissou, G. Bertrand, **Tetrahedron Lett.** **2004**, 45, 5391-5393 (2004).
- 231 *Synthesis of a persistent 1 sigma(3),3 sigma(3)-diphosphaallyl cation featuring a localized phosphorus-carbon double bond.* D. Martin, A. Baceiredo, G. Bertrand, **Eur. J. Inorg. Chem.** **2004**, 3533-3537.
- 232 *Readily Available Onio-Substituted Aldiminium Salts: Single Precursors for a Variety of Aminocarbenes.* S. Conejero, Y. Canac, F. S. Tham, G. Bertrand, **Angew. Chem. Int. Ed.** **2004**, 43, 4089-4093.
- 233 *Catenation of two Singlet Diradicals: Synthesis of a Stable Tetraradical (Tetraradicaloid).* A. Rodriguez, F. S. Tham, W. W. Schoeller, G. Bertrand, **Angew. Chem. Int. Ed.** **2004**, 43, 4876-4880.
- 234 *Evidence for the co-existence of two stretch isomers in solution.* A. Rodriguez, R. A. Olsen, N. Ghaderi, D. Scheschkewitz, F. S. Tham, L. J. Mueller, G. Bertrand, **Angew. Chem. Int. Ed.** **2004**, 43, 4880-4883.

- 235 *Synthesis, Reactivity and Ligand Properties of a Stable Alkyl carbene*. V. Lavallo, J. Mafhouz, Y. Canac, B. Donnadieu, W. W. Schoeller, G. Bertrand, **J. Am. Chem. Soc.** **2004**, *126*, 8670-8671.
- 236 *The Modest Undressing of a Silicon Center*. G. Bertrand, **Science (Perspective)** **2004**, *305*, 783-785.
- 237 *Persistent phosphinyl radicals featuring a bulky amino substituent and the 2,6-bis(trifluoromethyl)phenyl group*. A. Dumitrescu, V. L. Rudzevich, V. D. Romanenko, A. Mari, W. W. Schoeller, D. Bourissou, G. Bertrand, **Inorg. Chem.** **2004**, *43*, 6546-6548.
- 238 *A Stable P-Heterocyclic Carbenes*. D. Martin, A. Baceiredo, H. Gornitzka, W. W. Schoeller, G. Bertrand, **Angew. Chem. Int. Ed.** **2005**, *44*, 1700-1703.
- 239 *Evidence for radical fragmentations from persistent singlet carbenes*. X. Cattoen, K. Miqueu, H. Gornitzka, D. Bourissou, G. Bertrand, **J. Am. Chem. Soc.** **2005**, *127*, 3292-3293.
- 240 *C-Phosphoniophosphaalkenes as Precursors of $1s^4,3s^2$ -Diphosphaallenes : Scope and Limitations*. D. Martin, H. Gornitzka, A. Baceiredo, G. Bertrand, **Eur. J. Inorg. Chem.** **2005**, 2619-2624.
- 241 *Persistent (Amino)(Silyl)Carbenes*. Y. Canac, S. Conejero, B. Donnadieu, W. W. Schoeller, G. Bertrand, **J. Am. Chem. Soc.** **2005**, *127*, 7312-7313.
- 242 *Theoretical and Experimental Investigation of the Basicity of Phosphino(silyl)-carbenes*. D. Martin, O. Illa, A. Baceiredo, G. Bertrand, R. M. Ortuno, V. Branchadell, **J. Org. Chem.** **2005**, *70*, 5671-5677.
- 243 *Dimerization of a Cyclo- $1s^4,3s^2,4s^2$ -Triphosphabutadienyl Radical: Evidence for Phosphorus-Phosphorus Odd-Electron Bonds*. T. Kato, H. Gornitzka, W. W. Schoeller, A. Baceiredo, G. Bertrand, **Angew. Chem. Int. Ed.** **2005**, *44*, 5497-5500.
- 244 *Stable Cyclic (Alkyl)(Amino)Carbenes as Rigid or Flexible, Bulky, Electron-Rich Ligands for Transition Metal Catalysts: a Quaternary Carbon Makes the Difference!* V. Lavallo, Y. Canac, C. Prasang, B. Donnadieu, G. Bertrand, **Angew. Chem. Int. Ed.** **2005**, *44*, 5705-5709.
- 245 *Stable Planar Six-p-Electron Six-Membered N-Heterocyclic Carbenes with Tunable Electronic Properties*. C. Prasang, B. Donnadieu, G. Bertrand, **J. Am. Chem. Soc.** **2005**, *127*, 10182-10183.
- 246 *A Stable (Amino)(Phosphino)Carbene as bidentate ligand for Palladium and Nickel Complexes: Synthesis, Structure, and Catalytic Activity*. E. Teuma, C. Lyon-Saunier, H. Gornitzka, G. Mignani, A. Baceiredo, G. Bertrand, **J. Organomet. Chem.** **2005**, *690*, 5541-5545.

- 247 *A Rigid Cyclic (Alkyl)(amino)carbene Ligand Leads to Isolation of Low-Coordinate Transition-Metal Complexes.* V. Lavallo, Y. Canac, A. Dehope, B. Donnadiou, G. Bertrand, **Angew. Chem. Int. Ed.** **2005**, *44*, 7236-7239.
- 248 *Toward phenanthridin-2-ylidene: electrophilicity versus acidity in planar constrained C-aryl iminium salts.* X. Cattoën, D. Bourissou, G. Bertrand, **Tetrahedron Lett.** **2006**, *47*, 531-534.
- 249 *Synthesis of Transient and Stable C-Amino Phosphorus Ylides and their Fragmentation into Transient and Stable Carbenes.* Y. Canac, S. Conejero, M. Soleilhavoup, B. Donnadiou, G. Bertrand, **J. Am. Chem. Soc.** **2006**, *128*, 459-464.
- 250 *CO Fixation to Stable Acyclic and Cyclic Alkyl Amino Carbenes: Stable Amino Ketenes with a Small HOMO-LUMO Gap.* V. Lavallo, Y. Canac, B. Donnadiou, W. W. Schoeller, G. Bertrand, **Angew. Chem. Int. Ed.** **2006**, *45*, 3488-3491.
- 251 *Cyclopropenylidenes: From Interstellar Space to an isolated Derivative in the Laboratory.* V. Lavallo, Y. Canac, B. Donnadiou, W. W. Schoeller, G. Bertrand, **Science**. **2006**, *312*, 722-724.
- 252 *A New Synthetic Method for the Preparation of Protonated-NHCs and Related Compounds.* R. Jazzar, H. Liang, B. Donnadiou, G. Bertrand, **J. Organomet. Chem.** **2006**, *691*, 3201-3205.
- 253 *New Synthetic Routes to C-Amino Phosphorus Ylides and their Subsequent Fragmentation into Carbenes and Phosphines.* S. Conejero, M. Song, D. Martin, Y. Canac, M. Soleilhavoup, G. Bertrand, **Chem. Asian J.** **2006**, *1*, 155-160.
- 254 *Synthesis of Extended Polyphosphacumulenes.* D. Martin, F. S. Tham, A. Baceiredo, G. Bertrand, **Chem. Eur. J.** **2006**, *12*, 8444-8450.
- 255 *Isolation of Cyclopropenylidene Lithium Adducts: The Weiss-Yoshida Reagent.* V. Lavallo, Y. Ishida, B. Donnadiou, G. Bertrand, **Angew. Chem. Int. Ed.** **2006**, *45*, 6652-6655.
- 256 *Stable Four π -Electron, Four-Membered Heterocyclic Cations and Carbenes.* Y. Ishida, B. Donnadiou, G. Bertrand, **Proc. Natl. Acad. Sci. USA** **2006**, *103*, 13585-13588.
- 257 *A Facile Synthesis of Carbamoyl-Silanes, -Boranes and -Phosphine Oxides; Isolation of the First Uncomplexed Carbamoylborane.* Y. Canac, G. Aniol, S. Conejero, B. Donnadiou, G. Bertrand, **Eur. J. Inorg. Chem.** **2006**, 5076-5080.
- 258 *Cyclic C-Amino Phosphorus Ylides as a Source of Bidentate Heteroditopic Ligands (Phosphine / Aminocarbene) for Transition Metals.* J. Vignolle, B. Donnadiou, D. Bourissou, M. Soleilhavoup, G. Bertrand, **J. Am. Chem. Soc.** **2006**, *128*, 14810-14811.

- 259 *Stable P-Heterocyclic Carbenes (PHCs): Scope and Limitations*. J. D. Masuda, D. Martin, C. Lyon-Saunier, A. Baceiredo, H. Gornitzka, B. Donnadiou, G. Bertrand, **Chem. Asian J.** **2007**, *2*, 178-187.
- 260 *Transient Palladadiphosphanylcarbenes: Singlet Carbenes with an “Inverse” Electronic Configuration ($p\pi^2$ instead of σ^2) and Unusual Transannular Metal-Carbene Interactions ($p_C \rightarrow P_d$ Donation and $s_{P_d} \rightarrow C$ Back-donation)*. J. Vignolle, H. Gornitzka, L. Maron, W. W. Schoeller, D. Bourissou, G. Bertrand, **J. Am. Chem. Soc.** **2007**, *129*, 978-985.
- 261 *Transient Amino-Hydrazino-Carbenes: a Radical Pathway for Intramolecular 1,2-Migration Reactions*. X. Cattoen, H. Gornitzka, F. S. Tham, K. Miqueu, D. Bourissou, G. Bertrand, **Eur. J. Org. Chem.** **2007**, 912-917.
- 262 *An unusual norcaradiene/tropylium rearrangement from a persistent amino-phosphonio-carbene*. J. Vignolle, B. Donnadiou, D. Bourissou, G. Bertrand, **Tetrahedron Lett.** **2007**, *48*, 685-687.
- 263 *Intramolecular “Hydro-Iminiumation” of Alkenes: Application to the Synthesis of Conjugate Acids of Cyclic (Alkyl)(Amino)Carbenes (CAACs)*. R. Jazzar, R. D. Dewhurst, J.-B. Bourg, B. Donnadiou, Y. Canac, G. Bertrand, **Angew. Chem. Int. Ed.** **2007**, *46*, 2899-2902.
- 264 *Intramolecular “Hydro-Iminiumation and -Amidiniumation” of Alkenes: a Convenient, Flexible and Scalable Route to Cyclic Iminium and Imidazolinium Salts*. R. Jazzar, J.-B. Bourg, R. D. Dewhurst, B. Donnadiou, G. Bertrand, **J. Org. Chem.** **2007**, *72*, 3492-3499.
- 265 *Facile Splitting of Hydrogen and Ammonia by Nucleophilic Activation at a Single Carbon Center*. G. D. Frey, V. Lavallo, B. Donnadiou, W. W. Schoeller, G. Bertrand, **Science** **2007**, *316*, 439-441.
- 266 *Synthesis of the first phospho-formamidines and phospho-formamidinates*. M. Song, B. Donnadiou, M. Soleilhavoup, G. Bertrand, **Chem. Asian J.** **2007**, *2*, 904-908.
267. *Thermal Valence Isomerization of 2,3-Diborata-1,4-diphosphoniabuta-1,3-dienes to Bicyclo[1.1.0]butanes and Cyclobutane-1,3-diyls*. J.-B. Bourg, A. Rodriguez, D. Scheschkewitz, H. Gornitzka, D. Bourissou, G. Bertrand, **Angew. Chem. Int. Ed.** **2007**, *46*, 5741-5745.
- 268 *Synthesis and Reactivity of Olefin Metathesis Catalysts Bearing Cyclic (Alkyl)(Amino)Carbene*. D. R. Anderson, V. Lavallo, D. J. O’leary, G. Bertrand, R. H. Grubbs, **Angew. Chem. Int. Ed.** **2007**, *46*, 7262-7265.
- 269 *Recently Reported Crystalline Isothiazole Carbenes: Myth or Reality*. A. Dehope, V. Lavallo, B. Donnadiou, W. W. Schoeller, G. Bertrand, **Angew. Chem. Int. Ed.** **2007**, *46*, 6922-6925.
- 270 *Allene Formation by Gold Catalyzed Cross-Coupling of Masked Carbenes and Vinylidenes*. V. Lavallo, G. D. Frey, S. Kousar, B. Donnadiou, G. Bertrand, **Proc. Natl. Acad. Sci. USA** **2007**, *104*, 13569-13573

- 271 *Carbene Activation of P_4 and Subsequent Derivatization*. J. D. Masuda, W. W. Schoeller, B. Donnadiou, G. Bertrand, **Angew. Chem. Int. Ed.** **2007**, *46*, 7052-7055.
- 272 *Synthesis of a mixed phosphonium - sulfonium bis-ylide $R_3P=C=SR_2$* . S. Pascual, M. Asay, O. Illa, T. Kato, G. Bertrand, N. Saffon-Merceron, V. Branchadell, A. Baceiredo, **Angew. Chem. Int. Ed.** **2007**, *46*, 9078-9080
- 273 *NHC-Mediated Aggregation of P_4 : Isolation of a P_{12} Cluster*. J. D. Masuda, W. W. Schoeller, B. Donnadiou, G. Bertrand **J. Am. Chem. Soc.** **2007**, *129*, 14180-14181
- 274 *On the Existence of Two Short-Bond Isomers for Bicyclo[1.1.0]butane Derivatives Based on Boron and Phosphorus*. V. Gandon, J. B. Bourg, F. S. Tham, W. W. Schoeller, G. Bertrand, **Angew. Chem. Int. Ed.** **2008**, *47*, 155-159
- 275 *Stable Bis(diisopropylamino)cyclopropenylidene (BAC) as Ligand for Transition Metal Complexes*. G. Kuchenbeiser, B. Donnadiou, G. Bertrand **J. Organomet.** **2008**, *693*, 899-904 (Special Issue: Frontiers in Organometallic Chemistry)
- 276 *Pd–Oxygen and Pd–Arene Interactions from Biaryl-Aminocarbenes: Similarities and Differences with Biaryl-Phosphanes*, J. Vignolle, H. Gornitzka, B. Donnadiou, D. Bourissou, G. Bertrand **Angew. Chem. Int. Ed.** **2008**, *47*, 2271-2274
- 277 *1,3-Diborata-2,4-diphosphoniocyclobutane-1,3-diyls Communicate through a para-Phenyl Linker*. A. Rodriguez, G. Fuks, J. B. Bourg, D. Bourissou, F. S. Tham, G. Bertrand, **Dalton Trans** **2008**, *33*, 4482-4487
- 278 *Synthesis of a Strongly Bent Acyclic Allene (A “Carbodicarbene”): A Novel Type of Strong Donor Ligand*. C. A. Dyker, V. Lavallo, B. Donnadiou, G. Bertrand, **Angew. Chem. Int. Ed.** **2008**, *47*, 3206-3209
- 279 *Kinetic Selectivity of Olefin Metathesis Catalysts Bearing Cyclic (Alkyl)(Amino)Carbenes*. D. R. Anderson, T. Ung, G. Mkrtumyan, G. Bertrand, R. H. Grubbs, Y. Schrodi, **Organometallics** **2008**, *27*, 563-566
- 280 *Cyclic (Alkyl)(amino)carbene Gold(I) complexes: A Synthetic and Structural Investigation*. G. D. Frey, R. D. Dewhurst, S. Kousar, B. Donnadiou, G. Bertrand, **J. Organomet. Chem.** **2008**, *693*, 1674-1682 (Special Issue: In Memory of Al Cotton)
- 281 *Tuning the Nucleophilicity in Cyclopropenylidenes*, W. W. Schoeller, G. D. Frey, G. Bertrand, **Chem. Eur. J.** **2008**, *14*, 4711-4718
- 282 *Cyclic (Amino)[bis(ylide)]carbene as an Anionic Bidentate Ligand for Transition Metal Complexes*, M. Asay, B. Donnadiou, A. Baceiredo, M. Soleilhavoup, G. Bertrand, **Inorg. Chem.** **2008**, *47*, 3949-3951

- 283 *Homogeneous Catalytic Hydroamination of Alkynes and Allenes with Ammonia*, V. Lavallo, G. D. Frey, B. Donnadieu, M. Soleilhavoup, Guy Bertrand, **Angew. Chem. Int. Ed.** **2008**, *47*, 5224-5228
- 284 *Synthesis and Ligand Properties of Stable Five-Membered Ring Allenes Composed of Second Row Elements*, Vincent Lavallo, C. Adam Dyker, Bruno Donnadieu, Guy Bertrand, **Angew. Chem. Int. Ed.** **2008**, *47*, 5411-5414
- 285 *Synthesis and Ligand Properties of a Stable Five-Membered-Ring Vinylidenephosphorane*, Matthew Asay, Tsuyoshi Kato, Nathalie Saffon-Merceron, Fernando P. Cossio, Antoine Bacciredo, Guy Bertrand **Angew. Chem. Int. Ed.** **2008**, *47*, 7530-7533
- 286 *Soluble Allotropes of Main Group Elements*, C. A. Dyker, G. Bertrand, **Science** **2008**, *321*, 1050-1051
- 287 *A Persistent P,N-Heterocyclic Carbene*. G. D. Frey, M. Song, J. B. Bourg, B. Donnadieu, M. Soleilhavoup, G. Bertrand, **Chem. Commun.** **2008**, 4711-4713
- 288 *Rearrangement of Biaryl Mono-Amino-Carbenes via Concerted Asynchronous Insertion into Aromatic C–H Bonds*. J. Vignolle, M, Asay, K. Miqueu, D. Bourissou, and G. Bertrand, **Org. Lett.** **2008**, *10*, 4299-4302
- 289 *The Reluctance of 4-Chloro-5-metalla-1,3,2-diazaborolines to Undergo Metal-Halide β -Elimination: An Opportunity for C-Functionalization of 1,3,2-Diazaborolines* E. Giziroglu, B. Donnadieu, G. Bertrand, **Inorg. Chem.** **2008**, *47*, 9751-9753
- 290 *Isolation of Bicyclopropenylidenes, Derivatives of the Smallest Member of the Fulvalene Family* R. Kinjo, Y. Ishida, B. Donnadieu, G. Bertrand, **Angew. Chem. Int. Ed.** **2009**, *48*, 517-520.
- 291 *Are Allenes with Zwitterionic Character still Allenes? Of course!* V. Lavallo, C. A. Dyker, B. Donnadieu, G. Bertrand, **Angew. Chem. Int. Ed.** **2009**, *48*, 1540-1542.
- 292 *A Cationic Gold(I) Complex as a General Catalyst for the Intermolecular Hydroamination of Alkynes: Application to the One-Pot Synthesis of Allenes from Two Alkynes and a Sacrificial Amine*. X. Zeng, G. D. Frey, S. Kousar, G. Bertrand, **Chem. Eur. J.** **2009**, *15*, 3056-3060.
- 293 *Synthesis of Allenylidene Lithium and Silver Complexes, and Subsequent Transmetalation Reactions*. M. Asay, B. Donnadieu, W. W. Schoeller, G. Bertrand, **Angew. Chem. Int. Ed.** **2009**, *48*, 4796-4799.
- 294 *Synthesis and Ligand Properties of a Persistent All-Carbon Four-Membered Ring Allene*. M. Melaimi, P. Parameswaran, B. Donnadieu, G. Frenking, G. Bertrand, **Angew. Chem. Int. Ed.** **2009**, *48*, 4792-4795.

- 295 *Synthesis of a Simplified Version of Stable Bulky and Rigid Cyclic (Alkyl)(Amino)Carbenes (CAACs), and Catalytic Activity of the Ensuing Gold(I) Complex in the Three-Component Preparation of 1,2-Dihydroquinoline Derivatives* X. Zeng, G. D. Frey, R. Kinjo, B. Donnadiou, G. Bertrand **J. Am. Chem. Soc.** **2009**, *131*, 8690-8696.
- 296 *Non-Metal Mediated Fragmentation of P₄. Isolation of P₁ and P₂ Bis-Carbene Adducts* O. Back, G. Kuchenbeiser, B. Donnadiou, G. Bertrand, **Angew. Chem. Int. Ed.** **2009**, *48*, 5530-5533 (hot paper).
- 297 *Rethinking carbon* C. A. Dyker, G. Bertrand, **Nature Chem.** **2009**, *1*, 265-266.
- 298 *Umpolung of Electrophilic Terminal Phosphinidene Complexes by Interaction with Nucleophilic Carbenes* N. H. Tran Huy, B. Donnadiou, G. Bertrand, F. Mathey **Chem. Asian J.** **2009**, *4*, 1225-1228
- 299 *Exocyclic Delocalization at the Expense of Aromaticity in 3,5-bis(π -Donor) Substituted Pyrazolium Ions and Corresponding Cyclic Bent Allenes* I. Fernández, C. A. Dyker, A. DeHope, B. Donnadiou, G. Frenking, G. Bertrand, **J. Am. Chem. Soc.** **2009**, *131*, 11875-11881
- 300 *Gold Catalyzed Intermolecular Markovnikov Hydroamination of Allenes with Secondary Amines* X. Zeng, M. Soleilhavoup, G. Bertrand, **Org. Lett.** **2009**, *11*, 3166-3169
301. *Ionic-Type Reactivity of 1,3-Diborata-2,4-Diphosphonio-Cyclobutane-1,3-diyls: Regio- and Stereo-Selective Addition of Hydracids* G. Fuks, N. Saffon, L. Maron, G. Bertrand, D. Bourissou, **J. Am. Chem. Soc.** **2009**, *131*, 13681-13689.
302. *Carbenes Introduction* A. J. Arduengo, G. Bertrand, **Chem. Rev.** **2009**, *109*, 3209-3210
303. *Isolation of a C-5-Deprotonated Imidazolium, a Crystalline "Abnormal" N-Heterocyclic Carbene* E. Aldeco-Perez, A. J. Rosenthal, B. Donnadiou, P. Parameswaran, G. Frenking, G. Bertrand, **Science** **2009**, *326*, 556-559.
304. *Reactivity of Cyclic (Alkyl)(amino)carbenes (CAACs) and Bis(amino)cyclopropeny-lidenes (BACs) with Heteroallenes: Comparisons with their N-Heterocyclic Carbene (NHCs) Counterparts.* G. Kuchenbeiser, M. Soleilhavoup, B. Donnadiou, G. Bertrand, **Chem. Asian J.** **2009**, *4*, 1745-1750
305. *Oxidation of a stable 1,3-diborata-2,4-diphosphonio-cyclobutane-1,3-diyl.* G. Fuks, B. Donnadiou, A. Sacquet, L. Maron, D. Bourissou, G. Bertrand, **Main Group Chem.** **2010**, *9*, 101-109
306. *Serendipitous Discovery of the Catalytic Hydroammoniumation and Methylamination of Alkynes.* X. Zeng, R. Kinjo, B. Donnadiou, G. Bertrand, **Angew. Chem. Int. Ed.** **2010**, *49*, 942-945.

- 307 *The Phosphorus Version of the Oxaspiropentene-Cyclobutenone Rearrangement* N. H. Tran Huy, B. Donnadieu, G. Bertrand, F. Mathey, **Organometallics** **2010**, 29, 1302-1304
- 308 *Isolation of Crystalline Carbene-Stabilized P_2 -Radical Cations and P_2 -Dication*. O. Back, B. Donnadieu, P. Parameswaran, G. Frenking, G. Bertrand, **Nature Chem.** **2010**, 2, 369-373.
- 309 *Synthesis of 4- and 4,5-Functionalized Imidazol-2-ylidenes from a Single 4,5-Unsubstituted Imidazol-2-ylidene*, D. Mendoza-Espinosa, B. Donnadieu, G. Bertrand, **J. Am. Chem. Soc.** **2010**, 132, 7264-7265.
- 310 *Crystalline 1H-1,2,3-Triazol-5-ylidenes: New Stable Mesoionic Carbenes (MICs)*, G. Guisado-Barrios, J. Bouffard, B. Donnadieu, G. Bertrand, **Angew. Chem. Int. Ed.** **2010**, 49, 4759-4762.
- 311 *Isolation of a Carbene-Stabilized Phosphorus Mononitride and its Radical Cation (PN^+)* R. Kinjo, B. Donnadieu, G. Bertrand, **Angew. Chem. Int. Ed.** **2010**, 49, 5930-5933.
- 312 *A Crystalline Phosphinyl Radical Cation*, O. Back, M. Ali Celik, G. Frenking, M. Melaimi, B. Donnadieu, G. Bertrand, **J. Am. Chem. Soc.** **2010**, 132, 10262-10263.
313. *Introduction to main Group Chemistry* G. Bertrand, **Chem. Rev.** **2010**, 110, 3851-3851.
- 314 *Activation of Si-H, B-H, and P-H Bonds at a Single Nonmetal Center*, G. D. Frey, J. D. Masuda, B. Donnadieu, G. Bertrand, **Angew. Chem. Int. Ed.** **2010**, 49, 9444-9447.
- 315 *Insights Into the Carbene-Initiated Aggregation of $[Fe(cot)_2]$* , V. Lavallo, A. El-Batta, G. Bertrand, R. H. Grubbs, **Angew. Chem. Int. Ed.** **2011**, 50, 268-271.
316. *Synthesis of a Room-Temperature-Stable Dimeric Copper(I) Hydride*. G. D. Frey, B. Donnadieu, M. Soleilhavoup, G. Bertrand, **Chem. Asian J.** **2011**, 6, 402-405.
317. *Facile Preparation of Homo- and Hetero-dimetallic Complexes with a 4-Phosphino Substituted NHC Ligand. Toward the Design of Multifunctional Catalysts*. D. Mendoza-Espinosa, B. Donnadieu, G. Bertrand, **Chem. Asian J.** **2011**, 6, 1099-1103.
- 318 *A Stable Acyclic Ligand Equivalent of an Unstable 1,3-Dithiol-5-ylidene* G. Ung, D. Mendoza-Espinosa, J. Bouffard, G. Bertrand, **Angew. Chem. Int. Ed.** **2011**, 50, 4215-4218
- 319 *N-Heterocyclic Carbenes Versus Transition Metals for Stabilizing Phosphinyl Radicals*. O. Back, B. Donnadieu, M. v. Hopffgarten, S. Klein, R. Tonner, G. Frenking, G. Bertrand, **Chem. Sci.** **2011**, 2, 858-861.
- 320 *A Persistent (Amino)(ferrocenyl)carbene*. A. DeHope, D. Mendoza-Espinosa, B. Donnadieu, G. Bertrand, **New J. Chem.** **2011**, 35, 2037-2042.

- 321 *Grubbs and Hoveyda-Type Ruthenium Complexes Bearing a Cyclic Bent-Allene*. A. DeHope, B. Donnadieu, G. Bertrand, **J. Organomet. Chem** **2011**, 696, 2899-2903.
- 322 *Gold-Catalyzed Hydroamination of Alkynes and Allenes with Parent Hydrazine*. R. Kinjo, B. Donnadieu, G. Bertrand, **Angew. Chem. Int. Ed.** **2011**, 50, 5560-5563.
- 323 *Synthesis of Highly Stable 1,3-Diaryl-1H-1,2,3-triazol-5-ylidenes and Their Applications in Ruthenium-Catalyzed Olefin Metathesis*. J. Bouffard, B. K. Keitz, R. Tonner, G. Guisado-Barrios, G. Frenking, R. H. Grubbs, G. Bertrand, **Organometallics** **2011**, 30, 2617-2627.
- 324 *Stability and Electronic Properties of Imidazole-based Mesoionic Carbenes*. G. Ung, G. Bertrand, **Chem. Eur. J.** **2011**, 17, 8269-8272.
- 325 *Protonolysis of a Ruthenium-Carbene Bond and Applications in Olefin Metathesis*. B. K. Keitz, J. Bouffard, G. Bertrand, R. H. Grubbs, **J. Am. Chem. Soc.** **2011**, 133, 8498-8501 (2005 ISI Impact Factor = xxx) (NIH)
- 326 *Synthesis and Characterization of a Neutral Tricoordinate Organoboron Isoelectronic with Amines*. R. Kinjo, B. Donnadieu, M. Ali Celik, G. Frenking, G. Bertrand, **Science** **2011**, 333, 610-613.
- 327 *Bond Activation with an Apparently Benign Ethynyl Dithiocarbamate [Ar-C $\equiv$ C-S-C(S)NR₂]* G. Ung, G. D. Frey, W. W. Schoeller, G. Bertrand **Angew. Chem. Int. Ed.** **2011**, 50, 9923-9925.
- 328 *Mesoionic Thiazol-5-ylidenes as Ligands for Transition Metal Complexes*. D. Mendoza-Espinosa, G. Ung, B. Donnadieu, G. Bertrand, **Chem. Commun.** **2011**, 47, 10614-10616
- 329 *Bis(1,2,3-triazol-5-ylidenes) (i-bitz) as Stable 1,4-Bidentate Ligands Based on Mesoionic Carbenes (MICs)* G. Guisado-Barrios, J. Bouffard, B. Donnadieu, G. Bertrand, **Organometallics** **2011**, 30, 6017-6021.
- 330 *Borylene Complexes (BH)L₂ and Nitrogen Cation Complexes (N⁺)L₂ - Isoelectronic Homologues of Carbones CL₂*, M. A. Celik, R. Sure, S. Klein, R. Kinjo, G. Bertrand, G. Frenking, **Chem. Eur. J.** **2012**, 18, 5676-5692.
- 331 *Ynamides: stable ligand equivalents of unstable oxazol-4-ylidenes (novel mesoionic carbenes)*, G. Ung, D. Mendoza-Espinosa, G. Bertrand, **Chem. Commun.** **2012**, 48, 7088-7090.
- 332 *Cyclic Diaminocarbene with a Pyramidalized Nitrogen Atom: A Stable N-Heterocyclic Carbene with Enhanced Electrophilicity*, D. Martin, N. Lassauque, B. Donnadieu, G. Bertrand, **Angew. Chem. Int. Ed.** **2012**, 51, 6172-6175.
- 333 *A Crystalline Singlet Phosphinonitrene: a Nitrogen Atom Transfer Agent*, F. Dielmann, O. Back, M. Henry-Ellinger, P. Jerabek, G. Frenking, G. Bertrand, **Science** **2012**, 337, 1526-1528.

- 334 *C–F Bond activation with an apparently benign ethynyl dithiocarbamate, and subsequent fluoride transfer reactions*, G. Ung, G. Bertrand, **Chem. Eur. J.** **2012**, *18*, 12955-12957.
- 335 *Anionic 1,2,3-Triazole-4,5-diylidene: A 1,2-Dihapto Ligand for the Construction of Bimetallic Complexes*, X. Yan, J. Bouffard, G. Guisado-Barrios, B. Donnadieu, G. Bertrand, **Chem. Eur. J.** **2012**, *18*, 14627-14631.
- 336 *Gold(III)- versus Gold(I)-Induced Cyclization: Synthesis of Six-Membered Mesoionic Carbene and Acyclic (Aryl)(Heteroaryl) Carbene Complexes*, G. Ung, M. Soleilhavoup, G. Bertrand, **Angew. Chem. Int. Ed.** **2013**, *52*, 758-761.
- 337 *Synthesis and characterization of a pyrazolium bearing N-heterocyclic carbene-palladium(II) complex*, E. Giziroglu, B. Donnadieu, G. Bertrand, **J. Organomet. Chem.** **2013**, *724*, 251-254.
- 338 *³¹P NMR Chemical Shifts of Carbene–Phosphinidene Adducts as an Indicator of the *p*-Accepting Properties of Carbenes*, O. Back, M. Henry-Ellinger, C. D. Martin, D. Martin G. Bertrand, **Angew. Chem. Int. Ed.** **2013**, *52*, 2939-2943.
- 339 *Anti-Bredt N-Heterocyclic Carbene: an Efficient Ligand for the Gold(I)-Catalyzed Hydroamination of Terminal Alkynes with Parent Hydrazine*, M. J. López-Gómez, D. Martin, G. Bertrand, **Chem. Commun.** **2013**, *49*, 4483 – 4485.
- 340 *Exploring the reactivity of white phosphorus with electrophilic carbenes: synthesis of a P4 cage and P8 clusters*, C. D. Martin, C. M. Weinstein, C. E. Moore, A. L. Rheingold, G. Bertrand, **Chem. Commun.** **2013**, *49*, 4486 – 4488.
- 341 *An Air-Stable Oxyallyl Radical Cation*, D. Martin, C. E. Moore, A. L. Rheingold, G. Bertrand, **Angew. Chem. Int. Ed.** **2013**, *52*, 7014-7017. (*Hot paper*)
- 342 *Deprotonation of a Borohydride: Synthesis of a Carbene-Stabilized Boryl Anion*, D. A. Ruiz, G. Ung, M. Melaimi, G. Bertrand, **Angew. Chem. Int. Ed.** **2013**, *52*, 7590 – 7592.
- 343 *Isolation of neutral mono- and Dinuclear Gold complexes of cyclic (alkyl)(amino)carbenes* D. S. Weinberger, M. Melaimi, C. E. Moore, A. L. Rheingold, G. Frenking, P. Jerabek, G. Bertrand, **Angew. Chem. Int. Ed.** **2013**, *52*, 8964-8967.
- 344 *Carbodicarbenes, Carbon(0) Derivatives, Can Dimerize*, D. A. Ruiz, M. Melaimi, G. Bertrand, **Chem. Asian J.** **2013**, *8*, 2940-2942.
- 345 *Experimental and Computational Studies of Anti-Bredt Amidinium Salts*, D. Martin, N. Lassauque, F. Steinmann, G. Manuel, G. Bertrand **Chem. Eur. J.** **2013**, *19*, 14895-14901.
- 346 *β - and α -Hydride Abstraction in Gold(I)-alkyl Complexes*, G. Ung, G. Bertrand **Angew. Chem. Int. Ed.** **2013**, *52*, 11388-11391.

- 347 *Crystalline, Lewis Base-Free, Cationic Phosphoranimines (Iminophosphonium Salts)*, F. Dielmann, C. E. Moore, A. L. Rheingold, G. Bertrand, **J. Am. Chem. Soc.** **2013**, *135*, 14071-14073.
- 348 *Bottleable (Amino)(Carboxy) Radicals Derived from Cyclic (Alkyl)(Amino) Carbenes*, J. K. Mahoney, D. Martin, C. E. Moore, A. L. Rheingold, G. Bertrand, **J. Am. Chem. Soc.** **2013**, *135*(50), 18766-18769.
- 349 *Isolation of a potassium bis(1,2,3-triazol-5-ylidene)carbazolide: A stabilizing pincer ligand for reactive late transition metal complexes*, D. I. Bezuidenhout, G. Kleinhans, G. Guisado-Barrios, D. C. Liles, G. Ung, G. Bertrand, **Chem. Commun** **2014**, *50*, 2431-2433
- 350 *Isolation of Bridging and Terminal Coinage Metal–Nitrene Complexes*, F. Dielmann, D. M. Andrada, G. Frenking, G. Bertrand, **J. Am. Chem. Soc.** **2014**, *136*, 3800-3802.
- 351 *Comparative Reactivity of Different Types of Stable Cyclic and Acyclic Mono- and Di-Amino Carbenes with Simple Organic Substrates*, D. Martin, Y. Canac, V. Lavallo, G. Bertrand, **J. Am. Chem. Soc.** **2014**, *136*, 5023-5030.
- 352 *Singlet carbenes as mimics for transition metals: Synthesis of an air stable organic mixed valence compound $[M_2(C_2)^+]$; $M = \text{cyclic(alkyl)(amino)carbene}$* , L. Jin, M. Melaimi, L. Liu, G. Bertrand, **Org. Chem. Front** **2014**, *1*, 351-354.
- 353 *Isolation of Neutral Mononuclear Copper Complexes Stabilized by Two Cyclic (Alkyl)(Amino)Carbenes*, D. S. Weinberger, N. Amin SK, K. C. Mondal, M. Melaimi, G. Bertrand, A. C. Stückl, H. W. Roesky, B. Dittrich, S. Demeshko, B. Schwederski, W. Kaim, P. Jerabek, G. Frenking, **J. Am. Chem. Soc.** **2014**, *136*, 6235-6238.
- 354 *Cross-Coupling Reactions between Stable Carbenes*. C. M. Weinstein, C. D. Martin, L. Liu, G. Bertrand, **Angew. Chem. Int. Ed.** **2014**, *53*, 6550-6553.
- 355 *Two-Coordinate Fe⁰ and Co⁰ Complexes Supported by Cyclic (alkyl)(amino)carbenes*, G. Ung, J. Rittle, M. Soleilhavoup, G. Bertrand, J. C. Peters, **Angew. Chem. Int. Ed.** **2014**, *53*, 8427-8431.
- 356 *One, Two, and Three Electron Reduction of a CAAC-SbCl₃ Adduct*. R. Kretschmer, D. A. Ruiz, C. E. Moore, A. L. Rheingold, G. Bertrand, **Angew. Chem. Int. Ed.** **2014**, *53*, 8176-8179.
- 357 *Trinuclear Gold Clusters Supported by CAAC Ligands; Mimics for Gold Heterogeneous Catalysts*. L. Jin, D. S. Weinberger, M. Melaimi, C. E. Moore, A. L. Rheingold, G. Bertrand, **Angew. Chem. Int. Ed.** **2014**, *53*, 9059-9063.

- 358 *An efficient synthetic route to stable bis(carbene)borylenes $[(L_1)(L_2)BH]$* , D. A. Ruiz, M. Melaimi, G. Bertrand, **Chem. Commun** **2014**, 50, 7837-7839.
- 359 *Synthesis and Reactivity of a CAAC-Aminoborylene Adduct: A Hetero-Allene or an Organoboron Isoelectronic with Singlet Carbenes?* F. Dahcheh, D. Martin, D. W. Stephan, G. Bertrand. **Angew. Chem. Int. Ed.** **2014**, 53, 13159-13163.
- 360 *Gold-Catalyzed Hydroarylation of Alkenes with Dialkylanilines*. X. Hu, D. Martin, M. Melaimi, G. Bertrand, **J. Am. Chem. Soc.** **2014**, 136, 13594-13597.
- 361 *Coinage Metals Binding as Main Group Elements. Structure and Bonding of the Carbene Complexes $[TM(cAAC)_2]$ and $[TM(cAAC)_2]^+$ ($TM = Cu, Ag, Au$)*. P. Jerabek, H. W. Roesky, G. Bertrand, G. Frenking, **J. Am. Chem. Soc.** **2014**, 136, 17123-17135.
- 362 *Reactivity of a Stable Phosphinonitrene towards Small Molecules*. F. Dielmann, G. Bertrand **Chem. Eur. J.** **2015**, 21, 191-198.
- 363 *Oxidative Addition at a Carbene Center: Synthesis of an Iminoboryl-CAAC Adduct*. F. Dahcheh, D. W. Stephan, G. Bertrand **Chem. Eur. J.** **2015**, 21, 199-204.
- 364 *Cyclic Alkyl Amino Carbene (CAAC) Ruthenium Complexes as Remarkably Active Catalysts for Ethenolysis*. V. M. Marx, A. H. Sullivan, M. Melaimi, S. C. Virgil, B. K. Keitz, D. S. Weinberger, G. Bertrand, R. H. Grubbs, **Angew. Chem. Int. Ed.** **2015**, 54, 1919-1923.
- 365 *Mesoionic Carbene-Gold(I) Catalyzed Bis-Hydrohydrazination of Alkynes with Parent Hydrazine*. D. R. Tolentino, L. Jin, M. Melaimi, G. Bertrand, **Chem. Asian J.** **2015**, 10, 2139-2142. DOI: 10.1002/asia.201403408.
- 366 *A simple access to transition metal cyclopropenylidene complexes*. Y. D. Bidal, M. Lesieur, M. Melaimi, D. B. Cordes, A. M. Z. Slawin, G. Bertrand, C. S. J. Cazin, **Chem. Commun.** **2015**, 51, 4778 – 4781.
- 367 *Air-Stable (CAAC)CuCl and (CAAC)CuBH₄ Complexes as Catalysts for Hydrolytic Dehydrogenation of BH₃NH₃*. X. Hu, M. Soleilhavoup, M. Melaimi, J. Chu, G. Bertrand, **Angew. Chem. Int. Ed.** **2015**, 54, 6008-6011. 10.1002/anie.201500224 and 10.1002/ange.201500224
- 368 *A Crystalline Cyclic (alkyl)(amino)carbene-Tetrafluoropyridyl Radical*. S. Styra, M. Melaimi, C. E. Moore, A. L. Rheingold, T. Augenstein, F. Breher, G. Bertrand, **Chem. Eur. J.** **2015**, 21, 8441-8446. DOI: 10.1002/chem.201500740
- 369 *Air-persistent Monomeric (Amino)(carboxy) Radicals Derived from CAACs*. J. K. Mahoney, D. Martin, F. Thomas, C. E. Moore, A. L. Rheingold, G. Bertrand, **J. Am. Chem. Soc.** **2015**, 137, 7519-7525. DOI: 10.1021/jacs.5b04414
- 370 *Isolation of Bis(copper) Key Intermediates in Cu-Catalyzed Azide-Alkyne “Click Reaction”* L. Jin, D. R. Tolentino, M. Melaimi, G. Bertrand, **Sci. Adv.** **1**, e1500304 (2015). DOI 10.1126/sciadv.1500304

- 371 Isolation of a Lewis Base Stabilized Parent Phosphenium (PH₂⁺) and Related Species. L. Liu, D. A. Ruiz, F. Dahcheg, G. Bertrand, **Chem. Commun.** **2015**, 51, 12732 – 12735. DOI: 10.1039/C5CC05241F
- 372 *Copper(I) complexes bearing carbenes beyond classical NHCs: Synthesis and catalytic activity in “Click Chemistry”*. Y. D. Bidal, M. Lesieur, M. Melaimi, F. Nahra, D. B. Cordes, K. S. Athukorala Arachchige, A. M. Z. Slawin, G. Bertrand, C. S. J. Cazin, **Adv. Synth. Catal.** **2015**, 357, 3155-3161. DOI: 10.1002/adsc.201500453
- 373 *Cyclic (Amino)(aryl)carbenes (CAArCs) as Strong σ -Donating and π -Accepting Ligands for Transition Metals*. B. Rao, H. Tang, X. Zeng, L. Liu, M. Melaimi, G. Bertrand, **Angew. Chem. Int. Ed.** **2015**, 54, 14915-14919. DOI: 10.1002/anie.201507844
- 374 *The Janus Face of the X Ligand in the Copper Catalyzed Azide Alkyne Cycloaddition*, L. Jin, E. A. Romero, M. Melaimi, G. Bertrand, **J. Am. Chem. Soc.** **2015**, 137, 15696-15698. DOI:10.1021/jacs.5b11028
- 375 *Isolation of cationic and neutral (allenylidene)(carbene) and bis(allenylidene)gold Complexes*. L. Jin, M. Melaimi, A. Kostenko, M. Karni, Y. Apeloig, C. E. Moore, A. L. Rheingold, G. Bertrand, **Chem. Sci.** **2016**, 7, 150-154. DOI: 10.1039/C5SC03654B
- 376 *Isolation of Au-, Co- η^1 PCO and Cu- η^2 PCO complexes, conversion of an Ir- η^1 PCO complex into a dimetalladiphosphene, and an interaction-free PCO anion*. L. Liu, D. A. Ruiz, F. Dahcheg, G. Bertrand, R. Suter, A. M. Tondreau, H. Grützmacher, **Chem. Sci.** **2016**, 7, 2335-2341. DOI: 10.1039/C5SC04504E
- 377 *Ancillary Ligand-Free Copper Catalysed Hydrohydrazination of Terminal Alkynes with NH₂NH₂*. J. L. Peltier, R. Jazzar, M. Melaimi and G. Bertrand, **Chem. Commun.** **2016**, 52, 2733 – 2735. DOI: 10.1039/C5CC10427K
- 378 *A Ruthenium Catalyst for Olefin Metathesis Featuring an Anti-Bredt N-Heterocyclic Carbene Ligand*. D. Martin, V. M. Marx, R. H. Grubbs, G. Bertrand, **Adv. Synth. Catal.** **2016**, 358, 965 – 969. DOI:10.1002/adsc.201501140
- 379 *A Rhodium(I) Oxygen Adduct as a Selective Catalyst for One-Pot Sequential Alkyne Dimerization-Hydrothiolation Tandem Reactions*, G. Kleinhans, G. Guisado-Barrios, D. C. Liles, G. Bertrand, D. I. Bezuidenhout, **Chem. Commun.** **2016**, 52, 3504-3507. DOI: 10.1039/c6cc00029k
- 380 *Synthesis of a Carbodicyclopropenylidene: A Carbodicarbene based Solely on Carbon*, C. Prankevicus, L. Liu, G. Bertrand, D. Stephan, **Angew. Chem. Int. Ed.** **2016**, 55, 5536-5540. DOI: 10.1002/anie.201600765
- 381 *N-Heterocyclic Carbenes as Promoters for the Rearrangement of Phosphaketenes to Phosphaheteroallenes: A Case Study for OCP to OPC Constitutional Isomerism*, Z. Li, X. Chen, Z. Benkő, L. Liu, D. A. Ruiz, J. L. Peltier, G. Bertrand, C.-Y. Su, H. Grützmacher, **Angew. Chem. Int. Ed.** **2016**, 55, 6018-6022. DOI: 10.1002/anie.201600903

- 382 *A Room Temperature Stable Singlet Phosphinidene*, L. Liu, D. A. Ruiz, D. Munz, G. Bertrand, **Chem** **2016**, *1*, 147-153. DOI: 10.1016/j.chempr.2016.04.001
- 383 *Room temperature hydroamination of alkynes with anilines catalyzed by anti-Bredt di(amino)carbene gold(I) complexes*, X. Hu, , D. Martin, G. Bertrand, **New J. Chem.** **2016**, *40*, 5993-5996. DOI:10.1039/C6NJ00980H
- 384 *Generalization of the Copper to Late Transition Metal Transmetalation to Carbenes beyond N-Heterocyclic Carbenes*, Y. D. Bidal, O. Santoro, M. Melaimi, D. B. Cordes, A. M. Z. Slawin, G. Bertrand, C. S. J. Cazin. **Chem. Eur. J.** **2016**, *22*, 9404-9409. DOI:10.1002/chem.201601254
- 385 *Synthesis of Hemilabile Cyclic (Alkyl)(amino)carbenes (CAACs) and Applications in Organometallic Chemistry*, J. Chu, D. Munz, R. Jazzar, M. Melaimi, G. Bertrand, **J. Am. Chem. Soc.** **2016**, *138*, 7884-7887. <http://dx.doi.org/10.1021/jacs.6b05221>
- 386 *Singlet (Phosphino)phosphinidenes are Electrophilic*, M. M. Hansmann,, R. Jazzar, G. Bertrand, **J. Am. Chem. Soc.** **2016**, *138*, 8356-8359. DOI:10.1021/jacs.6b04232
- 387 *Catalyst-Free Dehydrocoupling of Amines, Alcohols, and Thiols with Pinacol Borane and 9-Borabicyclononane (9-BBN)*, E. A. Romero, J. L. Peltier, R. Jazzar, G. Bertrand, **Chem. Commun.** **2016**, *52*, 10563-10565. DOI: 10.1039/C6CC06096J
- 388 *NHC-CAAC Heterodimers with Three Stable Oxidation States*, D. Munz, J. Chu, M. Melaimi, G. Bertrand, **Angew. Chem. Int. Ed.** **2016**, *55*, 12886-12890. DOI: 10.1002/anie.201607537
- 389 *Nucleophilic T-shaped (LXL)Au(I)-Pincer Complexes: Protonation and Alkylation*, G. Kleinhans, M. M. Hansmann, G. Guisado-Barrios, D. C. Liles, G. Bertrand, D. I. Bezuidenhout, **J. Am. Chem. Soc.** **2016**, *138*, 15873-15876 DOI: 10.1021/jacs.6b11359, *Selected in JACS Spotlights*
- 390 *The Transition Metal-like Behavior of Main Group Elements: Ligand Exchange at a Phosphinidene*, M. M. Hansmann, G. Bertrand, **J. Am. Chem. Soc.** **2016**, *138*, 15885-15888. DOI: 10.1021/jacs.6b11496
- 391 *(CAAC)CuX-catalyzed hydroboration of terminal alkynes with pinacolborane directed by the X-ligand*, E. A. Romero, R. Jazzar, G. Bertrand, **J. Organomet. Chem.** **2017**, *829*, 11-13. DOI: 10.1016/j.jorganchem.2016.09.025
- 392 *Copper-Catalyzed Dehydrogenative Borylation of Terminal Alkynes with Pinacolborane*, E. A. Romero, R. Jazzar, G. Bertrand, **Chem. Sci.** **2017**, *8*, 165-168. DOI: 10.1039/C6SC02668K
- 393 *On the Advantage of Cyclic over Acyclic Carbenes to Access Isolable Capto-Dative C-Centered Radicals*, J. Mahoney, R. Jazzar, G. Royal, D. Martin, G. Bertrand, **Chem. Eur. J.** **2017**, *23*, 6206-6212. DOI: 10.1002/chem.201700144

- 394 *Spectroscopic Evidence for a Monomeric Copper(I) Hydride, and Crystallographic Characterization of a Monomeric Silver(I) Hydride*, E. A. Romero, P. M. Olsen, R. Jazzar, M. Soleilhavoup, M. Gembicky, G. Bertrand, **Angew. Chem. Int. Ed.** **2017**, *56*, 4024-4027. DOI: 10.1002/anie.201700858 and 10.1002/ange.201700858
- 395 *(Phosphanyl)phosphaketenes as Building Blocks for Novel Phosphorus Heterocycles*, M. M. Hansmann, D. A. Ruiz, L. Liu, R. Jazzar, G. Bertrand, **Chem. Sci.** **2017**, *8*, 3720-3725. DOI: 10.1039/C7SC00300E.
- 396 *Bicyclic (Alkyl)(amino)carbenes (BICAACs): Stable Carbenes more Ambiphilic than CAACs*, E. Tomás-Mendivil, M. M. Hansmann, C. M. Weinstein, R. Jazzar, M. Melaimi, G. Bertrand, **J. Am. Chem. Soc.** **2017**, *139*, 7753-7756. DOI: 10.1021/jacs.7b04640
- 397 *Phosphorescent 2-, 3- and 4-coordinate cyclic (alkyl)(amino)carbene (CAAC) Cu(I) complexes*, R. Hamze, R. Jazzar, M. Soleilhavoup, P. I. Djurovich, G. Bertrand, M. E. Thompson, **Chem. Commun.** **2017**, *53*, 9008-9011. DOI: 10.1039/c7cc02638b
- 398 *A Crystalline Monomeric Allenyl/Propargyl Radical*, M. M. Hansmann, M. Melaimi, G. Bertrand, **J. Am. Chem. Soc.** **2017**, *139*, 15620-15623. DOI: 10.1021/jacs.7b09622
- 399 *$L_3C_3P_3$: Tricarbontriphosphide Cage Radicals and Cations Stabilized by Cyclic (alkyl)(amino)carbenes*, Z. Li, Y. Hou, Y. Li, A. Hinz, J. R. Harmer, C.-Y. Su, G. Bertrand, H. Grützmacher **Angew. Chem. Int. Ed.** **2018**, *57*, 198-202. DOI: 10.1002/anie.201710099 and 10.1002/ange.201710099.
- 400 *Organic Mixed Valence Compounds Derived from Cyclic (Alkyl)(amino)carbenes*, M. M. Hansmann, M. Melaimi, G. Bertrand, **J. Am. Chem. Soc.** **2018**, *140*, 2206-2213. DOI: 10.1021/jacs.7b11184.
- 401 *A Modular Approach to Kekulé Diradicaloids Derived from Cyclic (Alkyl)(amino)carbenes*, M. M. Hansmann, M. Melaimi, D. Munz, G. Bertrand, **J. Am. Chem. Soc.** **2018**, *140*, 2546-2554. DOI: 10.1021/jacs.7b11183.
- 402 *Intercepting a Transient Phosphino-Arsinidene*, A. Hinz, M. M. Hansmann, G. Bertrand, J. M. Goicoechea, **Chem. Eur. J.** **2018**, *24*, 9514-9519. DOI: 10.1002/chem.201802175
- 403 *The Serendipitous Discovery of a Readily Available Redox-Bistable Molecule Derived from Cyclic(alkyl)(amino)carbenes*, J. K. Mahoney, V. Regnier, E. A. Romero, F. Molton, G. Royal, R. Jazzar, D. Martin, G. Bertrand, **Org. Chem. Front.** **2018**, *5*, 2073-2078. DOI: 10.1039/C8QO00447A
- 404 *Highly Ambiphilic Room Temperature Stable Six-Membered Cyclic (Alkyl)(amino)carbenes*. C. M. Weinstein, G. P. Junor, D. R. Tolentino, R. Jazzar, M. Melaimi, G. Bertrand. **J. Am. Chem. Soc.** **2018**, *140*, 9255-9260. DOI: 10.1021/jacs.8b05518
- 405 *A Crystalline Mono-Substituted Carbene*. R. Nakano, R. Jazzar, G. Bertrand. **Nature Chem.** **2018**, *10*, 1196-1200. DOI : 10.1038/s41557-018-0153-1

- 406 *Tandem Copper Hydride - Lewis Pair Catalyzed Reduction of Carbon Dioxide into Formate with Dihydrogen*. E. A. Romero, T. Zhao, R. Nakano, X. Hu, Y. Wu, R. Jazzar, G. Bertrand. **Nature Catal.** **2018**, *1*, 743-747. DOI: 10.1038/s41929-018-0140-3
- 407 *What are the Radical Intermediates in Oxidative N-Heterocyclic Carbene Organocatalysis?* V. Regnier, E. A. Romero, F. Molton, R. Jazzar, G. Bertrand, D. Martin, **J. Am. Chem. Soc.** **2019**, *141*, 1109-1117. DOI: 10.1021/jacs.8b11824
- 408 *Readily Available Primary Aminoboranes as Powerful Reagents for Aldimine Synthesis*. G. Junor, E. A. Romero, X. Chen, R. Jazzar, G. Bertrand, **Angew. Chem. Int. Ed.** **2019**, *58*, 2875-2878. <https://doi.org/10.1002/anie.201814081>
- 409 *Eliminating nonradiative decay in Cu(I) emitters: >99% quantum efficiency and microsecond lifetime*. R. Hamze, J. L. Peltier, D. Sylvinson, M. Jung, J. Cardenas, R. Haiges, M. Soleilhavoup, R. Jazzar, P. I. Djurovich, G. Bertrand, M. E. Thompson, **Science** **2019**, *363*, 601-606. DOI: 10.1126/science.aav2865
- 410 *Silylated Ge₉ Clusters as New Ligands for Cyclic (Alkyl)amino and Mesoionic Carbene Copper Complexes*. L. Schiegerl, M. Melaimi, D. Tolentino, W. Klein, G. Bertrand, T. Fassler, **Inorg. Chem** **2019**, *58*, 3256-3264. DOI: 10.1021/acs.inorgchem.8b03338
- 411 *“Quick-Silver” from a systematic study of highly luminescent, 2-coordinate, d10 coinage metal complexes*. R. Hamze, S. Shi, S. C. Kapper, D. S. M. Ravinson, L. Estergreen, M.-C. Jung, A. C. Tadler, R. Haiges, P. I. Djurovich, J. L. Peltier, R. Jazzar, G. Bertrand, S. E. Bradforth, M. E. Thompson, **J. Am. Chem. Soc.** **2019**, *141*, 8616-8626. DOI: 10.1021/jacs.9b03657
- 412 *Reductive Elimination at Carbon under Steric Control*. D. R. Tolentino, S. E. Neale, C. J. Isaac, S. A. Macgregor, M. K. Whittlesey, R. Jazzar, G. Bertrand, **J. Am. Chem. Soc.** **2019**, *141*, 9823-9826. DOI: 10.1021/jacs.9b04957
- 413 *The Debut of Chiral Cyclic (Alkyl)(amino)carbenes (CAACs) in Enantioselective Catalysis*. D. Pichon, M. Soleilhavoup, J. Morvan, G. P. Junor, T. Vives, C. Crévisy, V. Lavallo, J. M. Campagne, M. Mauduit, R. Jazzar, G. Bertrand. **Chem. Sci.** **2019**, *10*, 7807-7811. DOI: 10.1039/C9SC02810B
- 414 *Mesoionic carbene (MIC) catalyzed H/D exchange at formyl groups*. W. Liu, L. L. Zhao, M. Melaimi, L. Cao, X. Xu, J. Bouffard, G. Bertrand, X. Yan. **Chem.** **2019**, *5*, 2484-2494. DOI: 10.1016/j.chempr.2019.08.011
- 415 *Understanding the Activity and Enantioselectivity of Acetyl-Protected Aminoethyl Quinoline ligands in Palladium-Catalyzed β -C(sp³)-H Bond Arylation reactions*. E. A. Romero, G. Chen, M. Gembicky, R. Jazzar, J.-Q. Yu*, G. Bertrand, **J. Am. Chem. Soc.** **2019**, *141*, 16726-16733. DOI: 10.1021/jacs.9b06746
- 416 *Tuning electronic structure through halide modulation of mesoionic carbene cobalt complexes*. A. J. Mantanona, D. R. Tolentino, K. S. Cay, M. Gembicky, R. Jazzar, G. Bertrand, J. D. Rinehart **Dalton Trans.** **2020**, *49*, 2426-2430. DOI: 10.1039/C9DT04624K

- 417 Influence of Carbene and Phosphine Ligands on the Catalytic Activity of Gold Complexes in the Hydroamination and Hydrohydrazination of Alkynes. S. Yazdani, G. P. Junor, J. L. Peltier, M. Gembicky, R. Jazzar, D. B. Grotjahn, G. Bertrand, **ACS Catal.** **2020**, *10*, 5190-5201. DOI: 10.1021/acscatal.0c01352
- 418 The influence of C(sp³)H-Selenium Interactions on the ⁷⁷Se NMR Quantification of the π -Accepting Properties of Carbenes. G. P. Junor, J. Lorkowski, C. M. Weinstein, R. Jazzar, C. Pietraszuk, G. Bertrand, **Angew. Chem. Int. Ed.** **2020**, *59*, 22028-22033. DOI: 10.1002/anie.202010744
- 419 Absolute Templating of M(111) Cluster Surrogates by Galvanic Exchange. J. L. Peltier, M. Soleilhavoup, D. Martin, R. Jazzar, G. Bertrand, **J. Am. Chem. Soc.** **2020**, *142*, 16479-16485. DOI: doi.org/10.1021/jacs.0c07990
- 420 Realizing Metal-Free Carbene-Catalyzed Carbonylation Reactions with CO. J. L. Peltier, E. Tomas-Mendivil, D. R. Tolentino, M. M. Hansmann, R. Jazzar, G. Bertrand, **J. Am. Chem. Soc.** **2020**, *142*, 18336-18340. DOI: 10.1021/jacs.0c09938.
- 421 Optically Pure C₁-Symmetric Cyclic(alkyl)(amino)carbene Ruthenium-Complexes for Asymmetric Olefin Metathesis. J. Morvan, F. Vermersch, Z. Zhang, L. Falivene, T. Vives, V. Dorcet, T. Roisnel, C. Crévisy, L. Cavallo, N. Vanthuyne, G. Bertrand, R. Jazzar, M. Mauduit, **J. Am. Chem. Soc.** **2020**, *142*, 19895-19901. <http://dx.doi.org/10.1021/jacs.0c10705>
- 422 Cyclic (Alkyl)(Amino)Carbene (CAAC) Gold(I) Complexes as Chemotherapeutic Agents. M. T. Proetto, K. Alexander, M. Melaimi, G. Bertrand, N. C. Gianneschi. **Chem. Eur. J.** **2021**, *27*, 3772-3778. <http://dx.doi.org/10.1002/chem.202004317>.
- 423 Mesoionic Carbene-Breslow Intermediates as Super Electron Donors: Application to the Metal-Free Arylacylation of Alkenes. W. Liu, A. Vianna, Z. Zhang, S. Huang, L. Huang, M. Melaimi, G. Bertrand, X. Yan. **Chem. Catalysis** **2021**, *1*, 196-206. <https://doi.org/10.1016/j.checat.2021.03.004>
- 424 Gao, Y.; Yazdani, S.; Kendric, A.; Junor, G. P.; Kang, T. Grotjahn, D. B.; Bertrand, G.; Jazzar, R.; Engle, K. M. Cyclic(Alkyl)(Amino)Carbene Ligands Enable Cu-Catalyzed Markovnikov Protoboration and Protosilylation of Terminal Alkynes: A Versatile Portal to Functionalized Alkenes. **Angew. Chem. Int. Ed.** **2021**, *60*, 19871-19878. <https://doi.org/10.1002/anie.202106107>
- 425 Vermersch, F.; Yazdani, S.; Junor, G. P.; Grotjahn, D. B.; Jazzar, R.; Bertrand, G. Stable Singlet Carbenes as Organic Superbases. **Angew. Chem. Int. Ed.** **2021**, *60*, 27253-27257 <https://doi.org/10.1002/anie.202111588>
- 426 Vermersch, F.; Oliveira, L.; Hunter, J.; Soleilhavoup, M.; Jazzar, R.; Bertrand, G. Cyclic (Alkyl)(amino)carbenes: Synthesis of Iminium Precursors and Structural Properties. **J. Org. Chem.** **2022**, *87*, 3511-3518. DOI: 10.1021/acs.joc.1c03075

- 427 D. Astruc, G. Bertrand, M. Eddaoudi, Y. Han, K.-W. Huang, J. Lercher, C. Santini, K. Takanebe, M. Taoufik, L. Cavallo, A Career in Catalysis: Jean-Marie M. Basset. **ACS catal.** **2022**, *12*, 4961-4977. DOI: <https://doi.org/10.1021/acscatal.2c00588>
- 428 Y. Gao, N. Kim, S. D. Mendoza, S. Yazdani, A. Faria-Vieira, M. Liu, A. Kendrick IV, D. B. Grotjahn, G. Bertrand, R. Jazzar, K. M. Engle. (CAAC)Copper Catalysis Enables Regioselective Three-Component Carboboration of Terminal Alkynes. **ACS catal.** **2022**, *12*, 7243-7247. DOI: <https://doi.org/10.1021/acscatal.2c00614>
- 429 M. R. Serrato, M. Melaimi, G. Bertrand. Cyclic (amino)(barrelene)carbenes: An original family of CAACs through a Novel Synthetic Pathway. **Chem. Commun.** **2022**, *58*, 7519-7521. DOI: 10.1039/D2CC02565E
- 430 S. Yazdani, C. J. Breyer, P. Kumari, A. L. Rheingold, R. Jazzar, G. Bertrand, D. B. Grotjahn. Six-coordinate Ruthenium Water Oxidation Catalysts Bearing Equatorial Polypyridinedicarboxylate and Axial Phosphine Ligands. **Polyhedron** **2022**, *228*, 116163. DOI: <https://doi.org/10.1016/j.poly.2022.116163>.
- 431 Z. Zhang, S. Huang, C.-Y. Li, L.-L. Zhao, W. Liu, M. Melaimi, G. Bertrand, X. Yan. The Triplet State of Deprotonated Mesoionic Carbene Breslow Intermediates is Thermally Accessible: Distal Difunctionalization of Aldehydes. **Chem Catal.** **2022**, *2*, 3517-3527. DOI: <https://doi.org/10.1016/j.checat.2022.09.047>. (Highlighted in **Chem Catal.** **2022**, *2*, 3275-3277).
- 432 J. Morvan, F. Vermersch, J. Lorkowski, J. Talcik, T. Vives, T. Roisnel, C. Crévisy, N. Vanthuyne, G. Bertrand, R. Jazzar, M. Mauduit. Cyclic(alkyl)(amino)carbene Ruthenium Complexes for Z-Stereoselective (Asymmetric) Olefin Metathesis. **Catal. Sci. Technol.** **2023**, *13*, 381-388. DOI: 10.1039/D2CY01795D.
- 433 J. L. Peltier, M. R. Serrato, V. Thery, J. Pecaut, E. Tomás-Mendivil, G. Bertrand, R. Jazzar, D. Martin. An air-stable radical with a redox-chameleonic amide. **Chem. Commun.** **2023**, *59*, 595-598. DOI: 10.1039/D2CC05404C
- 434 Y. K. Loh, M. Melaimi, D. Munz, G. Bertrand. An Air-Stable “Masked” Bis(imino)carbene: A Carbon-Based Dual Ambiphile. **J. Am. Chem. Soc.** **2023**, *145*, 2064-2069. DOI: 10.1021/jacs.2c12847. (Highlighted in Chemistry Views **2023**, January 19).
- 435 F. F. Mulks, M. Melaimi, X. Yan, M.-H. Baik, G. Bertrand. How to Enhance the Efficiency of Breslow Intermediates for SET Catalysis. **J. Org. Chem.** **2023**, *88*, 2535-2542. DOI: <https://doi.org/10.1021/acs.joc.2c02978>
- 436 J. Morvan, F. Vermersch, Z. Zhang, T. Vives, T. Roisnel, C. Crévisy, L. Falivene, L. Cavallo, N. Vanthuyne, G. Bertrand, R. Jazzar, M. Mauduit. The Ambivalent Role of Rotamers in Cyclic(alkyl)(amino)carbene Ruthenium Complexes for Enantioselective Ring-Opening Cross-Metathesis. **Organometallics.** **2023**, *42*, 495-504. DOI: <https://doi.org/10.1021/acs.organomet.3c00054>

- 437 J. Lorkowski, M. Serrato, M. Gembicki, M. Mauduit, G. Bertrand, R. Jazzar. A Simple Access to Cyclic (Alkyl)(amino)carbenes Copper (I) Complexes. **Eur. J. Inorg. Chem.** **2023**, e202300074. doi.org/10.1002/ejic.202300074 (special Issue)
- 438 M. Haimeri, C. Schwarzmaier, A. Y. Timoshkin, M. Melaimi, G. Bertrand, M. Scheer. Reactivity of Yellow Arsenic towards Cyclic Alkyl Amino Carbenes (CAACs). **Chem. Eur. J.** **2023**, e202300280 <http://dx.doi.org/10.1002/chem.202300280>
- 439 A. Del Vecchio, J. Talcik, S. Colombel-Rouen, J. Lorkowski, M. R. Serrato, T. Roisnel, N. Vanthuyne, G. Bertrand, R. Jazzar, M. Mauduit. Highly Robust and Efficient Blechert-type Cyclic(alkyl)(amino)carbene Ruthenium Complexes for Olefin Metathesis. **ACS catal.** **2023**, 13, 6195-6202. <https://doi.org/10.1021/acscatal.3c01208>
- 440 C. Liu, Z. Zhang, L.-L. Zhao, G. Bertrand, X. Yan. Mesoionic Carbene-Catalyzed Formyl Alkylation of Aldehydes. **Angew. Chem. Int. Ed.** **2023**, e202303478. DOI: 10.1002/anie.202303478 and 10.1002/ange.202303478.
- 441 J. Lorkowski, D. Bouetard, P. Yorkgitis, T. Roisnel, N. Vanthuyne, D. Munz, L. Favereau, G. Bertrand, M. Mauduit, R. Jazzar. Circularly Polarized Luminescence from Cyclic(Alkyl)(Amino) Carbene Derived Propellers. **Angew. Chem. Int. Ed.** **2023**, e202305404. DOI: 10.1002/anie.202305404 and 10.1002/ange.202305404.
- 442 L. Hu, G. Meng, X. Chen, J. S Yoon, J. R. Chan, N. Chekshin, D. A. Strassfeld, T. Sheng, Z. Zhuang, R. Jazzar, G. Bertrand, K. N. Houk, J.-Q. Yu. Enhancing Substrate-Metal Catalyst Affinity via Hydrogen Bonding: Pd(II)-Catalyzed β -C(sp³)-H Halogenation of Free Carboxylic Acids **J. Am. Chem. Soc.** **2023**, 145, 16297-16304. DOI: <https://doi.org/10.1021/jacs.3c04223>
- 443 Y. K. Loh, M. Melaimi, M. Gembicky, D. Munz, G. Bertrand. A Crystalline Doubly Oxidized Carbene. **Nature** **2023**, 623, 66-70. DOI: 10.1038/s41586-023-06539-x
- 444 Y. K. Loh, L. Gojiashvili, M. Melaimi, M. Gembicky, D. Munz, G. Bertrand. Isolation of a pentadienyl-type radical featuring a central secondary carbon. **Nature Synth.** **2024**, 3, 727-731. DOI: 10.1038/s44160-024-00516-6.
- 445 F. Vermersch, V. T. Wang, M. Addellaoui, R. Jazzar, G. Bertrand. Ambiphilicity of Ring-Expanded *N*-Heterocyclic Carbenes. **Chem. Sci.** **2024**, 15, 3707-3710. DOI: 10.1039/D3SC04543A.
- 446 M. Abdellaoui, K. Oppel, A. Vianna, M. Soleilhavoup, X. Yan, M. Melaimi, G. Bertrand. 1*H*-1,2,3-Triazol-5-ylidenes as catalytic organic single-electron reductants. **J. Am. Chem. Soc.** **2024**, 146, 2933–2938. <https://doi.org/10.1021/jacs.3c14360>.
- 447 V. Docekal, M. Melaimi, S. Petrzela, J. Vesely, X. Yan, G. Bertrand. Synthesis of Enantiopure 1,2,3-Triazolylidene-Type Mesoionic Carbenes (MICs) Conjugate Acids

- Featuring a Rigid Bicyclic Scaffold. **Org. Chem. Front.** **2024**, *11*, 2178-2181. DOI: 10.1039/d4qo00269e
- 448 J. Talcik, M. R. Serrato, A. Del Vecchio, S. Colombel-Rouen, J. Morvan, T. Roisnel, R. Jazzar, M. Melaimi, G. Bertrand, M. Mauduit. Cyclic (amino)(barrelene)carbene Ru-complexes: synthesis and reactivity in olefin metathesis. **Dalton Trans.** **2024**, *53*, 5346 – 5350. DOI: 10.1039/d4dt00102h
- 449 J. Lorkowski, P. Yorkgitis, M. R. Serrato, M. Gembicky, C. Pietraszuk, G. Bertrand, R. Jazzar. Genuine Carbene Versus Carbene-Like Reactivity. **Angew. Chem. Int. Ed.** **2024**, e202401020. DOI: 10.1002/anie.202401020
- 450 J. S. Yoon, M. Abdellaoui, M. Gembicky, G. Bertrand. A Carbene-Stabilized Diphosphorus: A Triple-Bonded Diphosphorus (P≡P) and a Bis(phosphinidene) (P-P) Transfer Agent. **Chem. Sci.** **2024**, *15*, 15713-15716. DOI: 10.1039/D4SC05091F

REVIEW ARTICLES AND BOOK CHAPTERS

- 1 *The silicon-carbon double bond. A survey of recent experimental and theoretical results.* G. Bertrand, G. Trinquier, P. Mazerolles, **J. Organomet. Chem. Libr.** **1981**, *12*, 1-52.
- 2 *Unsaturated reactive intermediates in organosilicon chemistry. Recent results.* W.P. Weber, S.A. Kazoura, G. Manuel, G. Bertrand, “**Organosilicon and Bio-organosilicon Chemistry**”, Ellis Horwood Limited, Chichester, **1985**, 99-106.
- 3 *Photochemical and thermal rearrangement of heavier main group element azides.* G. Bertrand, J. P. Majoral, A. Baceiredo, **Acc. Chem. Res.** **1986**, *19*, 17-23.
- 4 *$\lambda^3\sigma^2$ -phosphor-carbene.* H. Heydt, M. Regitz, G. Bertrand, **Methoden der organischen chemie (Houben-Weyl)**, **1989**, Band E 19b, Teil 2, p 1822-1900.
- 5 *λ^5 -phosphaalkynes (Alkylidynephosphoranes).* G. Bertrand, “**Multiple bonds and low coordination in phosphorus chemistry**”, Thieme-Verlag-Stuttgart, Eds M. Regitz, O.J. Scherer, **1990**, p 443-454.
- 6 *The bis(diisopropylamino)phosphino group: a wonderful tool for the stabilization and NMR characterization of highly reactive species.* R. Reed, G. Bertrand, **Phosphorus-31 NMR Spectral Properties in Compound Characterization and Structural Analysis**, Eds L.D. Quin, J.G. Verkade, VCH Publishers, New York, **1994**, p. 189-200.
- 7 *Nitrile Imines: From matrix characterization to stable compounds.* G. Bertrand, C. Wentrup, **Angew. Chem. Int. Ed. Engl.** **1994**, *33*, 527-545.
- 8 *λ^3 -phosphinocarbenes λ^5 -phosphaacetylenes.* G. Bertrand, R. Reed, **Coord. Chem. Rev.** **1994**, *137*, 323-355.

- 9 *From unstable diazoalkenes to stable pseudo-diazoalkenes: creating useful synthons from reactive intermediates.* D. Bourissou, G. Bertrand, **C. R. Acad. Sc. Paris** **1996**, 322, 489-506.
- 10 *Phosphorus-and other group-15-substituted carbenes or equivalents.* G. Bertrand, R. Reau, **Methoden der organischen chemie (Houben-Weyl)**, **1996**, E 17a, 794-810.
- 11 *Bis(stannyldiazo derivatives and their structural isomers: powerful CN_2^{2-} transfer agents.* R. Reau, G. Bertrand, **Reviews on Heteroatom Chem.** **1996**, 14, 137-163.
- 12 *Trigonal planar phosphorus cations.* O. Guerret, G. Bertrand, **Acc. Chem. Res.** **1997**, 30, 486-493.
- 13 *Trialkylsilyldiazomethane derivatives: wonderful chemical building blocks.* G. Bertrand, **Organosilicon Chemistry III. From Molecules to Materials.** Ed.: N. Auner and J. Weis, VCH Verlag, Weinheim, **1998**, pp. 223-236.
- 14 *Ylidic four π electron four-membered λ^5 -phosphorus heterocycles : electronical isomers of heterocyclobutadienes.* G. Bertrand, **Angew. Chem. Int. Ed.** **1998**, 37, 270-281.
- 15 *Phosphinocarbenes: the only stable carbenes exhibiting electron-deficient character.* O. Guerret, G. Bertrand, **Main Group Chemistry News** **1998**, 6, 12-16.
- 16 *The quest for diphosphirenium and diphosphirenylium salts. Diheteroatom-containing cyclopropenium analogues.* D. Bourissou, G. Bertrand, **Acc. Chem. Res.** **1999**, 32, 561-570.
- 17 *The chemistry of phosphinocarbenes.* D. Bourissou, G. Bertrand, **Advances in Organomet. Chem.** **1999**, 44, 175-219.
- 18 *Stable carbenes.* D. Bourissou, O. Guerret, F. Gabbai, G. Bertrand, **Chem. Rev.** **2000**, 100, 39-91.
- 19 *Diphosphorus containing unsaturated three-membered rings: comparison of carbon, nitrogen and phosphorus chemistry.* D. Bourissou, G. Bertrand. **Topics in Current Chemistry** **2002**, 220, 1-25.
- 20 *Stable version of transient singlet carbenes.* G. Bertrand, **Carbene chemistry from fleeting intermediates to powerful reagents.** Marcel Dekker, New York, Ed. G. Bertrand, **2002**, pp 177-203.
- 21 *Stable Singlet Carbenes.* G. Bertrand. **Contemporary Reactive Intermediate Chemistry**, Moss, R. (Ed.), Wiley, **2003**, pp 329-374.
- 22 *Stable Non-N-Heterocyclic Carbenes (Non-NHC): Recent Progress.* Y. Canac, M. Soleilhavoup, S. Conejero, G. Bertrand, **J. Organomet. Chem.** **2004**, 689, 3857-3865.

- 23 *Bis(trimethylsilyl)mercury: a Powerful Reagent for the Synthesis of Amino Carbenes*. M. Otto, V. Rudzevich, V. D. Romanenko, G. Bertrand, **In Organosilicon Chemistry – From Molecules to Materials**, Weiss, N.; Auner, N. (Eds), VCH Verlag, 2005, vol 6.
- 24 *Stable Singlet Diradicals Based on Boron and Phosphorus*. A. Rodriguez, C. Prasang, V. Gandon, J. B. Bourg, G. Bertrand, **Modern Aspects of Main Group Chemistry, ACS Symposium Series No. 917**, Kemp, Richard A.; Lattman, Michael, eds., American Chemical Society, Washington, DC, 2006, pp 81-93.
- 25 *Let's Play with Valence Isomers: The Influence of Different Main Group Elements on Their Relative Stability*. M. Soleilhavoup, G. Bertrand, **Bull. Chem. Soc. Jpn.** **2007**, *80*, 1241-1252 (Commemorative Account).
- 26 *Stable Cyclic Carbenes and Related Species beyond Diaminocarbenes*, M. Melaimi, M. Soleilhavoup, G. Bertrand, **Angew. Chem. Int. Ed.** **2010**, *49*, 8810-8849
- 27 *Stable Singlet Carbenes as mimics for Transition Metal Centers*, D. Martin, M. Soleilhavoup, G. Bertrand, **Chem. Sci.** **2011**, *2*, 389-399
- 28 *A Brief Survey of our Contribution to Stable Carbene Chemistry*, D. Martin, M. Melaimi, M. Soleilhavoup, G. Bertrand, **Organometallics** **2011**, *30*, 5304-5313.
- 29 *Les Carbenes Stables*, M. Soleilhavoup, M. Melaimi, D. Martin, G. Bertrand, **Actualite Chimique** **2013**, *370*, 20-27.
- 30 *Carbene-Stabilized Main Group Radicals and Radical Ions*, C. D. Martin, M. Soleilhavoup, G. Bertrand, **Chem. Sci.** **2013**, *4*, 3020 – 3030.
- 31 *Cyclic (Alkyl)(Amino)Carbenes (CAACs): Stable Carbenes on the Rise*, M. Soleilhavoup, G. Bertrand, **Acc. Chem. Res.** **2015**, *48*, 256-266. DOI: 10.1021/ar5003494
- 32 *Cyclic (Alkyl)(Amino)Carbenes (CAACs): Recent developments*, M. Melaimi, R. Jazzar, M. Soleilhavoup, G. Bertrand, **Angew. Chem. Int. Ed.** **2017**, *56*, 10046-10068. DOI: 10.1002/anie.201702148
- 33 *Borylenes: an Emerging Class of Compounds*, M. Soleilhavoup, G. Bertrand, **Angew. Chem. Int. Ed.** **2017**, *56*, 10282-10292. DOI: 10.1002/anie.201705153
- 34 *1H-1,2,3-Triazol-5-ylidenes: Readily Available Mesoionic Carbenes*, G. Guisado-Barrios, M. Soleilhavoup, G. Bertrand, **Acc. Chem. Res.** **2018**, *51*, 3236-3244. DOI: 10.1021/acs.accounts.8b00480
- 35 *Stable Abnormal N-Heterocyclic Carbenes and their Applications*, S. C. Sau, P. K. Hota, S. K. Mandal, M. Soleilhavoup, G. Bertrand, **Chem. Soc. Rev.** **2020**, *49*, 1233-1252. DOI: 10.1039/c9cs00866G

- 36 *Cyclic (Alkyl)- and (Aryl)-(amino)carbene Coinage Metal Complexes and Their Applications*, R. Jazzar, M. Soleilhavoup, G. Bertrand, **Chem. Rev.** **2020**, *120*, 4141-4168. DOI: 10.1021/acs.chemrev.0c00043
- 37 *Stable Carbenes, Nitrenes, Phosphinidenes, and Borylenes: Past and Future*. M. Soleilhavoup, G. Bertrand, **Chem.** **2020**, *6*, 1275-1282. DOI: <https://doi.org/10.1016/j.chempr.2020.04.015>
- 38 *Cyclic (Alkyl)(amino)carbenes (CAACs) in Ruthenium Olefin Metathesis*. J. Morvan, M. Mauduit, G. Bertrand, R. Jazzar. **ACS Catal.** **2021**, *11*, 1714-1748. DOI: 10.1021/acscatal.0c05508
- 39 *Singly and Doubly Oxidized Carbenes and their Applications in Catalysis*. A. K. Day, M. Abdellaoui, M. Soleilhavoup, G. Bertrand. **Chem Catal.** **2025**, *5*, 101159. <https://doi.org/10.1016/j.checat.2024.101159>

BOOK

1. Carbene chemistry : from fleeting intermediates to powerful reagents
Marcel Dekker, New York
Editor, G. Bertrand, 320 pages, ISBN : 0-8247-0831-8 (2003)

PARTICIPATION TO GOVERNMENTAL REPORTS

- 1 Evaluation de la Recherche Publique dans les Etablissements Publics Français
La documentation Française, Paris
Participation au rapport du CNER, 207 pages (2003), ISBN : 2-11-005319-4
- 2 Recherche sur l'Animal et la Santé de l'Homme
La documentation Française, Paris
Participation au rapport du CNER, 302 pages (2003), ISBN : 2-11-005317-8
- 3 Une communauté de Recherche, le Pole de Grenoble
La documentation Française, Paris
Participation au rapport du CNER, 135 pages (2003), ISBN : 2-11-005354-2

PATENTS

- 1 Procédé de préparation de (acyloxy-2 alkylthio-1 propyl) phosphorylcholine
G. BERTRAND, B. GARRIGUES, J.P. MAFFRAND
Brevet français n° 2541283 (1984)

- 2 Nouveaux dérivés trialkoxysilylés du propanol ; leur procédé de préparation et leur utilisation en tant qu'intermédiaires de synthèse
G. BERTRAND, B. GARRIGUES, J.P. MAFFRAND
Brevet français n° 2548669 (1985)

- 3 Procédé de préparation de P-mono ou dialkyles ou aryles N-dichlorophosphoryl mono-phosphazènes
G. BERTRAND, J.P. MAJORAL, P. POTIN, H. ROLLAND
Brevet français n° 2682 387 (1993)

- 4 Procédé de préparation de polyalkyl ou arylchlorophosphazènes
G. BERTRAND, J.P. MAJORAL, P. POTIN, H. ROLLAND
Brevet français n° 2682 391 (1993)

- 5 Mono ou poly allylchlorophosphazènes. Procédé de préparation de ces composés
G. BERTRAND, J.P. MAJORAL, P. POTIN, H. ROLLAND
Brevet français n° 2682 386 (1993)

- 6 Procédé de préparation des N-(meth)acryloyl carbamates
G. BERTRAND, D. GUYOT, P. GAUTHIER J.P. SENET
Brevet français n° 269 5639 (1994)

- 7 Procédé de préparation d'isocyanates d'acyle
G. BERTRAND, D. GUYOT, J.P. SENET
Brevet français n° 2 739 619 (7/11/97)
Brevet européen n° 0 767 166 (09/04/97)
Brevet US n° 08/715 725 (31/03/98)
Brevet canadien n° 2 186 991
Brevet japonais n° 284 674/1996
Brevet hongrois n° P 96 02738 (28/12/1998)

- 8 Nouveaux composés possédant un élément du groupe 13 lié à un ligand tridentate dianionique, leur procédé de préparation et leur application comme catalyseur de polymérisation
G. BERTRAND, J.B. CAZAUX, N. EMIG, R. REAU
Demande européenne n° 964 00938.5 (2 mai 1996)
Demande internationale : PCT/FR/97/00773 (30 avril 1997), publiée sous le n°: WO97/42197 (13 novembre 1997), US (PCT) : 6281154 (28 août 2001), validée dans les pays suivants : Europe, Fédération de Russie, Hongrie, Pologne, République Tchèque, USA,

Canada, Brésil, Japon, Australie, Corée du Sud, Chine, Nouvelle Zélande, Israël, Singapour, Mexique, Norvège

Levée d'option de licence par la Société Ipsen Beaufour le 7 juillet 1998

- 9 Nouveaux ylures de phosphore, leur préparation et leurs utilisations notamment en tant que bases fortes faiblement nucléophiles
G. BERTRAND, D. BIGG, J.B. CAZAUX, S. GOUMRI, O. GUERRET
Demande européenne n° 97401142.1 (26 mai 1997)
Demande internationale : PCT/FR 98/01048 (26 mai 1998), publiée sous le n° WO98/54229 (3 décembre 1998), US (PCT) : 6222032 (24 avril 2001), validée dans les pays suivants : Canada, Europe, Fédération de Russie, Japon, Norvège

- 10 Nouveaux composés possédant un élément du groupe 11, 12 ou 14 et un ligand tridentate, leur procédé de préparation et leur application notamment comme catalyseurs de polymérisation
G. BERTRAND, J. B. CAZAUX, J.-L. FAURE, H. NGUYEN, R. REAU
Demande européenne n° 97401621.4 (8 juillet 1997)
Demande internationale : PCT/FR98/01433 (6 juillet 1998), publiée sous le n° WO99/02536 (21 janvier 1999), validée dans les pays suivants : Argentine, Inde, Thaïlande, Taïwan, Afrique du Sud, Canada, USA, Europe, Fédération de Russie, Norvège

- 11 Complexes organométalliques comprenant des carbènes hétérocycliques
G. BERTRAND, L. STELZIG, O. GUERRET, C. BURON, H. GORNITZKA, P. BURATIN
Demande française n° 9806558 (20 mai 1998)
Demande internationale : PCT/FR01128 (11 mai 1999), publiée sous le n° WO99/60004 (25 novembre 1999), validée dans les pays suivants : Brésil, Canada, Chine, République Tchèque, Japon, République de Corée, Mexique, Pologne, Roumanie, Fédération de Russie, Singapour, Slovaquie, Ukraine, Etats-Unis, Vietnam, Europe

- 12 Nouveaux composés possédant un lanthanide et un ligand tridentate, leur procédé de préparation et leur application notamment comme catalyseurs de polymérisation
A. DUMITRESCU, H. GORNITZKA, B. MARTIN-VACA, D. BOURISSOU, G. BERTRAND, J.B. CAZAUX
Demande européenne n° 99 401 584.0 (25 juin 1999)
Demande internationale : PCT/FR00/01752 (23 juin 2000), publiée sous le n° WO01/00630 (4 janvier 2001), validée dans les pays suivants : Canada, USA, Japon, Norvège

- 13 Nouveaux composés possédant un élément du groupe 11 ou 12 et un ligand tridentate, leur procédé de préparation et leur application notamment comme catalyseurs de polymérisation
H. NGUYEN, H. GORNITZKA, B. MARTIN-VACA, D. BOURISSOU, G. BERTRAND, J.B. CAZAUX
Demande européenne n° 99 401 585.7 (25 juin 1999)
Demande internationale : PCT/FR00/01753 (23 juin 2000), publiée sous le n° WO01/00628 (4 janvier 2001), validée dans les pays suivants : Canada, USA, Japon, Norvège

- 14 Utilisation de stannylènes et de germylènes comme catalyseurs de polymérisation d'hétérocycles
G. BERTRAND, D. BOURISSOU, J.B. CAZAUX, A. DUMITRESCU, H. GORNITZKA, B. MARTIN-VACA
Demande européenne n° 00401309.0 (15 mai 2000)
Demande internationale : PCT/FR01/01405 (10 mai 2001)

- 15 Utilisation de dérivés du zinc comme catalyseurs de polymérisation d'esters cycliques
G. BERTRAND, D. BOURISSOU, J.B. CAZAUX, A. DUMITRESCU, H. GORNITZKA, B. MARTIN-VACA
Demande européenne n° 1 400 926.0 (10 avril 2001)

- 16 Procédé de préparation de nouveaux dérivés N-substitués de 5-amino-phénylpyrazoles, nouveaux dérivés N-substitués de 5-amino-phénylpyrazole et leur utilisation comme agents parasitocides et/ou insecticides
G. BERTRAND, V. ROMANENKO, G. DERRIEU, B. RAYNIER
Demande française n° 01 17018 (18 décembre 2001)

- 17 Environment friendly reagents and process for halogenoalkoxysulfinylation of organic compounds
G. BERTRAND, V. ROMANENKO, B. RAYNIER, G. DERRIEU
Demande de brevet européen n° 02 290 184.7 (28 janvier 2002)

- 18 Stable cyclic (alkyl)(amino)carbenes as ligands for transition metal catalysts
G. BERTRAND, V. LAVALLO, Y. CANAC
US Patent Application Serial No 11/449,568 (June 7, 2006)
WO 2006/138166 A2 (December 28, 2006)
US patent No 7,312,331, Issued December 25, 2007.

- 19 Intramolecular Hydro-iminiumation and Hydro-amidiniumation of akenes
G. BERTRAND, J. B. BOURG, R. JAZZAR, Y. CANAC, B. DONNADIEU, R. D. DEWHURST
U. C. Case No 2007-390-1
US Provisional Application Serial No 60/903,145 (Filed February 23, 2007)

- 20 Synthesis of stable cyclopropenylidenes
G. BERTRAND, Y. CANAC, V. LAVALLO, B. DONNADIEU,
UC parent case No 2007-203-1
U. C. Case No 2007-203-2
US Provisional application Serial No 60/911,609 (Filed April 13, 2007)
US Patent Application No 12/101,100 (April 10, 2008)
U.S. Pat. Appl. Publ. (2008), US 20080269525 A1 20081030

- 21 Bent allenes and their metal complexes
G. BERTRAND, V. LAVALLO, C. A. DYKER
U. C. Case No 2008-371-1 (Filed January 2008)
PCT Int. Appl. (2009), WO 2009089483 A1 20090716.

- 22 Gold Catalyzed Hydroamination of Alkynes and Allenes with NH₃
G. BERTRAND, V. LAVALLO, G. D. FREY, B. DONNADIEU, M. SOLEILHAVOUP
U. C. Case No 2008-598-1 (Filed May 9, 2008)

US Provisional application Serial No 61/051,826, Filed May 9, 2008
PCT Int. Appl. (2009), WO 2009137810 A2 20091112.

- 23 ISOLATION OF A C5-DEPROTONATED IMIDAZOLIUM, A CRYSTALLINE
 ABNORMAL N-HETEROCYCLIC CARBENE
 G. BERTRAND, E. ALDECO-PEREZ, B. DONNADIEU
U. C. Case No 2010-062-1
US Provisional application Serial No 61/240,527, Filed September 8, 2009
US National Phase Patent Application No 12/991,588
International Application No PCT/US2009/043369
US application serial No 13/272,969 filed on October 13, 2011.

- 24 Preparation of stable 1*H*-1,2,3-Triazol-5-ylidenes: New Stable Mesoionic Carbenes
 G. BERTRAND, G. GUISSADO-BARRIOS, J. BOUFFARD, B. DONNADIEU
U. C. Case No 2010-703-1
US Provisional application Serial No 61/328,415, Filed April 27, 2010
PCT Application filed on April 25, 2011
PCT Int. Appl. (2011), WO 2011139704 A2 20111110

- 25 Protonolysis of Ruthenium-Carbene Bonds and Applications in Olefin Metathesis
 B. K. KEITZ, R. H. GRUBBS, J. BOUFFARD, G. BERTRAND
U. C. Case No 2011-691-1

- 26 Neutral Tricoordinate Organoboron Derivatives Isoelectronic with Amines and Phosphines
 G. BERTRAND, R. KINJO, B. DONNADIEU
U. C. Case No 2011-850, US 20130190510 A1 20130725.

- 27 Cyclic alkyl amino carbene (CAAC) ruthenium complexes as improved catalysts for ethenolysis
 reactions.
 V. M. MARX, M. MELAIMI, S. C. VIRGIL, B. K. KEITZ, R. H. GRUBBS, G. BERTRAND
U.S. Provisional Patent Application No: 61/810795 filed on April 11, 2014
U.S. Pat. Appl. Publ. (2014), US 20140309433 A1 20141016.

- 28 Reactions In The Presence Of Ruthenium Complexes.
 V. M. MARX, R. H. GRUBBS, S. C. VIRGIL, B. K. KEITZ, G. BERTRAND
Filed on April 10, 2015
Patent number 3129347 issued on December 1, 2021

- 29 Optically Pure Complexes of ruthenium complexes and uses thereof-1. JAZZAR, R.,
 BERTRAND, G. VERMERSCH, F., VANTHUYNE, N., MORVAN, J. MAUDUIT, M.
PCT/FR2020/051221 (Filed 8 July 2020), PCT/EP2021/068995 (Filed 8 Juillet 2021),
WO 2022008946 A1 20220113.

- 30 Optically Pure Complexes of ruthenium complexes and uses thereof-2. JAZZAR, R., BERTRAND, G. VERMERSCH, F., VANTHUYNE, N., MORVAN, J. MAUDUIT, M. **EP/20305787.2 (Filed 8 July 2020), PCT/EP2021/069049 (8 Juillet 2021), WO 2022008656 A1 20220113.**
- 31 IMINIUM SALTS WITH A BARRALENE RING, CORRESPONDING RUTHENIUM COMPLEXES, AND USES THEREOF. MAUDUIT, M., MORVAN, J., TALCIK, J., JAZZAR, R., BERTRAND, G., MELAIMI, M., SERRATO, M. R. **PCT/EP2022/082039 (15 November 2022), WO 2020/109217 A2**

INVITED LECTURES

At Conferences (* indicates a plenary lecture)

- 1 Nouvelles coordinences en chimie du phosphore
 G.E.C.O.M. XII, Bordeaux (France), April 1984
- 2 Stable phosphinocarbene, nitrileimine and diazomethylenephosphorane
 The Third Chemical Congress of North America, Toronto (Canada), June 1988
- 3 Synthesis and reactivity of the first stable λ^5 -phosphaacetylene
 XIth International Conference on Phosphorus Chemistry, Tallinn (USSR), July 1989
- 4 Use of phosphorus for stabilizing highly reactive organic molecules
 Symposium on Low Coordinated Phosphorus Compounds, Kiev (USSR), July 1989
- 5 Basses coordinences : de la curiosité de laboratoire à l'outil de synthèse
 Colloque sur les Basses Coordinences en Hétérochimie. Quel futur, quelles applications ? Toulouse (France), October 1989
- 6 Cumulenic diazo derivatives, nitrile-imines and carbenes : from highly unstable species to isolable compounds
 Symposium on Nitrogen Rings and Chains : The Legacy of Theodor Curtius, Heidelberg (Germany), March 1990
- 7 Use of phosphorus for stabilizing highly reactive species
 International Conference on Organic and Bioorganic Chemistry of Phosphorus, Lodz (Poland), June 1990
- 8 Utilisation d'hétéroatomes pour stabiliser des espèces organiques hautement réactives
 Club CRIN "Journée Hétérochimie", Paris (France), March 1991
- 9 Use of heteroatoms for stabilizing highly reactive organic species
 International Workshop on Reactive intermediates, Heron Island, Queensland (Australia), July 1991
- 10 Stable carbenes, nitrilimines, diazocumulenes, mono- and tri-coordinated phosphorus cations
 SFC 91, 4ème Congrès de la Société Française de Chimie, Strasbourg (France), September 1991
- 11 Use of heavier main group elements for stabilizing highly reactive organic species
 Japanese Conference on Heteroatom Chemistry, Osaka (Japan), January 1992
- 12 Des intermédiaires réactionnels stables
 Journées de Chimie Organique de Palaiseau (France), September 1992

- 13 New stable free carbenes and new types of phosphorus cations
Gordon Research Conference on Organometallic Chemistry, Rhode Island (USA), July 1993
- 14* Aromaticity and anti-aromaticity : what can we do with phosphorus ?
Workshop on Phosphaalkynes and Phosphaalkenes - Milestones in the Chemistry of Low-coordinate Phosphorus, Kaiserslautern (Germany), October 1993
- 15* Antiaromatic inorganic ring systems
VIIth International Conference on Inorganic Ring Systems (IRIS VII), Banff (Canada), August 1994
- 16 Phosphorus substituted "CN₂" groups: building blocks in heterocyclic chemistry
XVIth European Colloquium on Heterocyclic Chemistry, Bled (Slovenia), September 1994
- 17* Cyclodiphosphazenes-polyposphazenes and related rings and polymers
VIth International Kyoto Conference on New Aspects of Organic Chemistry (IKCOC-6), Kyoto (Japan), November 1994
- 18 New aspects of the chemistry of azido and diazo groups : building blocks for original heterocycles
International Conference on Chemistry of Functional Organic Chemicals (IFOC), Tokyo (Japan) November 1994
- 19 Silicon and Tin: two very different cousins
Workshop on Silicon Chemistry, Tsukuba (Japan), November 1994
- 20 Synthesis and reactivity of 4- π -electron 4-membered phosphorus heterocycles
Workshop on Organic and Inorganic Chemistry of Reactive C=X π -systems, Münster (Germany), November 1994
- 21 Synthesis and reactivity of relatively stable isodiazirine
International Chemical Congress of Pacific Basin Societies, Honolulu (USA), December 1995
- 22 The trimethylsilyl diazomethane: a wonderful building block
The 3rd Munich Silicondays, Munich (Germany), April 1996
- 23 Phosphorus in a highly versatile element
Summer School on Modern Main Group Chemistry, Champéry (Switzerland), September 1996
- 24 Double and triple bonded phosphorus derivatives
Summer School on Modern Main Group Chemistry, Champéry (Switzerland), September 1996

- 25 Phosphorus in organic chemistry
Summer School on Modern Main Group Chemistry, Champéry (Switzerland), September 1996
- 26 Phosphorus in transition metal chemistry
Summer School on Modern Main Group Chemistry, Champéry (Switzerland), September 1996
- 27 Des résidus de produits phytosanitaires et des métaux lourds
Festival de l'eau. Eau et santé, Rodez (France), October 1996
- 28 Group 13 to 15 elements: from small membered rings to polymers through macrocycles
23rd Symposium on Heteroatom Chemistry, Okayama (Japan), December 1996
- 29 Des molécules exotiques aux applications
Assemblée SFC Midi-Pyrénées, Toulouse (France), March 1997
- 30 Nouvelles bases fortes non ioniques
IIIème Rencontres "Recherche, Science et Technologies des deux côtés des Pyrénées", Andorre (Andorra), June 1997
- 31 Phosphorus Analogs of 2H- and 1H-diazirines, diazirinium and Diaziriny radical
International Conference on Reactive Intermediates and Unusual Molecules, Lake Tahoe, California (USA), July 14-19, 1997
- 32 From exotic molecules to applied chemistry
Gordon Research Conference on Inorganic Chemistry, Salve Regina (USA), July 20-25, 1997
- 33 Des molécules exotiques aux applications
Club CRIN, Hétérochimie, Paris (France), September 24, 1997
- 34 A new type of benzene valence isomer and one-electron phosphorus-phosphorus bond
FACS, Cannes (France), June 2-5, 1998
- 35 One-electron phosphorus-phosphorus bond
XIVth International Conference on Phosphorus Chemistry, Cincinnati (USA), July 13-17, 1998
- 36 Let's play with bond order in phosphorus chemistry
Niecke 60th Birthday Symposium, Bonn (Germany), January 16, 1999
- 37* Are stable silyl carbenes genuine carbenes ?
XIIth International Conference on Organosilicon Chemistry, Sendai (Japan), 23-28/05/99
- 38 Phosphorus-phosphorus half bonds do exist. What about silicon-silicon half bonds?
ISOS XIIth, Kyoto (Japan), May 28-30, 1999

- 39 Heterocyclic bis(carbene) and cationic carbene as ligands for transition metals
Pre-OMCOS Symposium, Rennes (France), July 15-16, 1999
- 40 Main group element half bonds
218th ACS National Meeting, JOM Symposium on "Frontiers in Organometallic Chemistry" New Orleans (USA), August 22-26, 1999
- 41 A tetraphosphabenzene valence isomer unknown in the carbon series
KISPOC III, Fukuoka (Japan), September 29 - October 02, 1999
- 42 Sometimes it's not organic but main group chemistry, which leads the way
German Chemical Society (GDCh), Berlin (Germany), April 17-18, 2000
- 43 Nouveaux types de carbènes comme ligands pour les métaux de transition
Gecom Concoord 2000, Dijon (France), May 14-19, 2000
- 44 Des concepts simples et des résultats originaux
SFC/Section Midi-Pyrénées, Toulouse (France), May 25, 2000
- 45 A cyclic carbanionic valence isomer of a carbocation
Conference on Reactive Intermediates and Unusual Molecules, Vienne (Austria), August 26-31, 2000
- 46 Exploiting the phosphorus trick
Symposium on Electron Transfer in Inorganic and Organic Chemistry, Münster (Germany), November 15-17, 2000
- 47 Stable versions of transient push-pull carbenes
Pacificchem, Symposium on Reactive Intermediates and Unusual Molecules, Honolulu (USA), December 14-21, 2000
- 48 Phosphorus analogs of amidinium salts
Pacificchem, Inorganic Chemistry, Honolulu (USA), December 14-21, 2000
- 49 La chimie avec ou sans hétéroélément(s) : quelle différence !
Micro-symposium IUF, Talence (France), March 3, 2001
- 50 Chemistry of organophosphorus compounds
International Symposium CHIREX, Jacksonville (USA), April 23-27, 2001
- 51 New types of bonding in main group chemistry
84^{ème} Canadian Society for Chemistry Conference & Exhibition, Montréal (Canada), May 26-30, 2001
- 52 Chemistry with and without main group element : what a difference !
1st International Rhodia Conference, Lyon (France), July 02-05, 2001

- 53 Stable singlet biradicals in phosphorus chemistry
15th International Conference on Phosphorus Chemistry, Sendai (Japan) July 29 – August 3, 2001 (Cancelled)
- 54 Quelques spécificités de la chimie des éléments principaux
42^{ème} Groupe d'Etudes de Chimie Organique, Batz-sur-Mer (France), September 02-07, 2001
- 55 Chemistry with and without heavier main group elements : what a difference for reactive intermediates
International Symposium on Reactive Intermediates and Unusual Molecules, Nara (Japan), September 08-13, 2001
- 56 New types of bonding in main group chemistry
ACS Meeting, Chicago (USA), August 25-26, 2001
- 57 Stable carbenes in organic synthesis
Cost D12 Workshop, La Laguna, Tenerife (Spain), September 20-23, 2001 (Cancelled)
- 58 New stable carbenes and diradicals
ACS Meeting, “Inorganic Chemistry Award Symposium” New Orleans (USA), March 23-27, 2003
- 59 Chemistry with and without main group element: what a difference!
Inorganic Chemistry Colloquium, Cambridge (UK), June 5, 2003 (Cancelled)
- 60* Chemistry with and without main group element: what a difference!
Encuentro de Química Inorgánica Cuernavaca 2003 , (Mexico), June 12-14, 2003
- 61 New types of stable carbenes
Gordon Conference on Organometallic Chemistry, Newport (USA), July 20-25, 2003
- 62* Stable diradicals based on heavier main group elements
10th International Symposium on Inorganic Ring Systems, Burlington (USA) August 17-22, 2003 (Cancelled)
- 63 New types of stable carbenes as ligands for transition metals
ACS Meeting “Frontiers in Organometallic Chemistry Symposium” New York (USA) September 7-11, 2003
- 64* Exotic lithium derivatives
The Third Conference on the Chemistry of the Alkali and Alkaline Earth Metals (ALKCHEM-3), Würzburg (Germany) September 28-10, 2003 (Cancelled)
- 65* Stable Singlet Diradicals and Tetraradicals Based on Group 13 and 15 Elements
Center of Excellence International Symposium on Elements Science. Kyoto (Japan) January 9-10, 2004

- 66 Stable diradicals and tetraradicals
ACS Meeting “Main group Chemistry Symposium” Anaheim (USA) March 28 – April 4, 2004
- 67* Towards libraries of Carbenes via Substitution Reactions at a Carbene Center: Application in catalysis
Symposium of the French-Japanese Society for Medicinal and Fine Chemistry, Sendai (Japan) May 17-20, 2004
- 68 New Stable Diradicals based on Phosphorus
XVIth International Conference on Phosphorus Chemistry, Birmingham (UK) July 4-9, 2004
- 69* Stable Non N-Heterocyclic Carbenes: New ligands for transition metal catalysts
XXIst International Conference on Organometallic Chemistry (ICOMC), Vancouver (Canada) July 25-30, 2004
- 70 Stable non-NHCs
ACS Meeting “NHC Carbenes Symposium” Philadelphia (USA) August 22-27, 2004
- 71 Stable Carbenes based on boron
ACS Meeting, “Albert Cotton Award Symposium” San Diego (USA), 3/13-16/2005
- 72* New Families of Stable Cyclic Carbenes for the Preparation of Highly Active Catalysts and Low Ligated transition metals
XVIth FECHM Conference on Organometallic Chemistry, Budapest (Hungary) September 3-8, 2005.
- 73* New Families of Stable Cyclic Carbenes for the Preparation of Highly Active Catalysts and Low Ligated transition metals
International Symposium on Dynamic Complexes, Sendai (Japan) October 23-25, 2005.
- 74 Chemistry with and without silicon and other main group elements: what a difference!
Japanese Silicon Meeting, Hiroshima (Japan) October 28-29, 2005.
- 75 New Families of Stable Cyclic Carbenes (non NHCs) for the Preparation of Highly Active Catalysts
6th Annual UCSD/Merck Symposium on Perspectives in Organic Synthesis, San Diego (USA) December 12, 2005.
- 76 New families of stable carbenes
2005 Pacifichem Conference “Symposium on Reactive Intermediates and Unusual Molecules” Hawaii (USA) December 2005

- 77 Stable cyclic (amino)(alkyl)carbenes as ligands for transition metal complexes featuring very high catalytic activity
2005 Pacifichem Conference “Symposium on New Organometallic Compounds for Applications in Homogeneous Catalysis” Hawai (USA) December 2005
- 78 New Families of Stable Cyclic Carbenes (non NHCs) for the Preparation of Highly Active Catalysts
DFG symposium, Tagungshotel Schleiden-Bonn (Germany) 5/7-9/2006
- 79 Chemistry with and without main group elements: what a difference!
Grand Opening Symposium of the Main Group Chemistry Research Center, Bristol (UK) July 28, 2006.
- 80* Diradicals
11th International Symposium on Inorganic Ring Systems, Oulu (Finland) 7/30-8/4/2006
- 81 Stable singlet diradicals, polyradicals and carbenes based on boron
ACS Meeting, “Polyfunctional Organoboranes: From Molecules to Materials Symposium” San Francisco (USA), 9/10-14/2006
- 82* Stable carbenes can help, and even do the job of transition metals
42nd EUCHEM Conference on Stereochemistry, Burgenstock (Switzerland) April 14-20, 2007
- 83* Chemistry with and without main group elements: what a difference!
Contemporary Main Group Chemistry Symposium, St-Andrews (Scotland) June 5, 2007
- 84 Can a non-metal do the job of a transition metal?
Inorganic Chemistry Gordon Research Conference, Newport (USA) July 15-20, 2007
- 85 Can a carbene do the job of a metal?
ACS Meeting “Frontiers in Organometallic Chemistry” Boston (USA) 8/19-23/2007
- 86* Activation of small molecules and unreactive XH bonds by Stable Singlet Carbenes
Heavier Heterocycles and Heteroatoms Zing Conference, Cancun (Mexico) February 25-28, 2008
- 87 Bent-allenes
2008 SynCon Meeting, (UCLA), May 10, 2008
- 88*. Activation of White Phosphorus by Stable Singlet Carbenes (Cancelled)
XV International Conference on Chemistry of Phosphorus Compounds (Saint-Petersburg, Russia) May 25-30, 2008.

- 89 1,3-Diborata-2,4-diphosphoniocyclobutane-1,3-diyls Communicate through a para-Phenyl Linker
Dalton Discussion 11, The Renaissance of Main Group Chemistry (Berkeley) June 21-25, 2008
- 90* Stable diradicals, bond-stretch isomers, and carbenes based on boron
IMEBORON XIII Barcelona- Platja d'Aro (Spain) September 21-25, 2008
- 91* Stable carbenes and bent-allenes as strong donor ligands for Transition Metal Catalysts
Catalysis, NMR, Symmetry, Theory: A tribute to Paul Pregosin, ETH Zurich, (Switzerland) October 27 2008
- 92 From crazy molecules (A tribute to Edgar) to catalysis.
Edgar Niecke Feast, Bonn, (Germany) January 5, 2009
- 93 Novel families of carbon ligands, novel catalytic reactions
Carbene Zing Conference, Cancun (Mexico) February 18-21, 2009
- 94 Novel families of carbon ligands, novel catalytic reactions
237th ACS meeting "2009 ACS Award for Distinguished Service in the Advancement of Inorganic Chemistry: Alan H. Cowley Symposium" March 22-26, 2009, Salt lake City (USA)
- 95* Interplay between radicals, carbenes, bent-allenes and phosphorus chemistry.
6th European Workshop on Phosphorus Chemistry, Florence (Italie) March 26-27, 2009
- 96* Nouvelles familles de ligands carbonés, Nouvelles réactions catalytiques
Congrès de l'ACFAS (Association Canadienne-Française pour l'Avancement des Sciences) Ottawa (Canada) May 11-15, 2009
- 97 Abnormal carbenes
2008 SynCon Meeting, (USC) May 23, 2009
- 98 Carbene activation of P₄
92th Canadian Chemistry Conference, Hamilton, Ontario (Canada) May 30- June 3, 2009
- 99* Carbenes and Bent-Allenenes in Phosphorus Chemistry
9th International Conference on Heteroatom Chemistry (ICHAC-9) Oviedo (Spain) June 30th -July 4th, 2009
- 100* Carbenes and Bent-Allenenes in Phosphorus Chemistry
Biannual German Chemical Society Meeting, Frankfurt (Germany) August 30- September 2, 2009

- 101 Interplay between radicals, carbenes, bent-allenes and phosphorus and boron chemistry.
The Diversity of Main Group Element Chemistry Symposium, Nottingham (UK), September 7, 2009
- 102* Interplay between radicals, carbenes, bent-allenes and phosphorus and boron chemistry.
Recent Adventures in Carbene Chemistry Symposium, Durham (UK), September 8, 2009
- 103* Interplay between radicals, carbenes, bent-allenes and phosphorus and boron chemistry.
Royal Society of Chemistry, Main Group Chemistry Annual Symposium, Manchester (UK) September 11, 2009
- 104 Interplay between radicals, carbenes, bent-allenes and main group chemistry.
International symposium on "Elemento- and Metallo-Organic Chemistry toward Materials Science", Riken, Tokyo (Japan) November 5-6, 2009
- 105 Title unknown (cancelled)
International Schulich Mini-Symposium on Frontiers in Computational Chemistry and Bridging Chemistry and Biology, Haifa (Israel) December 8, 2009
- 105 Novel families of carbon ligands, novel catalytic reactions
Dutch National Symposium on Organic Chemistry, Amsterdam (The Netherlands) April 8-9, 2010
- 106 Novel families of carbon ligands, novel catalytic reactions
Rencontres de Chimie Organique 2010, Paris (France) April 15, 2010
- 107 Novel families of carbon-based ligands, novel catalytic reactions
38th Stauffer Symposium, USC Los Angeles (USA) April 28, 2010
- 108 Stable Triazolyliidenes
2010 SynCon Meeting, (Caltech) May 22, 2010
- 109 New stable carbon-based ligands, novel catalytic reactions.
93rd Canadian Chemistry Conference and Exhibition (CSC2010) (Toronto, Canada) May 29-June 2, 2010
- 110 NH₃-hydroamination of unactivated CC multiple bonds
DOE Contractor's Meeting (Anapolis, Maryland) June 1-4, 2010
- 111 Novel families of carbon-based ligands, novel catalytic reactions
Organometallic Chemistry Gordon Research Conference, Newport, RI (USA) July 11-16, 2010

- 112 Novel families of carbon-based ligands, novel catalytic reactions
Symposium “Frontiers in Organometallic Chemistry” PACIFICHEM Conference, Honolulu, Hawaii (USA) December 14-20, 2010
- 113 Stable carbenes: Past and future
Symposium “remise des Grands Prix Nationaux et Binationaux” Marseille (France) May 2, 2011
- 114 "Carbenes stables: Applications en catalyse et ailleurs"
Symposium “Grand Prix de la Societe Chimique de France” Toulouse (France) May 3, 2011
- 115 Neutral Tricoordinated Boranes as Lewis Bases
2011 SynCon Meeting, (UCI), May 14, 2011
- 116 Interplay between carbene and phosphorus chemistry
2011 IUPAC Congress, San Juan, Puerto Rico, July 31st-August 7th, 2011
- 117 Carbenes for the activation of small molecules and the stabilization of unusual phosphorus and boron species
242nd ACS National Meeting, Denver, Colorado, August 28th-September 1st, 2011
- 118 Novel families of carbon- and boron-based ligands, novel catalytic reactions
The 4th PKU-Eli Lilly Symposium of Organic Chemistry, Beijing (China) September 10, 2011
- 119 Novel families of carbon- and boron-based ligands, novel catalytic reactions
75th Anniversary Instituto de Química UNAM, Mexico (Mexico), December 8, 2011
- 120 Stable neutral tricoordinate organoboron derivatives isoelectronic with amines
243th ACS National Meeting, San Diego, CA, March 25th-March 29, 2012
- 121 Stable neutral tricoordinate organoboron derivatives isoelectronic with amines and stable phosphino nitrene.
95th Canadian Chemistry Conference and Exhibition (CSC2012) (Calgary, Canada) May 26-30, 2012
- 122* Stable carbenes and related species: Powerful tools in organic and inorganic chemistry.
Schulich Symposium on Recent Advances in Organic Chemistry (Technion City, Haifa, Israel) June 24, 2012

- 123* Activation of P₄ and Isolation of Highly Reactive Phosphorus Species.
International Conference on Phosphorus Chemistry (Rotterdam, Netherlands) July 8-12, 2012
- 124* Can boranes act as Lewis Bases? Can Nitrenes be isolated?
International Symposium on Reactive Intermediates and Unusual Molecules (ISRIUM) (Ascona, Switzerland) July 8-13, 2012
- 125* Stable carbenes for the stabilization of organoboron Lewis bases, phosphino nitrenes, and for the activation of P₄
International Symposium on Inorganic Ring Systems (IRIS 13) (Victoria, Canada) July 29-August 2, 2012
- 126 Stable cyclic carbenes and related species beyond NHCs
244th ACS National Meeting, Philadelphia, PA (USA), August 19-23, 2012
- 127* Synthesis and reactivity of unusual main group element species
ChemComm / Dalton Transactions International Symposium, Regensburg (Germany) March 21-22, 2013
- 128 Synthesis and reactivity of stable tricoordinate organoboron Lewis bases, phosphino nitrenes, and other unusual species
245th ACS National Meeting, New Orleans, LU (USA), April 7-11, 2013
- 129 Novel families of carbon- and boron-based ligands, novel catalytic reactions
Munster Symposium on Cooperative Effect in Chemistry, Munster (Germany) May 3-2013
- 130 Carbon-, nitrogen- and boron-based ligands
OMCOS 17, Fort Collins, CO (USA), July 28-August 1, 2013
- 131 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
Gordon Stone Symposium, University of Bristol (England), October 16, 2013
- 132 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
Annual Meeting of the State Key Laboratory of Elemento-Organic Chemistry of Nankai University, Tianjin (China), October 26, 2013.

- 133 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
Award Address (ACS Award in Inorganic Chemistry sponsored by Aldrich Chemical Company, LLC), 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, 2014.
- 134 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
94th Spring annual meeting of the Japan Chemical Society Meeting, Nagoya (Japan), March 27-30, 2014.
- 135 Stable carbenes and other unusual species
1st Organic Chemistry Frontiers International Symposium, Shanghai (China), April 3, 2014.
- 136 Stable carbenes and other unusual species
International Symposium on Reactive Intermediates and Reactive molecules 2014, Hiroshima (Japan), April 1-6, 2014.
- 137 Stable carbenes: Synthesis and applications
4th Annual Andrews Graduate Research Symposium, Mississippi State University, May 20-21, 2014.
- 138 Stable carbenes beyond catalysis.
CSC 2014 Conference and Exhibition, Vancouver, Canada, June 1-5, 2014.
- 139* Stable carbenes: Synthesis and applications
VII International School on Organometallic Chemistry Marcial Moreno Mañas, Barcelona, Spain, June 25-27, 2014.
- 140* Stable carbenes and related species: Powerful tools in inorganic chemistry.
13th International Conference on Advancing the Chemical Sciences, ISACS 13, Dublin, Ireland, July 2-4, 2014.
- 141* Novel families of carbon- and boron-based ligands
Pre-Symposium ICCS, Hong Kong, July 17-18, 2014.
- 142 Novel families of carbon- and boron-based ligands
41th International Conference on Coordination Chemistry, Singapore, July 19-24, 2014.

- 143 Beaucoup de carbenes et un peu d'or
Symposium in honor of Max Malacria, Paris, October 10, 2014.
- 144 Stable carbenes for the activation of small molecules
Münster-Toronto International Research Training Program Opening Symposium, Munster, October 11, 2014.
- 145* Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
French-Chinese Conference on Green Chemistry, Shanghai (China), November 5-7, 2014.
- 146* Activation of P₄ and preparation of novel types of phosphorus species
1st International Conference on Sustainable Phosphorus Chemistry, Florence (Italy), December 3-5, 2014.
- 147* Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
Gordon Stone Symposium, Baylor University (Texas), May 20-21, 2015.
- 148* Heteroatoms in their lowest coordination and oxidation states
11th International Conference on Heteroatom Chemistry (ICHAC-11), Caen (France), June 14-19, 2015.
- 149* Stable carbenes and related species: Powerful tools in organic and organometallic chemistry
14th Gif Symposium, Paris (France), June 18-19, 2015.
- 150* Stable singlet carbenes for the stabilization of highly reactive transition metal complexes
5th Asian Conference on Coordination Chemistry (ACCC5), Hong Kong, July 12-16, 2015.
- 151* Nucleophilic boron derivatives, stable phosphinidenes and other main group species
14th International Symposium on Inorganic Ring Systems (IRIS-14), Regensburg (Germany), July 26-31, 2015.
- 152* Stable carbenes and related species: Powerful tools in organic and organometallic chemistry
European Symposium on Organic Reactivity (ESOC 2015), Kiel (Germany), August 30 - September 04, 2015

- 153 Isolation of highly reactive organic, inorganic and organometallic species
Symposium in Honour of Professor Hahn 60th birthday, Munster (Germany), October 16, 2015
- 154 Synthesis of Highly Reactive Inorganic Monomers
Zing Conference on Inorganic Polymers, Carlsbad (USA), February 12-14, 2016
- 155 Stable carbenes: Powerful tools in organic and organometallic chemistry
3rd Organic Chemistry Frontiers International Symposium (Oxford, UK), March 1, 2016
- 156 Room temperature stable phosphinidenes and related species
251st ACS National Meeting & Exposition, San Diego, CA (USA), March 12-17, 2016.
- 157 Isolation of Species Hitherto Believed to Be Only Transient Intermediates
Fujihara Seminar-70, Fukuoka (Japan), April 17-21, 2016
- 158 Stable carbenes and related species: Powerful tools in organic chemistry
Inorganic Gordon Conference, Biddeford ME (USA), June 19-24, 2016
- 159 Isolation of catalytically active species of the CuAAC reaction and consequences
42nd International Conference on Coordination Chemistry, Brest (France), July 3-8, 2016
- 160* Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
SISC, Singapore, July 15, 2016
- 161* Isolation of catalytically active species hitherto believed to be only transient intermediates and consequences
27th International Conference on Organometallic Chemistry, Melbourne (Australia), July 17-22, 2016
- 162 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
Didier Bourissou CNRS Silver Medal Symposium, Toulouse (France), October 19, 2016
- 163* Coordination chemistry and catalysis with novel types of carbenes
The 1st Symposium of Metal-Carbene Consortium, Hong Kong, December 1-2, 2016
- 164 Stable carbenes and related main group species as powerful tools.
Luojia Symposium, Wuhan University (China), April 18, 2017

- 165 Stable carbenes as powerful tools in organic and organometallic chemistry
4th Organic Chemistry Frontiers International Symposium, Kunming (China), April 21-22, 2017
- 166 Stable carbenes and main group element carbenoids.
RSC Inorganic Synthesis Symposium, Oxford (UK), April 26, 2017
- 167 Novel carbenes and related species in organometallic chemistry
International Symposium on Olefin Metathesis and Related Chemistry (ISOM 22), Zurich (Switzerland), July 9-12, 2017
- 168 Stable carbenes and related species as powerful tools in organometallic chemistry
Organometallic Gordon Conference, Newport (USA), July 9-14, 2017
- 169 Stable carbenes and related species as powerful tools in inorganic chemistry
XXVI Congresso Nazionale della Società Chimica Italiana, Paestum (Italy), September 10-14, 2017
- 170 Back to main group chemistry
50 Years of LHFA Symposium, Toulouse (France), September 22, 2017
- 171 Stable carbenes and related species as powerful tools
1st Xi'an symposium, Xi'an (China) October 27, 2017
- 172 Stable carbenes as powerful ligands for transition metal catalysts and maybe as catalysts on their own right.
1st Solvay China Conference, Shanghai (China) November 1st, 2017
- 173 Organic mixed valence compounds and Kekulé diradicaloids derived from CAACs
255th ACS National Meeting & Exposition, New Orleans, LU (USA), March 18-22, 2018.
- 174 Stable carbenes and related species as powerful tools
New Adventures in Physical (In)Organic Chemistry” Symposium, Amsterdam (Netherlands) April 9, 2018.
- 175 Novel stable carbenes and their applications
2nd Symposium of Metal-Carbene Consortium, Beijing (China) June 7-9, 2018.
- 176 Stable carbenes: 30 years after their discovery.
1st University of San Diego Summer Chemistry Symposium, San Diego, July 18, 2018.
- 177 Carbenes as powerful ligands for transition metal catalysts and as small molecule activators on their own rights
The 2018 Department of Energy/Basic Energy Sciences/Catalysis Science PI Meeting. (Anapolis, Maryland) July 29-31, 2018.

- 178* Stable carbenes and related species as powerful tools
Physical Organic Chemistry (POC-29) (Tokyo, Japan) September 6-9, 2018.
- 179 Carbenes: From laboratory curiosities to bulk chemicals
1st Stable Carbene Symposium (Toulouse, France) November 30, 2018.
- 180 Tandem Copper Hydride-Lewis Pair Catalyzed Reduction of Carbon Dioxide and metal-free carbene carbonylation reactions
102nd Canadian Chemistry Conference and Exhibition (Québec City, Canada), June 03-07, 2019
- 181* Stable carbenes, phopshinidenes and borylenes
13th International Conference on Heteraotom Chemistry (ICHAC-13), Prague (Czech Republic)), June 30-July 5, 2019.
- 182 Carbenes as powerful transition metal surrogates
258th ACS National Meeting & Exposition, San Diego, CA (USA), August 25-29, 2019.
- 183 Stable carbenes and related species as powerful tools
2nd Xi'an symposium, Xi'an (China) September 6, 2019
- 184 Carbenes as powerful transition metal surrogates
124th General Meeting of the Korean Chemical Society, Changwon, (South Korea), October 16-18, 2019.
- 185* Carbenes as powerful transition metal surrogates
The 1st Mechanism and Synthesis Symposium (MASS), Beijing, (China), October 21-23, 2019.
- 186* Carbenes: From laboratory curiosities to bulk chemicals
13th National Conference on Physical Organic Chemistry (NCPOC), Nanchang, (China), October 25-26, 2019.
- 187* Boron, Silicon and Phosphorus Analogues of Carbenes
International Conference on Phosphorus, Boron and Silicon (PBSi 2019), Rome, (Italy), December 2-3, 2019.
- 188* Carbenes as powerful transition metal surrogates
Third International Symposium on Metal Carbenes and Nitrenes, San Antonio, Texas (USA), February 5-7, 2020.
- 189 Carbenes as powerful transition metal surrogates
ACS Publications Symposium "The Power of Chemical Transformations", Hong Kong, May 20-21, 2021 (Remote)

- 190 Carbenes as powerful transition metal surrogates
French-Chinese Conference on Green Chemistry, Lyon (France), October 25-28, 2021
- 191 Mesoionic Carbene-Breslow Intermediates as Super Electron Donors: Application to the Metal-Free Arylacylation of Alkenes
Main group catalysis webinar, Cell Press, November 2, 2021 (Remote)
- 192 Stable carbenes and their applications
Chimie et agriculture durable, Paris (France), November 10, 2021.
- 193 Carbenes as Powerful Transition-Metal Surrogates
ACS National Meeting & Exposition, San Diego, CA (USA), March 20-24, 2022.
- 194 Carbenes as Powerful Transition-Metal Surrogates
Virtual 5th International Conference on Organometallics and Catalysis (OM&CAT-5), Hong Kong, June 12-15, 2022.
- 195* Carbenes as Powerful Transition-Metal Surrogates
17th Belgian Organic Synthesis Symposium (BOSS XVII), Namur (Belgium), July 3-8, 2022.
- 196 Carbon with 6, 5 and Possibly 4 Electrons Around (*web*)
25th IUPAC Conference on Physical Organic Chemistry (ICPOC25), Hiroshima (Japan), July 5-10, 2022.
- 197 Carbon with 6, 5 and Possibly 4 Electrons Around
29th International Conference on Organometallic Chemistry (ICOMC-2022), Prague (Czech Republic), July 17-22, 2022.
- 198 Carbon with 6, 5 and possibly 4 electrons around
ACS National Meeting & Exposition, Chicago, IL (USA), August 21-25, 2022.
- 199 Carbenes as precious metal surrogates
HIAS Symposium & RESURGE Workshop, College Station, TX (USA), October 13-14, 2022.
- 200 Undressing Carbon
ACS National Meeting & Exposition, Indianapolis, IN (USA), March 26-30, 2023.
- 201 Mesoionic Carbenes as Powerful Organocatalysts
ACS National Meeting & Exposition, Indianapolis, IN (USA), March 26-30, 2023.
- 202 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
International Research Training School Toronto-Munster Symposium, Munster (Germany), April 27-28, 2023.

- 203 Can a free carbene do the job of a transition metal?
4th International Symposium on Carbene and Nitrene Chemistry, Amsterdam (Netherlands), July 25-28, 2023.
- 204 Undressing carbon
755 Heraeus Seminar: Solvation Chemistry and Reactive intermediates, Bad Honnef (Germany), September 17-23, 2023
- 205* Transition metal like behavior of phosphorus
International Conference on Phosphorus Chemistry (ICPC24), Ningbo (China), October 12-16, 2023.
- 206* Carbenes as Powerful Transition-Metal Surrogates
International Carbene Symposium, POSTECH Pohang (Korea), January 22-24, 2024.
- 207 Can Carbon Compete with Boron?
ACS National Meeting & Exposition, New Orleans, LA (USA), March 17-21, 2024.
- 208 Low coordinated main group species
ETH Laboratory Inorganic Chemistry Symposium, Zurich (Switzerland), May 8, 2024
- 209* Coordination Chemistry at Phosphorus (Phosphorus as a Metal-Like)
14th International Conference on Heteroatom Chemistry (ICHAC 14), Tianjin (China), July 14-19, 2024.
- 210* Carbenes as Powerful Transition-Metal Surrogates
GDCh-Conference on Inorganic Chemistry, Munich (Germany), September 16-18, 2024.
- 211 Carbenes as Powerful Transition-Metal Surrogates
French-Chinese Conference on Green Chemistry, Shanghai (China), November 23-25, 2024
- 212 Boron chemistry: An inspiration for carbon and phosphorus chemists.
Boron in the Americas (BORAM), Los Angeles (USA), December 15-19, 2024

At Companies (day/month/year)

- 1-2 Phosphonitriles and cyclodiphosphazenes
Ethyl Corporation, Baton Rouge-Louisiana (USA), 25/9/1985
Stauffer Chemical Company, Dobbs Ferry-New York (USA), 4/10/1985

- 3 Phospholipids : Structural Analogs of Platelet Activating Factor
Monsanto Company, St. Louis-Missouri (USA), 28/9/1985

- 4 Nouveaux synthons en chimie hétérocyclique
Etablissements Pierre Fabre Médicaments, Castres (France), 10/2/1988

- 5 Stabilisation d'espèces hautement réactives : leur utilisation en synthèse organique
SNPE, Vert le Petit (France), 25/10/1988

- 6 Les éléments lourds principaux en chimie organique.
Sanofi Recherche, Toulouse (France), 21/11/1989

- 7 Carbènes et nitrilimines : de la curiosité de laboratoire à l'outil de synthèse
Rhone-Poulenc, Lyon - St Fons (France), 14/6/1990

- 8 Electron deficient species: from laboratory curiosities to synthetic tools
BASF, Ludwigshafen (Germany), 4/9/1990

- 9 Use of heavier main group elements for stabilizing highly reactive organic species
Du Pont Experimental Station, Wilmington (USA), 3/9/1991

- 10 Main group elements are useful
ARCO Chemical Co., Newton Square (USA), 4/9/1991

- 11 Les nitrilimines
Flamel Technologies, Lyon (France), 5/11/1991

- 12-13 Stable carbenes, nitrilimines and diazocumulenes : powerful building blocks for heterocyclic synthesis
Sumitomo Chem. Co., Takarazuka (Japan), 18/1/1992
Mitsui Petrochem. Co., Hiroshima (Japan), 22/1/1992

- 14-15 New results in polyphosphazene chemistry and potential building blocks for non linear-optic materials
Nippon Soda Co., Tokyo (Japan), 28/1/1992
Idemitsu Petrochemical Co., Tokyo (Japan), 30/1/1992

- 16 Intermédiaires réactionnels stables : de la curiosité de laboratoire à l'outil de synthèse
Groupe Fournier, Dijon (France), 10/6/1992

- 17 New aspects of the chemistry of azido and diazo groups: building blocks for original heterocycles
Sankyo Co. LTD, Tokyo (Japan), 14/11/94
- 18 Stable carbenes and nitrilimines as a source of new heterocycles
Takeda Chemical Industries, LTD, Osaka (Japan), 9/11/94
- 19 Les éléments lourds principaux. Applications en synthèse organique
Sanofi, Toulouse, 29/05/96
- 20 Nouveaux outils en synthèse organique
Rhône-Poulenc, Paris (France), 28/10/97
- 21 New aspects of the chemistry of α -silyldiazo compounds
Dow Corning Asia, Tokyo (Japan), 5/12/97
- 22 New stable radicals and carbenes
Procter and Gamble, Cincinnati (USA), 14/01/98
- 23 New progress in phosphorus chemistry
Monsanto Company, Saint Louis (USA), 15/01/98
- 24 New polymerization catalysts
ICI, Bruxelles (Belgium), 11/02/98
- 25 New building blocks for heterocyclic synthesis and biocompatible polymers as drug delivery systems
Otsuka Pharmaceutical Co. Ltd, Tsukuba (Japan), 16/10/99
- 26 New Families of Stable Cyclic Carbenes for the Preparation of Low Ligated Transition Metals, and Highly Active Catalysts. Can a Carbene do the Job of a Metal?
The Dow Chemical Company (Midland, USA) May 8, 2007
- 27 What is new with carbenes?
Rhodia Inc (Bristol, USA) October 2, 2007
- 28 Novel families of carbon ligands, novel catalytic reactions
Materia, Pasadena, June 11, 2010
- 29 Novel families of carbon- and boron-based ligands, novel catalytic reactions
Rhodia Asia Research Center, Shanghai (China) September 20, 2011
- 30 Stable Carbenes and Related Species: Powerful Tools in Organic and Organometallic Chemistry
**Genentech Research and Early Development (gRED), San Francisco (USA)
November 6, 2015**

- 31 Stable Carbenes and Related Species: Powerful Tools in Organic and Organometallic Chemistry
 Umicore AG, Frankfurt (Germany) September 8, 2017

- 32 Carbenes as metal surrogates
 Sovay Research Center, Lyon (France) October 27, 2021

At Universities (day/month/year)

- 1-3 Curtius rearrangement in organometallic series : a route to new hybridized species
University of Durham, Durham (UK), 15/11/1982
University of Leicester, Leicester (UK), 16/11/1982
University of Sussex, Brighton (UK), 18/11/1982
- 4-9 Unusually hybridized silicon, germanium and phosphorus species
Louisiana State University, Baton Rouge-Louisiana (USA), 11/2/1983
North Texas State University, Denton-Texas (USA), 14/2/1983
San Diego State University, San Diego-California (USA), 17/2/1983
University of Southern California, Los Angeles-California (USA), 18/2/1983
California State University, Los Angeles-California (USA), 23/2/1983
University of California Los Angeles, Los Angeles-California (USA), 24/2/1983
- 10-14 Photochemical behaviour of phosphorus azides
Duke University, Durham-North Carolina (USA), 7/2/1983
University of Texas, Austin-Texas (USA), 9/2/1983
Texas Christian University, Forth-Worth-Texas (USA), 15/2/1983
University of Nevada, Reno-Nevada (USA), 25/2/1983
University of Utah, Salt Lake City-Utah (USA), 29/2/1983
- 15 Rearrangements in silicon and germanium series
University of Wisconsin, Madison-Wisconsin (USA), 1/6/1983
- 16 Réarrangements thermiques et photochimiques de composés phosphorés et siliciés
Université de Montpellier II (France), 10/3/1984
- 17 Rearrangement of heavier main group element azides
"Anorganisch-Chemisches Kolloquium", Aachen (Germany), 21/1/1985
- 18-22 Phosphorus nitrenes, phosphonitriles and phosphinidenes
Fakultät für Chemie, Bielefeld (Germany), 22/1/1985
Fachbereich Chemie, Kaiserslautern (Germany), 23/1/1985
Anorganisch-Chemisches Institut, Bonn (Germany), 25/1/1985
Organisch-Chemisches Institut, Heidelberg (Germany), 28/1/1985
Institut für Anorganische Chemie, Würzburg (Germany), 29/1/1985
- 23 The chemistry of the phosphorus-nitrogen triple bond
Institut für Anorganische und Analytische Chemie der Freie Universität, Berlin (Germany), 24/1/1985
- 24-28 The Chemistry of double and triple bonded phosphorus compounds
The University of North Carolina, Chapel Hill-North Carolina (USA), 20/9/1985
The University of Utah, Salt Lake City-Utah (USA), 23/9/1985
Tulane University, New Orleans-Louisiana (USA), 26/9/1985
California Institute of Technology, Pasadena-California (USA), 30/9/1985
University of Massachusetts, Amherst-Massachusetts (USA), 2/10/1985

- 29-33 λ^5 -phosphonitriles and λ^5 -phosphaacetylenes
Fakultät für Chemie, Bielefeld (Germany), 4/7/1986
Institut für Anorganische Chemie, Göttingen (Germany), 7/7/1986
Fachbereich Chemie, Oldenburg (Germany), 8/7/1986
Institut für Anorganische Chemie, Regensburg (Germany), 10/7/1986
Technischen Universität München, Garching (Germany), 11/7/1986
- 34 Composés du phosphore triplement lié
Université de Strasbourg (France), 8/12/1986
- 35-41 The diazo group in carbon, phosphorus, sulfur and transition metal chemistry : new route to highly unsaturated organic and inorganic molecules
Philipps Universität, Marburg (Germany), 1/6/1987
Gmelin Institut, Frankfurt (Germany), 2/6/1987
Anorganisch-chemisches Institut, Bonn (Germany), 3/6/1987
Fachbereich Chemie, Essen (Germany), 4/6/1987
Vrije Universiteit, Amsterdam (Netherlands), 9/6/1987
Institut für Anorganische Chemie, Frankfurt (Germany), 10/6/1987
Institut für Anorganische Chemie, München (Germany), 11/6/1987
- 42-45 Composés diazoïques α -hétéroatomiques
Université de Montpellier (France), 22/9/1987
Université de Rennes (France), 8/10/1987
Université de Nantes (France), 9/10/1987
Université de Bordeaux (France), 10/10/1987
- 46 Nitrènes et carbènes stabilisés
Université de Paris Sud, Orsay (France), 14/11/1987
- 47-50 New aspects of the chemistry of the diazo group.
University of Utah, Salt Lake City-Utah (USA), 26/5/1988
Queen's University, Kingston (Canada), 30/5/1988
Université de Montreal, Montreal (Canada), 31/5/1988
Université de Laval, Quebec (Canada), 1/6/1988
- 51 Carbenes : from transient intermediates to isolable compound
Technische Universität, München - Garching (Germany), 8/11/1988
- 52-54 Stable carbenes and nitrile-imines
Anorganisch Chemisches Institut, Saarbrücken (Germany), 30/5/1989
Fachbereich Chemie, Kaiserslautern (Germany), 1/6/1989
Max Planck Institut, Mülheim/Ruhr (Germany), 3/6/1989
- 55-59 Use of heavier main group element for stabilizing highly reactive organic molecules
Institut für Anorganische Chemie, Karlsruhe (Germany), 24/11/1989
Westfälische Wilhelms Universität, Münster (Germany), 27/11/1989
Carolo Wilhelmina Universität, Braunschweig (Germany), 29/11/1989
Institut für Anorganische Chemie, Göttingen (Germany), 30/11/1989

Institut für Organische Chemie, Erlangen-Nürnberg (Germany), 1/12/1989

- 60 Les éléments principaux en chimie organique
Université de Caen (France), 22/3/1990
- 61-62 Heteroatoms and highly reactive organic species
PennState, Pennsylvania (USA), 23/8/1991
University of Pennsylvania, Philadelphia (USA), 30/8/1991
- 63 Stable carbenes
Université d'Aix-Marseille, Marseille (France), 19/10/1991
- 64-69 Diazo compounds and their isomers
Institut für Anorganische Chemie, Bonn (Germany), 11/11/1991
Organisch-Chemisches Institut, Heidelberg (Germany), 12/11/1991
Fachbereich Chemie, Tübingen (Germany), 14/11/1991
Fakultät für Chemie, Freiburg (Germany), 15/11/1991
Anorganisch-Chemisches Institut, Aachen (Germany), 18/11/1991
Fakultät für Chemie, Bielefeld (Germany), 19/11/1991
- 70 Triple-bonded heavier main group elements
Frei Universität, Berlin (Germany), 21/11/1991
- 71 Let us play with the coordination states of phosphorus
"Graduiertenkolleg", Berlin (Germany), 22/11/1991
- 72-73 New types of low coordinated phosphorus compounds
Hiroshima University, Hiroshima (Japan), 21/1/1992
Tohoku University, Sendai (Japan), 27/1/1992
- 74-76 New aspects of the diazo group in organic and inorganic chemistry
Nat. Chem. Lab. Ind., Tsukuba (Japan), 14/1/1992
Mie University, Tsu (Japan), 23/11/1992
Tsukuba University, Tsukuba (Japan), 24/1/1992
- 77-78 New stable carbenes
ETH, Zürich (Switzerland), 3/6/92
Université de Lausanne (Switzerland), 4/6/92
- 79 Espèces hautement réactives : de la caractérisation en matrice à l'outil de synthèse à température ambiante
Université Joseph Fourier, Grenoble (France), 14/1/93
- 80 Le phosphore dans les systèmes π -liés : liaisons multiples, aromaticité et non aromaticité
Université de Montpellier, (France), 18/3/93
- 81 Aromaticity and anti-aromaticity in organic and inorganic ring systems
Institut für Anorganische Chemie, Göttingen (Germany), 30/11/1993

- 82 Nouvelles perspectives dans la chimie des azotures et des composés diazoïques
Ecole Normale Supérieure, Paris (France), 7/12/93
- 83 Nouveaux ligands phosphorés
Université de Rennes (France), 20/12/93
- 84 Taming reactive intermediates
Ecole Polytechnique de Zürich (Switzerland), 7/02/94
- 85 New phosphorus ylides
Kaiserslautern University (Germany), 16/9/94
- 86-88 Playing tricks with highly reactive intermediates. How to make them stable?
Bergen University (Norway), 10/10/94
Trondheim University (Norway), 12/10/94
Oslo University (Norway), 14/10/94
- 89-96 Synthesis and reactivity of 4- π electron 4-membered heterocycles featuring main group
element(s): antiaromatic inorganic systems?
Ecole Polytechnique de Zürich, (Switzerland), 20/1/95
Marburg University (Germany), 23/1/95
Göttingen University (Germany), 25/1/95
Berlin University (Germany), 27/1/95
Böchum University (Germany), 30/1/95
Giessen University (Germany), 31/1/95
Utrecht University (Netherland), 2/2/95
Université de Strasbourg (France), 6/2/95
- 97-98 The trimethylsilyl diazomethane.
Ljubljana University (Slovenia), 22/3/96
CNR Bologna (Italy), 25/3/96
- 99-100 New types of 4- π -electron 4-membered rings
Bologna University (Italy), 26/3/96
Florence University (Italy), 27/3/96
- 101 Cycles à 3 ou 4 chaînons et 2, 3, 4 ou 6 électrons- π
Université de Paris VI (France), 25/11/96
- 102 Que peut-on apprendre des molécules exotiques ?
Académie des Sciences, Paris (France) 4/11/96
- 103 Diazo compounds in Silicon Chemisry
National Institute of Materials and Chemical Research, Tsukuba (Japan), 3/12/96
- 104-105 New stable radicals, diradicals and carbenes
Tokyo University (Japan), 4/12/96
Kyoto University (Japan), 9/12/96

- 106-109 New aspects of phosphorus chemistry
Shiba University (Japan), 6/12/96
Kyoto University (Japan), 10/12/96
Osaka University (Japan), 11/12/96
Tsukuba University (Japan), 16/12/96
- 110 Molécules contre nature : de la curiosité intellectuelle aux applications
Université de Bourgogne et Franche-Comté, Dijon (France), 13/05/97
- 111 From exotic molecules to applied chemistry
University of Southern California, Los Angeles (USA), 15/7/97
- 112 New stable radicals, diradicals and carbenes
Bielefeld University (Germany), 13/10/97
- 113 The use of main group elements for stabilizing highly reactive organic species
Münster University (Germany), 14/10/97
- 114 New stable radicals, diradicals and carbenes
Wurzburg University (Germany), 15/10/97
- 115 New stable radicals, diradicals and carbenes
Konstanz University (Germany), 16/10/97
- 116 The use of main group elements for stabilizing highly reactive organic species
Bonn University (Germany), 17/10/97
- 117 The use of main group elements for stabilizing highly reactive organic species
Université de Bâle (Switzerland), 27/11/97
- 118 New stable radicals, diradicals and carbenes
Munich University (Germany), 28/11/97
- 119 The use of main group elements for stabilizing highly reactive organic species
Mainz University (Germany), 01/12/97
- 120 New stable radicals, diradicals and carbenes
Karlsruhe University (Germany), 02/12/97
- 121 From exotic molecules to applied chemistry (group 13 to 15 elements)
Braunschweig University (Germany), 03/12/97
- 122 Le phosphore, un élément très versatile
Université de Genève (Switzerland), 9/03/98
- 123 Aromaticité et anti-aromaticité en chimie du phosphore
Université de Genève (Switzerland), 10/03/98

- 124 Nouveaux cations et radicaux en chimie des hétéroéléments
Université de Genève (Switzerland), 11/03/98
- 125 Des molécules exotiques aux applications
Université de Genève (Switzerland), 12/03/98
- 126 Les carbènes stables
Université de Lausanne (Switzerland), 13/03/98
- 127 Aromaticity and antiaromaticity in phosphorus chemistry
ETH Zürich (Switzerland), 02/07/98
- 128 Stable carbenes: are they useful?
ETH Zürich (Switzerland), 03/07/98
- 129 New stable cations, radicals and diradicals
ETH Zürich (Switzerland), 06/07/98
- 130 What can we do with diaminoamide ligands?
ETH Zürich (Switzerland), 07/07/98
- 131 Phosphorus is useful
ETH Zürich (Switzerland), 25/08/98
- 132 Les éléments lourds principaux: des outils puissants
Université d'Orsay (France), 22/09/98
- 133 Sometimes it's phosphorus, not carbon chemistry that leads the way
Chicago University, Chicago (USA), 09/11/98
- 134 Are stable carbenes genuine carbenes ? But what is a carbene anyway?
Chicago University, Chicago (USA), 11/11/98
- 135 Biocompatible materials from super Lewis acid polymerization catalysts
Chicago University, Chicago (USA), 18/11/98
- 136 The importance of main group elements
University of Southern California, Los Angeles (USA), 19/11/98
- 137-141 Les éléments lourds principaux : des outils puissants
Université de Grenoble (France), 03/02/99
Université de Lyon (France), 04/02/99
Université de Marseille (France), 18/02/99
Université de Strasbourg (France), 12/03/99
Université de Rennes (France), 14/06/99
- 142-154 New types of bonding in main group element chemistry
Stable carbenes and related species

- From exotic molecules to applied chemistry
 Main group elements are useful
Tohoku University (Japan), 26/09/99
Kyushu University (Japan), 30/09/99
Hiroshima University (Japan), 2/10/99
Okayama University (Japan), 3/10/99
Kyoto University (Japan), 6/10/99
Kyoto Institute for Material Sciences (Japan), 7/10/99
Mie University (Japan), 8/10/99
Nara University (Japan), 10/10/99
Nagoya University (Japan), 11/10/99
Tokyo University (Japan), 13/10/99
Chiba University (Japan), 14/10/99
Tsukuba University (Japan), 15/10/99
National Institute of Materials & Chemical Research, Tsukuba (Japan), 16/10/99
- 155-156 Main group chemistry : from exotic molecules to applied chemistry
University of Pennsylvania, Philadelphia (USA), 23/03/00
University of California Riverside, Riverside (USA), 25/03/00
- 157-158 Exploiting the phosphorus trick
University of Castilla de la Mancha (Spain), 08/11/00
University of Sevilla (Spain), 09/11/00
- 159 Liaisons à un électron et différence entre liaison à deux électrons et biradicaux singulets
Institut de Recherche sur les Systèmes Atomiques Moléculaires Complexes, Université Paul Sabatier (France), 05/03/01
- 160 What is new in main group chemistry
University of California, Davis (USA), 04/09/02
- 161-162 Chemistry with and without main group element : what a difference !
University of California, Berkeley (USA), 06/09/02
University of Texas, El Paso (USA), 01/11/02
- 163 Chemistry with and without main group element : what a difference !
University of California, Los Angeles (USA), 10/04/03
- 164 Stable carbenes, diradicals and tettraradicals
Texas A&M University, College Station (USA), 10/12/2003
- 165 Stable carbenes, diradicals and tettraradicals
Rice University, Houston (USA), 11/12/2003
- 166 Stable Carbenes and Diradicals
Academie Sinica, Taipei (Taiwan) 5/12/2004

- 167 Chemistry with and without main group element: what a difference!
Taiwan National University, Taipei (Taiwan) 5/13/2004
- 168 Carbenes: Emerging Ligands for Catalysis
National Tsing Hua University, Tsing Hua (Taiwan) 5/14/2004
- 169 Carbenes: Emerging Ligands for Catalysis
Tokyo Institute of Technology, Tokyo (Japan) 5/17/2004
- 170 Stable carbenes as ligands for transition metals, and stable diradicals as building blocks for materials.
“MIT/Harvard Inorganic Seminar Series” Boston (USA) 11/17-18/2004.
- 171 Stable carbenes as ligands for transition metals, and stable diradicals as building blocks for materials.
“Lacan Lecture” University of Montreal (Canada) 11/19/2004.
- 172 Stable carbenes as ligands for transition metals, and stable diradicals as building blocks for materials.
CALTECH (USA) 11/24/2004.
- 173 Stable singlet carbenes and diradicals.
Rutgers University (USA) 6/29/2005
- 174 Stable carbenes and diradicals: From curiosities to powerful tools.
Tokyo University (Japan) October 26, 2005
- 175 New Families of Stable Cyclic Carbenes for the Preparation of Highly Active Catalysts and Low Ligated transition metals
Nagoya University (Japan) October 27, 2005.
- 176 Stable carbenes and diradicals: From curiosities to powerful tools.
Amsterdam University (Netherland) October 31, 2005
- 177 New Families of Stable Cyclic Carbenes for the Preparation of Highly Active Catalysts and Low Ligated transition metals
Lectures in Modern Chemistry Series, University of British Columbia (Canada) November 28, 2006
- 178 Stable carbenes and diradicals: From curiosities to powerful tools
University of Edmonton (Canada) November 30, 2006
- 179 New Families of Stable Cyclic Carbenes for the Preparation of Highly Active Catalysts and Low Ligated transition metals
University of Calgary (Canada) December 1, 2006

- 180 Stable carbenes can help, and even do the job of transition metals
The University of Edinburgh (Scotland) May 29, 2007
- 181 New Families of Stable Cyclic Carbenes for the Preparation of Low Ligated Transition Metals, and Highly Active Catalysts. Can a Carbene do the Job of a Metal?
The University of Durham (England) May 30, 2007
- 182-184 New trends in Group 13-15 chemistry
The University of St Andrews (Scotland) June 1 and 4, 2007
- 185 Stable carbenes can help, and even do the job of transition metals
UC San diego (USA) October 12, 2007
- 186-188 The use of stable carbenes and related ligands in catalysis: New developments (cancelled)
Michigan State (USA) April 2, 2008
University of Michigan (USA) April 3, 2008
University of Toledo (USA) April 4, 2008
- 189 Stable carbenes and bent-allenes as ligands for transition metal catalysts
UC San diego (USA) June 20, 2008
- 190 "New families of carbon-based ligands for transition metal catalysts"
Berlin University (Germany) October 22, 2008
- 191 Stable Neutral Divalent Carbon Compounds with One or Two Lone Pairs of Electrons as Strong Donor Ligands for transition metal catalysts.
Bochum University (Germany) October 23, 2008
- 192 New families of carbon-based ligands, novel catalytic reactions
UC Irvine (USA) April 3, 2009
- 193 Stable Neutral Divalent Carbon Compounds with One or Two Lone Pairs of Electrons as Strong Donor Ligands for transition metal catalysts.
UC Santa Cruz (USA) April 13, 2009
- 194 Novel families of ligands, novel catalytic reactions.
The Scripps Research Institute, La Jolla (CA), April 24, 2009.
- 195 Novel families of ligands, novel catalytic reactions (cancelled)
University of Porto Rico, May 1, 2009.
- 196 Novel families of carbon ligands, novel catalytic reactions
University of Sussex, September 4, 2009 (UK)
- 197 Novel families of carbon ligands, novel catalytic reactions
University of Strathclyde, September 9, 2009 (UK)

- 198 Novel families of carbon ligands, novel catalytic reactions
Tokyo Institute of Technology, Tokyo Nov 7, 2009 (Japan)
- 199 Novel families of carbon ligands, novel catalytic reactions
UC Santa Barbara, January 14, 2010 (USA)
- 200 Bending the rules
The University of Alabama, Tuscaloosa (USA) March 25, 2010
- 201 Novel stable non-Arduengo carbenes and related species
The University of Alabama, Tuscaloosa (USA) March 26, 2010
- 202 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
University of Aachen (Germany) April 13, 2010
- 203 Novel families of stable carbon-based L ligands: Activation of small molecules and catalysis.
Technical University of Munich (Germany) April 26, 2010
- 204 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
University of Toronto (Canada) September 17, 2010
- 205 Novel families of carbon ligands, novel catalytic reactions
University of Regensburg (Germany) October 25, 2010
- 206 Novel families of carbon ligands, novel catalytic reactions
University of Leipzig (Germany) October 27, 2010
- 207 Novel families of carbon ligands, novel catalytic reactions
University of Wurzburg (Germany) October 28, 2010
- 208 Novel stable carbenes and related species: Activation of small molecules and catalysis.
University of Heidelberg (Germany) October 29, 2010
- 209 Metal-free activation of small molecules
University of Braunschweig (Germany) November 1, 2010
- 210 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
University of Erlangen (Germany) November 2, 2010
- 211 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
University of Marburg (Germany) November 3, 2010

- 212 Novel stable carbenes and related species: Activation of small molecules and catalysis.
Max Plack Institute, Mulheim (Germany) November 5, 2010
- 213 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
University of Gottingen (Germany) November 5, 2010
- 214 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
Rutgers University (USA) March 22, 2011
- 215 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
Columbia University (USA) March 24, 2011
- 216 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
Argonne National Laboratory (USA) April 21, 2011
- 217 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
University of Chicago (USA) April 22, 2011
- 218 Novel families of carbon- and boron-based ligands, novel catalytic reactions
Academy of Sciences, Beijing (China) September 13, 2011
- 219 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
Wuhan University, Wuhan (China) September 16, 2011
- 220 Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
Shanghai Institute of Organic Chemistry, Chinese Academic Science, Shanghai (China) September 19, 2011
- 221-223 New types of bonding in Main Group Chemistry
Which carbenes and related species are stable?
Stable carbenes and related species: Powerful tools in organic and inorganic chemistry
University of Western Ontario, London, Ontario (Canada) October 17-19, 2011
- 224 Novel families of carbon- and boron-based ligands, novel catalytic reactions
Princeton University (USA) October 20, 2011
- 225 Challenging the dogma
University of California, San Diego (USA) November 21, 2011
- 226 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
MIT, Boston (USA) April 4, 2012

- 227 Novel families of carbon- and boron-based ligands, novel catalytic reactions
Indiana University, Bloomington (USA) April 25, 2012
- 228-230 How can Carbenes and related species be stable?
Stable singlet carbenes as ligands for Transition metal catalysts and as mimics for transition metal centers
Mesoionic carbenes: A new generation of stable carbon-based ligands
Frontiers in Chemical Research Lectureship, Texas A&M University, College Station (USA) October 15-17, 2012
- 231 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
Penn State (Pennsylvania) May 30, 2013
- 232 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry (MacRae Lecture).
Queen's University, Kingston (Canada) June 21, 2013
- 233 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
University of Wisconsin, Madison (USA) September 18, 2013
- 234 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
University of Oxford (England) October 14, 2013
- 235-238 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
University of Hong Kong, October 28, 2013
City University Hong Kong, October 30
Shanghai Institute of Organic Chemistry, Chinese Academic Science, Shanghai (China), October 31, 2013
Fudan University, Shanghai (China), November 1, 2013
- 239 Carbon-, nitrogen- and boron-based ligands. Applications in catalysis
ETH Zurich (Switzerland) November 19, 2013
- 240 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
University of Lyon (France) November 21, 2013
- 241 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
University of Tokyo (Japan) March 31, 2014
- 242 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
National University Singapore (Singapore) July 23, 2014

- 243 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
Northwestern University, December 10, 2014
- 244 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
CSU Northridge, April 1, 2015
- 245-249 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
Basel University (Switzerland), April 13, 2015
University of Fribourg (Switzerland), April 14, 2015
EPFL Lausanne (Switzerland), April 15, 2015
University of Geneva (Switzerland), April 16, 2015
ETH Zurich (Switzerland), April 17, 2015
- 250 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
University of Frankfurt (Germany), October 14, 2015
- 251 Stable carbenes and related species: Powerful tools in organic, inorganic and organometallic chemistry
University of Oldenburg (Germany), October 15, 2015
- 252 Stable carbenes as Powerful tools in organic, inorganic and organometallic chemistry
Inaugural Anton Burg lectureship, University of Southern California (USA), October 30, 2015
- 253 Stable carbenes and related species: Powerful tools in organic and organometallic chemistry
University of California Los Angeles (USA), January 28, 2016
- 254 From useless to useful stable carbenes
University of Rochester (USA), May 2, 2016
- 255 CAACs as powerful tools in organic, inorganic and organometallic chemistry
University of Rochester (USA), May 3, 2016
- 256 The novel generation of stable carbenes and related species
University of Rochester (USA), May 4, 2016
- 257 CAACs as powerful tools in organic, inorganic and organometallic chemistry
Cornell University (USA), May 5, 2016
- 258 The novel generation of stable carbenes and related species
Cornell University (USA), May 6, 2016

- 259 Stable carbenes as powerful tools in organic, inorganic and organometallic chemistry
University of Strathclyde, Glasgow (UK), October 12, 2016
- 260 Stable carbenes as powerful tools in organic, inorganic and organometallic chemistry
Cardiff University (UK), October 14, 2016
- 261 Stable carbenes as powerful tools in organic and organometallic chemistry
Strasbourg University (France), November 28, 2016
- 262 Stable carbenes as powerful tools in organic, main group and organometallic chemistry
Technion City, Haifa, Israel, April 24, 2017
- 263 Stable carbenes as powerful tools in organic, main group and organometallic chemistry
GDCh-colloquium in Berlin, Germany, September 14, 2017
- 264 Stable carbenes as powerful tools in organic, main group and organometallic chemistry
University of North Carolina, Chapel Hill, September 26, 2017
- 265 Stable carbenes as powerful tools in organic, main group and organometallic chemistry
University of Georgia, Athens September 28, 2017
- 266 Stable carbenes and related species as powerful tools
Tsinghua University, Beijing, China, October 25, 2017
- 267-272 Stable carbenes and related species as powerful tools in organic, inorganic and organometallic chemistry
Universidad de Sevilla, Sevilla, Spain, December 14, 2017
Universidad de Huelva, Huelva, Spain, December 15, 2017
Universidad de Castilla La Mancha, Ciudad Real, Spain, December 18, 2017
Universidad de Alcala de Henares, Alcala de Henares, Spain, December 19, 2017
Universidad de Zaragoza, Zaragoza, Spain, December 20, 2017
ICIQ, Tarragona, Spain, December 21, 2017
- 273 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
University of Utah, Salt Lake City, USA, March 29, 2018
- 274-276 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
University of Toronto, Toronto, Canada, April 25, 2018
McMaster University, Hamilton, Canada, April 26, 2018
Brock University, St Catherines, Canada, April 27, 2018

- 277 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
Wuhan Technical University, Wuhan, China, June 4, 2018
- 278 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
Renmin University of China, Beijing, China, June 5, 2018
- 279 Stable carbenes: 30 years after their discovery.
Tsinghua University, Beijing, China, June 6, 2018
- 280 Novel stable carbenes and their applications in main group and transition metal chemistry
University of Regensburg, Regensburg, Germany, June 12, 2018
- 281 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
South University of Science and Technology of China, September 11, 2018
- 282-283 How to create novel chemical objects with very basic knowledge
Tsinghua University, Beijing, China, September 12 and 13, 2018
- 284 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
Capital Normal University Beijing, China, September 14, 2018
- 285 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
Stanford University, USA, October 14, 2018
- 286 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
The University of Hong Kong, November 19, 2018
- 287 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
Sichuan University, Chengdu, China, November 22, 2018
- 288 Stable carbenes and related species as powerful tools in organic, organometallic, and inorganic chemistry
Nanjing University, Nanjing, China, November 23, 2018
- 289 Stable carbenes can do the job of metals
Ecole Polytechnique, Palaiseau, France, March 28, 2019
- 290-292 Stable carbenes as metal surrogates
Fudan University, Shanghai, China, September 2, 2019
Xiamen University, Xiamen, China, September 4, 2019

Nanjing University, Nanjing, China, September 9, 2019

- 293 Carbenes as transition metal surrogates
Neil Bartlett Memorial Lecture in Inorganic Chemistry at UC Berkeley, January 28, 2022
- 294 Stable carbenes as metal surrogates
Yale University, Silliman Lecture, March 28, 2022
- 296 Stable carbenes as metal surrogates
Boston University, Strem Lecture, March 29, 2022
- 297 Carbenes as transition metal surrogates
Aachen University, November 4, 2022
- 298 Carbenes as transition metal surrogates
Rice University, November 9, 2022
- 299 Carbenes as Powerful Transition-Metal Surrogates
Texas State University-San Marcos, March 6, 2023
- 300 Carbenes as Powerful Transition-Metal Surrogates
Texas A&M University, April 6, 2023
- 301 Carbenes as Powerful Transition-Metal Surrogates
Ningbo University (China), October 16, 2023
- 302 Carbenes as Powerful Transition-Metal Surrogates
Shanghai Institute of Organic Chemistry (China), October 17, 2023
- 303 Déshabiller le carbone. Pourquoi ?
University of Limoges (France), January 8, 2024
- 304 Carbenes as Powerful Transition-Metal Surrogates
Seoul National University (Korea), January 22, 2024
- 305 Low coordinated main group species
POSTECH at Pohang (Korea) January 25, 2024
- 306 Carbenes as Powerful Transition-Metal Surrogates
KAIST at Daejeon (Korea) January 26, 2024
- 307 Carbenes as Powerful Transition-Metal Surrogates
Technical University Dresden (Germany), February 12, 2024
- 308 Carbenes as Powerful Transition-Metal Surrogates
University of Michigan (USA), April 8, 2024

- 309 Carbenes as Powerful Transition-Metal Surrogates
University of Bordeaux (France), April 10, 2024
- 310 Carbenes as Powerful Transition-Metal Surrogates
Bern University (Switzerland), May 6, 2024
- 311 Carbenes as Powerful Transition-Metal Surrogates
ETH Zurich L. M. Venanzi Distinguished Lecture (Switzerland), May 7, 2024
- 312 Carbenes as Powerful Transition-Metal Surrogates
The University of Hong Kong (Hong Kong), July 11, 2024
- 313 Carbenes as Powerful Transition-Metal Surrogates
SUSTECH at Shengzhen (China), July 12, 2024
- 314 Carbenes as Powerful Transition-Metal Surrogates
Sun-Yat-Sen University at Guangzhou (China), July 13, 2024
- 315 Carbenes as Powerful Transition-Metal Surrogates
Tsinghua University, Beijing (China), July 18, 2024
- 316 Carbenes as Powerful Transition-Metal Surrogates
Remlin University, Beijing (China), July 19, 2024
- 317 Carbenes as Powerful Transition-Metal Surrogates
Peking University, Beijing (China), July 20, 2024
- 318 Carbenes as Powerful Transition-Metal Surrogates
LCC CNRS 50th anniversary, Toulouse (France) September 12, 2024
- 319 Carbenes as Powerful Transition-Metal Surrogates
University of Montpellier, (France) September 19, 2024
- 320 Carbenes as Powerful Transition-Metal Surrogates
University of Southern California, (USA) October 4, 2024
- 321 Carbenes as Powerful Transition-Metal Surrogates
Fudan University, (China) November 19, 2024
- 322 Carbenes as Powerful Transition-Metal Surrogates
Zhejiang University of Technology, (China) November 20, 2024
- 323 Carbenes as Powerful Transition-Metal Surrogates
Saarland University, Saarbrücken (Germany) January 6, 2025
- 324 Carbenes as Powerful Transition-Metal Surrogates
Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany) January 8, 2025

325 Carbenes as Powerful Transition-Metal Surrogates
Universität Innsbruck (Austria) January 10, 2025

RESEARCH TRAINING

Ph.D. Degrees Conferred

- 1 *J. ANCELLE* : "Photolyse et thermolyse de composés organosiliciés et germaniés. Intermédiaires à double liaison métal-carbone" (juillet 80)
- 2 *A. BACEIREDO* : "Réarrangement photochimique d'azotures organométalliques" (mars 82)
- 3 *S. MAJID* : "Stabilité et réactivité particulières de composés organophosphorés induites par le substituant 2,4,6-tri-tert-butylphényle" (octobre 83)
- 4 *F. EL ANBA* : "Réarrangements de composés organométalliques du silicium, du germanium et du phosphore" (octobre 83)
- 5 *E. OCANDO-MAVAREZ* : "Phosponitriles : Nouveaux synthons en chimie hétérocyclique" (Mars 88)
- 6 *G. SICARD* : "Analogie α, α' bis carbénoïdes - triple liaison" (juillet 88)
- 7 *A. IGAU* : "Utilisation du phosphore pour la stabilisation d'espèces à déficience électronique. Synthèse et réactivité d'un carbène stable" (juin 89)
- 8 *M. GRANIER* : "Synthèse, structure et réactivité de nitrilimines stables" (juillet 90)
- 9 *F. CASTAN* : "Apport du silicium et du phosphore dans la chimie des dérivés diazoïques et de leurs isomères nitrilimines " (septembre 91)
- 10 *H. ROLLAND* : "Polyphosphazènes à liaison Phosphore-Carbone" (octobre 91)
- 11 *J. M. SOTIROPOULOS* : "Les diazométhylènéphosphoranes" (décembre 91)
- 12 *M.P. ARTHUR* : "Synthèse et réactivité de dérivés diazoïques et de nitrilimines α -borés" (juillet 92)
- 13 *M. SOLEILHAVOUP* : "Synthèse et réactivité de phosphanyl, thiophosphanyl et phosphonioyl carbènes" (juillet 93)
- 14 *G. VENEZIANI* : "Utilisation des isomères stannylés du diazométhane dans des réactions de transfert du fragment CN_2 " (juin 94)
- 15 *E. BON* : "Utilisation de complexes amine - chlorure d'aluminium en synthèse organique" (octobre 94)
- 16 *N. DUBAU-ASSIBAT* : "Influence de la nature des substituants sur la stabilité relative des dérivés diazoïques et leurs isomères structuraux" (juin 95)

- 17 *G. ALCARAZ* : "Espèces déficientes en électrons et cycles tendus α -phosphorés" (juin 95)
- 18 *Y. CANAC* : "Le cation diphosphirénium : un cycle à trois chaînons et deux électrons π - non aromatique (juillet 96)
- 19 *G. BOUHADIR* : "Réactivité du premier phosphazide cis stable et du phosphazène correspondant. Préparation de nouveaux composés onio du phosphore" (novembre 96)
- 20 *N. EMIG* : "Nouveaux catalyseurs pour la polymérisation d'hétérocycles : synthèse d'acides de Lewis du groupe 13 possédant des ligands tridentates diamido-amines" (juillet 1997)
- 21 *O. GUERRET* : Nouveaux ligands carbéniques : 1,2,4-triazolbis(ylidène) et 1,2,4-triazoliumylidène. Utilisation de ces ligands en chimie organométallique" (décembre 97)
- 22 *M. SANCHEZ* : "Hétérocycles insaturés à 4 chaînons possédant un atome de phosphore tétracoordiné (décembre 97)
- 23 *V. PIQUET* : "Influence de substituants phosphorés sur la réactivité de 3H-diazirines, nitrilimines et 2H-diazirines (décembre 97)
- 24 *D. BOURISSOU* : "Synthèse de nouvelles espèces phosphorées hautement réactives" (janvier 98)
- 25 *S. GOUMRI-MAGNET* : « Nouvelles utilisations de dérivés organophosphorés : les ylures de phosphore, des bases fortes non nucléophiles ; les phosphinocarbenes, de véritables synthons » (décembre 1998)
- 26 *J.-L. FAURE* : « Etude des nitrilimines en solution et utilisation de ligands bisamidoamines pour la synthèse de nouveaux catalyseurs de polymérisation » (décembre 98)
- 27 *H. N'GUYEN* : « Nouveaux catalyseurs à ligands diamidoamines : synthèse et utilisation pour la polymérisation d'hétérocycles » (juillet 99)
- 28 *C. BURON* : " Les diaminocarbenes : de nouveaux ligands pour les métaux de transition. Les phosphinocarbenes : synthèse des premiers alkyl- et arylcarbenes stables" (novembre 2000)
- 29 *T. KATO* : "Le phosphore en chimie des carbenes, des carbocations et des radicaux" (5 juillet 2001)
- 30 *A. DUMITRESCU* : "Basses valences en chimie du phosphore, de l'étain et du zinc : des espèces hautement réactives, des catalyseurs de polymérisation (12 novembre 2001)
- 31 *D. AMSALLEM* : "Implication du groupement (dialkylamino)phosphino dans la stabilisation et la réactivité de phosphinocarbenes et de phosphinoaldéhydes (14 novembre 2001)
- 32 *E. DESPAGNET* : "Phosphinocarbenes : modes de stabilisation, coordination (June 20, 2002)

- 33 S. SOLE : "Carbenes singlets stables : Migration 1,2 dans les carbenes hétérocycliques et carbenes a substituant spectateur (June 24, 2002)
- 34 N. MERCERON-SAFFON : "Nouveaux aminocarbenes C-phosphorés : synthèse, caractérisation et réactivité " (June 19, 2003).
- 35 M. OTTO: "Une nouvelle approche vers des carbenes stables et des cations cyclopentadienyles" (March, 26 2004)
- 36 D. MARTIN : "Rôle du phosphore dans la stabilisation des cations et des carbènes. Synthèse de nouveaux cumulènes organophosphorés" (September 24, 2004)
- 37 X. CATTOEN : "Amino-carbenes : réarrangements originaux, complexation" (July 8, 2004)
- 38 C. LYON-SAUNIER : "Synthese et reactivite de nouveaux phosphinocarbenes : Applications en synthese organique et catalyse organometallique (May 12, 2006)
- 39 J. VIGNOLLE "Approches de complexes carbeniques heterosubstitues originaux
"New routes to stable heterosubstituted carbenes and their use as ligands for transition metals" (December 21, 2006)
- 40 J.B BOURG "Etudes de diradicaux heterocycliques" "*Studies of heterocyclic diradicals*" (April 23, 2007)
- 41 M. SONG "New synthetic routes to amino-carbenes and investigation of cyclic amino-phosphino-carbene (P-NHC) systems" (May 22, 2007)
- 42 G. FUKS "Etude de Diradicaux hétérocyclique" "*Heterocyclic Diradicals*" (November 7, 2007)
- 43 V. LAVALLO "From Alkyl(Amino) and Carbocyclic Carbenes to Bent Allenes: Synthesis, Reactivity, and Ligand Properties" (March 26, 2008)
- 44 M. ASAY "Ylides: Stabilization of Novel, Low Valent Carbon-Based Ligands with Applications in Catalysis" (February 6, 2009)
- 45 G. KUCHENBEISER "Reactivity of Bis(amino)cyclopropenylidenes (BACs) and Cyclic (Alkyl)(amino)carbenes (CAACs): Coordination Chemistry, Catalysis, and Small Molecule Activation" (August 2009)
- 46 A. DEHOPE "Synthesis of donor ligands and their applications in catalysis" (decembre 2010)
- 47 O. BACK "Stabilisation par les carbènes de fragments phosphorés paramagnétiques ou électro-déficients" (May 2011)
- 48 G. UNG "Design and Synthesis of Mesoionic carbenes" (September 2013)

- 49 *D. WEINBERGER* “Stabilization of Au(0), Cu(0) and Ag(0) complexes with cyclic (alkyl) (amino) carbenes (CAACs) and the progress towards neutral coinage metal clusters” (June 2014)
- 50 *M. R. ELLINGER* “Octet-defying molecules: Understanding the electronic properties of carbenes and isolation of a stable nitrene” (June 2014)
- 51 *D. RUIZ* “Stabilization of Highly Reactive Group 13 and 15 Species” (December 2015)
- 52 *J. MAHONEY* “Experimental and Theoretical Investigations into the Stabilization of Captodative (Amino)(Carboxy) Radicals” (January 2017)
- 53 *C. WEINSTEIN* “Development and Reactivity Studies of Highly Ambiphilic Carbenes” (February 2018)
- 54 *E. ROMERO* (USA) “Taming Carbene Copper(I)-Hydride Complexes” (December 2018)
- 55 *D. TOLENTINO* (USA) “Applications of Carbenes in Organometallic Chemistry” (July 2019)
- 56 *J. PELTIER* (USA) “Cyclic (alkyl)(amino)carbenes: from Replacing Metals to Metal Replacement (August 2020)
- 57 *G. P. JUNOR* (USA): “Oh, Where Electrons Will Go” (June 2021)
- 58 *S. YAZDANI* (Iran): “Rational Design of Ligands for Transition Metal Catalysis” (July 2021)
- 59 *F. VERMERSCH* (France): "The diverse nature of carbenes: impact of carbenes' structure on their reactivity" (July 2022)
- 59 *A. VIANNA* (USA): "Mesoionic Carbenes in Single Electron Transfer Reactions" (August 2022)
- 60 *V. T. WANG* (USA): “Reactivity Studies of Carbenes and the Development of a Novel Carbene” (August 2023)
- 61 *M. R. SERRATO* (USA): “Novel Carbene and Silicon Species for Applications in Organometallic Chemistry” (September 2023)
- 62 *J. YOON* (USA): “Novel Carbene and Silicon Species for Applications in Organometallic Chemistry” (August 2024)

Postdoctoral Associates

- 1 *P. DESROSIERS* (USA) : "Complexes métalliques α -diazotiques" (sept. 86-déc. 86)
- 2 *G. CROCCO* (USA) : "Reactivité de dérivés diazotiques sur des métaux de transition" (avril 86-mai 87)
- 3 *H. GRUTZMACHER* (RFA) : " Diazophosphines et phosphinocarbenes" (nov. 87-sept. 88)
- 4 *G. GILLETTE* (USA) : "Synthèse de carbènes stables" (mars 89-juin 90)
- 5 *D. GUYOT* (France) : "Synthèse d'acylisocyanates" (jan. 90-déc. 92)
- 6 *A. STRUBE* (RFA) : "Métaux de transition et diazos" (avril 90-sept. 91)
- 7 *K. HORCHLER* (RFA) : "Ylures mixtes bore-phosphore" (avril 90-avril 91)
- 8 *G. LABAT* (France) : "Réactivité de carbènes stables avec des boranes" (oct. 91- mai 92)
- 9 *R. REED* (Canada) : "Complexation de carbènes stables" (déc. 91-juin 93)
- 10 *J. TAJEDA* (Espagne) : "Synthèse de composés anti-aromatiques" (oct. 92-août 93)
- 11 *K. BIEGER* (RFA) : "Les composés diazotiques de l'étain" (oct. 92- oct. 93)
- 12 *M. GRANIER* (France) : "Synthèse d'acylisocyanates" (janv. 92-sept. 93)
- 13 *A. POLOZOV* (Russie) : "Nouveaux cations du phosphore" (avril 93-jan. 94)
- 14 *C. LEROUX* (France) : "Synthèse d'acylisocyanates" (août. 93-fev. 94)
- 15 *U. WECKER* (Allemagne) : "Synthèse d'azirines phosphorées" (sept. 93-sept. 94)
- 16 *P. DYER* (Angleterre) : "Nouveaux composés anti-aromatiques" (jan. 94-oct. 95)
- 17 *H. GORNITZKA* (Allemagne) : "Nouveaux composés du gallium I" (jan. 96-)
- 18 *N. FACKLER* (USA) : "Synthèse de cation silicéniums (juin-juillet 96)
- 19 *O. POLISCHUK* (Ukraine) : "Chimie de P₂" (oct. 96-déc. 97)
- 20 *M. FARKENS* (Allemagne) : "Catalyseurs de Friedel-Craft"(fév. 97-juillet 97)
- 21 *L. STELZIG* (Allemagne) : "Nouveaux catalyseurs d'hydrocyanation" (mars 97-fév. 98)
- 22 *I. COLLADO* (Espagne) : "Cycles à 3 chaînons phosphorés" (oct. 96-fév. 98)

- 23 *S. MAZIERES* (France) : "Nouveaux carbènes stables" (oct. 97-juillet 98)
- 24 *S. ITO* (Japon) : "Radical diphosphirényl" (avril 98-mars 99)
- 25 *J. BYRNE* (Irlande) : "Nouveaux acides de Lewis" (sept 98-août 99)
- 26 *E. GAVRILOVA* (Russie) : "Nouveaux carbènes stables" (nov. 99-juin 2000)
- 27 *M. STURMANN* (Allemagne) : "Cumulènes des groupes 14 et 15" (nov. 99- fév. 2000)
- 28 *D. SCHESCHKEWITZ* (Allemagne) : "Cycles aromatiques à 4 chaînons" (janv. 2000-août 2001)
- 29 *T. HAPPEL* (Allemagne) : "Nouveaux supports carbonés" (mai 2000-novembre 2001)
- 30 *A. LEMEUNE* (Russie) : "Nouveaux catalyseurs basiques utiles pour la polymérisation de polysiloxanes cycliques (mai 2000-avril 2001)
- 31 *V. RUDZEVICH* (Ukraine): "Molécules phosphorée à basse coordinence" (septembre 2000- mars 2001)
- 32 *J. KRYSLAK* (Pologne) : "Les carbènes en synthèse asymétrique" (novembre 2000- fév. 2001)
- 33 *H. AMII* (Japon) : "Carbènes stables" (décembre 2000-décembre 2001)
- 34 *R. RODRIGUEZ CURIEL* (Cuba) : "Activation du P4" (mars 2001-août 2001)
- 35 *K. KOLLISCH* (Allemagne) : "Nouveaux carbènes" (mars 2001-août 2001)
- 36 *K. MIQUEU* (France) : "Etude de nouveaux types de liaisons chimiques : approches expérimentale (diffraction des rayons X) et théorique (calculs *ab initio*)" (novembre 2001-juillet 2002)
- 37 *A. DUMITRESCU* (Roumanie) : "Polymères biodégradables de masse moléculaire faible " (décembre 2001-août 2002)
- 38 *O. DECHY-CABARET* (France) : "Encapsulation de l'apomorphine et ses dérivés dans les polymères " (décembre 2001-août 2002)
- 39 *F. BEN* (France) : "Nouveaux catalyseurs basiques utiles pour les réactions d'oligomérisation des silicones" (février 2002-janvier 2003)
- 40 *L. VRANICAR* (Slovénie) : "Encapsulation de l'adatansérine et ses dérivés dans les polymères " (avril 2002-mars 2003)
- 41 *J. KRYSLAK* (Pologne) : "Les carbènes en synthèse asymétrique" (avril 2002-juillet 2002)

- 42 *R. RODRIGUEZ CUIEL* (Cuba) : "Activation of P₄" (September 2001-April 2002)
- 43 *K. KOLLISCH* (Allemagne) : "New Stable Carbenes" (September 2001-August 2002)
- 44 *D. SCHESCHKEWITZ* (Allemagne) : "Stable Diradicals" (September 2001-October 2002)
- 45 *V. RUDZEVITCH* (Ukraine) : "Antiaromaticity" (May 2002- May 2003)
- 46 *S. CONEJERO* (Espagne) : "Stable Aminocarbenes" (May 2002- December 2004)
- 47 *A. RODRIGUEZ* (Espagne) : " Stable Diradicals " (May 2002- December 2004)
- 48 *V. GANDON* (France): " Stable Diradicals " (September 2002 – September 2003)
49. *C. PRASANG* (Germany): "Carbenes based on boron" (May 2003 – August 2005)
- 50 *H. LIANG* (Japan): "Stable carbenes" (January 2004 – December 2004)
- 51 *Y. ISHIDA* (Japan): "New Stable Diradicals" (March 2004-May 2007)
- 52 *R. JAZZAR* (France): "Heterocyclic carbenes" (January 2005-August 2006)
- 53 *J. MASUDA* (Canada) : "Activation of P₄" (september 2005-August 2007)
- 54 *R. DEWHURST* (New-Zealand): " Carbenes and catalysis " (May 2006-April 2007)
- 55 *G. FREY* (Germany): "Carbenes and catalysis " (July 2006-July 2008)
- 56 *A. OUALI* (France): "Carbenes and catalysis" (November 2006-November 2007)
- 57 *A. DYKER* (Canada): "New basic ligands" (January 2007-August 2009)
- 58 *R. KINJO* (Japan): "Cyclopropenylidenes" (April 2007-November 2011)
- 59 *E. ALDECO* (Mexico): "Abnormal carbenes" (April 2008-September 2010)
- 60 *X. ZENG* (China): "Hydroamination" (September 2007-September 2009)
- 61 *D. MENDOZA-ESPINOZA* (Mexico): "Abnormal carbenes" (September 2009-August 2011)
- 62 *G. GUISADO* (Spain): "Carbenes and catalysis" (November 2009-February 2012)
- 63 *N. LASSAUQUE* (France): "Carbenes and catalysis" (November 2009-December 2010)
- 64 *J. BOUFFARD* (Canada) "Stable radicals" (November 2009-February 2011)
- 65 *E. GIZIROGLU* (Turkey): (November 2010-June 2011)
- 66 *M. LÓPEZ GÓMEZ* (Spain): (June 2011-September 2012)

- 67 *F. DIELMANN* (Germany): (September 2011-August 2013)
- 68 *D. BEZUIDENHOUT* (South Africa): (October 2011-September 2012)
- 69 *R. KRETCHMER* (Germany): (October 2012-September 2013)
- 70 *C. MARTIN* (Canada): (October 2011-Juin 2013)
- 71 *S. YAMAZAKI* (Japan): (March 2012-November 2013)
- 72 *L. JUN* (China): (March 2013-February 2015)
- 73 *X. HU* (China): (March 2013- February 2015)
- 74 *M. POIZAT* (France): (March 2014-February 2015)
- 75 *B. CHATELET* (France): (March 2014-August 2014)
- 76 *J. CHU* (China): (April 2014-March 2016)
- 77 *D. MUNZ* (Germany): (June 2014-May 2016)
- 78 *M. M. HANSMANN* (Germany): (September 2015-July 2017)
- 79 *S. GUO* (China): (Janvier 2016-December 2017)
- 80 *E. T. GONZALEZ DE MENDIVIL* (Spain): (February 2016-January 2018)
- 81 *R. NAKANO* (Japan): (April 2016-June 2018)
- 82 *S. BAJO VELASQUEZ* (Spain): (December 2021-July 2022)
- 83 *F. MULKS* (Germany): (April 2021-April 2022)
- 84 *Y. K. LOH* (Singapore): (August 2021-June 2023)
- 85 *J. LORKOWSKI* (Poland): (Septembre 2022-present)
- 86 *M. ABDELLAOUI* (France): (February 2023-present)

Visiting Professors

- 1 *Pr. K. B. DILLON* (United Kingdom) : "Phosphore hypervalent" (oct. 86-mai 87)
- 2 *Pr. C. WENTRUP* (Australia) : "Nitrilimines" (sept. 92-jan. 93)
- 3 *Pr. C. REED* (Canada) : "Synthèse de silicéniums stables (juin 96)
- 4 *Pr. J. MICHL* (USA) : "Physico-chimie des carbènes (février 99)
- 5 *Pr. J. RIGBY* (USA) : « Carbènes nucléophiles » (sept-nov. 99)
- 6 *Pr. V. ROMANENKO* (Ukraine) : "Hétérocycles à visée vétérinaire" (sept 98-)
- 7 *Pr. W.W. SCHOELLER* (Allemagne) : "Approche théorique des carbènes" (août/septembre 2000)
- 8 *Pr. W. NAKANISHI* (Japon) : "Hypervalence du phosphore" (septembre 2000)
- 9 *Pr. A. DE MEIJERE* (Allemagne) : "Cyclopropanation" (octobre 2000)
- 10 *Pr. W. SCHOELLER* (Allemagne) : "Méthodes modernes de la chimie quantique et espèces hautement réactives" (mars 2002)
- 11 *Pr. K. LAMMERSTMA* (Hollande) : "Chimie physique et espèces hautement réactives" (mai 2005)
- 12 *Pr. W. SCHOELLER* (Allemagne) : "Méthodes modernes de la chimie quantique et espèces hautement réactives" (sept-oct 2005)
- 13 *Pr. D. STEPHAN* (Canada): (Nov-Dec 2011)
- 14 *Pr. M. SCHEER* (Germany): (April-May 2017)

PRESENT COLLABORATORS

. CNRS Research Associates

- 1 Michele SOLEILHAVOUP (France) September 2001-present
- 2 Mohand MELAIMI (France) October 2006-present
- 3 Rodolphe JAZZAR (France) December 2014-present

. Postdoctoral Associates

- 1 Jan LORKOWSKI (Poland): (Septembre 2022-present)
- 2 Mehdi ABDELLAOUI (France): (February 2023-present)

. Graduate Students

- 1 Alexis DAY (September 2020-present)
- 2 Patrick YORKGITIS (September 2020-present)
- 3 Joseph YOON (September 2020-present)
- 4 Levan GOJASHVILI (September 2022-present)
- 5 Wenyi DONG (September 2024-present)

. Undergraduate Students

- 1 Daniel CHAN (January 2023-present)
- 2 Aarya PATEL (May 2024-present)
- 3 Paolo ALVAREZ (October 2024-present)

PAST COLLABORATORS (in the US 2001-2024) AND PRESENT POSITION

. CNRS Research Associates at UCR and UCSD

- 1 Yves CANAC (CR1): November 2001-April 2006
Present: Directeur de Recherche CNRS (UPR 8241, Toulouse)
- 2 Huy NGOC HOA TRAN (DR2): September 2008- August 2009
Present: Deceased
- 3 David MARTIN (CR1): January 2010-July 2014
Present: Directeur de Recherche CNRS (Universite Grenoble)

. Post-Doctoral Associates at UCR and UCSD

- 1 David SCHESCHKEWITZ (Germany, Humboldt Fellowship): Sept. 2001-October 2002
Present: Krupp-Chair of General and Inorganic Chemistry, Saarland University, Campus Dudweiler (Germany)
- 2 Valentyn RUDZEVITCH (Ukraine): May 2002- May 2003
Present: Lecturer (Johannes Gutenberg Universität, Mainz)
- 3 Salvador CONEJERO (Spain, Spanish Fellowship): May 2002- December 2004
Present: Research Scientist CSIC, Instituto de Investigaciones Químicas (Sevilla, Spain)
- 4 Amor RODRIGUEZ (Spain, Spanish Fellowship): May 2002- December 2004
Present: Research Scientist CSIC, Instituto de Investigaciones Químicas (Sevilla, Spain)
- 5 Vincent GANDON (France): September 2002 – September 2003
Present: Professor (University of Paris-Orsay)
- 6 Carsten PRASANG (Germany, Humboldt Fellowship): 5/2003-9/2005
Present: Senior Researcher, Saarland University (Germany)
- 7 Hongze LIANG (China): January 2004 – December 2004
Present: Professor (University of Nottingham-Ningbo)
- 8 Yutaka ISHIDA (Japan, JSPS Fellowship): March 2004-March 2007
Present: Associate Professor (Tokyo Institute of Technology)
- 9 Rodolphe JAZZAR (France): January 2005-August 2006
Present: Directeur de Recherche CNRS (UMI UCSD/CNRS, San Diego)
- 10 Jason MASUDA (Canada, NSERC Fellowship): September 2005-August 2007
Present: Professor (StMary's University, Halifax)
- 11 Ryan DEWHURST (New Zealand): February 2006-march 2007
Present: Senior Scientist (Würzburg University)
- 12 Guido FREY (Germany, Humboldt Fellowship): July 2006-July 2008
Present: General Management, OXEA GmbH, (Oberhausen, Germany)
- 13 Armelle OUALI (France, Lavoisier Fellowship): November 2006-November 2007
Present: Directeur de Recherche CNRS (UPR 8241, Toulouse)
- 14 Adam DYKER (Canada, NSERC Fellowship): January 2007-August 2009
Present: Professor (University of New Brunswick)
15. Xiaoming ZENG (China): September 2007-September 2009
Present: Professor, Xi'an Jiaotong University (XJTU), P. R. China
- 16 Eugenia ALDECO (Mexico): April 2008-September 2010
Present: Research Scientist (Toluca, Estado de México)

- 17 Nicolas LASSAUQUE (France): (November 2009-December 2010)
Present: Entrepreneur (Paris)
- 18 Emrah GIZIROGLU (Turkey): November 2010-June 2011
Present: Professor (University of Adnan Menderes, Turkey)
- 19 Daniel MENDOZA-ESPINOZA (Mexico): September 2009-August 2011
Present: Professor (UNAM, Mexico)
- 20 Rei KINJO (Japan): April 2007-November 2011
Present: Professor (Nanyang University, Singapore)
- 21 Jean BOUFFARD (Canada): November 2009-February 2011
Present: Professor (Ewha Womans University, Seoul, Korea)
- 22 Gregorio GUISTADO-BARRIOS (Spain): (November 2009-February 2012)
Present: Personal investigador, Universitat Jaume I of Castelló (Spain)
- 22 Maria LÓPEZ GÓMEZ (Spain): (June 2011-September 2012)
Present: Post-Doc, University of Pretoria (South Africa)
- 23 Fabian DIELMANN (Germany): (September 2011-August 2013)
Present: Professor, University of Vienna, (Austria)
- 24 Daniela BEZUIDENHOUT (South Africa): (October 2011-September 2012)
Present: Associate Professor, University of the Witwatersrand (South Africa)
- 25 Robert KRETCHMER (Germany): (October 2012-September 2013)
Present: Professor, University of Ulm, Germany
- 26 Caleb MARTIN (Canada): (October 2011-June 2013)
Present: Professor, Baylor University (Waco, Texas)
- 27 Liqun JIN (China): (March 2013-February 2015)
Present: Senior Researcher, Zhejiang University of Technology, China
- 28 Xingbang HU (China): (March 2013- February 2015)
Present: Professor, University of Nanjing (China)
- 29 Jiaxang CHU (China): (April 2014-March 2016)
Present: Associate Professor, Chinese Academy of Sciences, China
- 30 Dominik MUNZ (Germany): (June 2014-May 2016)
Present: Professor Saarland University, Germany
- 31 Max M. HANSMANN (Germany): (September 2015-August 2017)
Present: Professor, T. U. Dortmund (Germany)
- 32 Ryo NAKANO (Japan): (April 2016-June 2018)
Present: Assistant Professor, Nagoya University (Japan)
- 33 Eder TOMAS GONZALEZ DE MENDIVIL (Spain): (February 2016-January 2018)
Present: Charge de Recherche CNRS, Grenoble (France)
- 34 S. BAJO VELASQUEZ (Spain): (December 2021-July 2022)
Present: Research Scientist CSIC, Instituto de Investigaciones Químicas (Sevilla, Spain)
- 35 F. MULKS (Germany): (April 2021-April 2022)
Present: Assistant Professor, RWTH Aachen University (Germany)
- 36 Y. K. LOH (Singapore): (August 2021-June 2023)
Present: Research Scientist A (Singapore)*

. Graduate Students from UCR and UCSD

1. Xavier CATTOEN (France) (10/2001- 9/2004)
Present: Charge de Recherche CNRS, (Grenoble University)
- 2 Jean-Baptiste BOURG (France): 12/2003-8/2006
Present: Research Chemist, (Materia Inc, Pasadena, CA)
- 3 Joan VIGNOLLE (France): 1/2003-12/2005
Present: Charge de Recherche CNRS, (Bordeaux University)

- 4 Gade FUCKS (France): 1/2004-12/2006
Present: Assistant Professor (Strasbourg University)
- 5 Maoying SONG (China): 9/2002-6/2007
Present: Project Leader, The Shepherd Chemical Company
- 6 Matt ASAY (USA): 10/2003-2/2009
Present: Assistant Professor (UNAM, Mexico)
- 7 Vincent LAVALLO (USA) 10/2005-6/2008
Present: Professor (University of California, Riverside)
- 8 Alan DEHOPE (USA) 9/2006-12/2010
Present: Senior Scientist (Livermore National Laboratory)
- 9 Glenn KUCHENBEISER: 9/2007-8/2009
Present: Research Scientist, Air Liquide (Wilmington)
- 10 Olivier BACK (France): 10/2007-5/2011
Present: Research Scientist, Rhodia Inc. (Lyon, France)
- 11 Gael UNG (France): 9/2009-9/2013
Present: Associate Professor, University of Connecticut (USA)
- 12 David WEINBERGER (USA): 9/2009-6/2014
Present: Staff Scientist, BASF Corporation, Pennsylvania, USA
- 13 Martin ELLINGER (France); 9/2009-9/2015
Present: Scientific Analyst, Morrison & Foerster LLP, Palo Alto (USA)
- 14 David RUIZ (USA): 9/2009-12/2015
Present: Senior Chemist, Behr Process Corporation (USA)
- 15 Janell MAHONEY (USA): 9/2011-1/2017
Present: High School teacher, Reno (USA)
- 16 Cory WEINSTEIN (USA): 9/2012-2/2018
Present: Instrument Scientist, Intel Corp. (USA)
- 17 Erik ROMERO (USA) (9/2014-12/18)
Present: Assistant Professor, UC San Diego (USA)
- 18 Daniel TOLENTINO (9/2014-7/2019)
Present: Instrument Scientist, Intel Corp. (USA)
- 19 Jesse PELTIER (9/2015-7/2020)
Present: Assistant Professor, Northeastern University, Boston (USA)
- 20 Glen JUNOR (9/2017-7/2021)
Present: Program Manager, Public Sector at Sublime Systems (Somerville, MA)(USA)
- 21 Sima YAZDANI (10/2017-7/2021)
Present: Senior Scientist Pacific Biosciences, San Diego
- 22 Francois VERMERSCH (9/2017-6/2022)
Present: Research Scientist, Inception Therapeutics, San Diego, CA
- 22 Adam VIANNA (9/2017-8/2022)
Present: Senior Process Engineer, ASM America, Phoenix, Arizona
- 24 Melinda SERRATO (9/2017-12/2023)
Present: Post-doc, University of Strasbourg (France)
- 25 Victor Wang (9/2017-8/2023)
Present: Process Engineer, Tapei (Taiwan)
- 26 Joseph Yoon (9/2019-8/2024)
Present: Technology Development Engineer, Intel Corp., Oregon

CONTRACTS AND GRANTS IN THE US

(Departmental Equipment Grants are not included)

- 1 Unrestricted
 UCR
 \$ 1,000,000 direct cost

- 2 Phosphorus promoted rearrangements of cationic to anionic centers: En route to original
 cations and anions
 ACS-PRF (38192-AC4), July 2002 - June 2004
 \$ 80,000 direct cost

- 3 Stable localized 1,3-diradicals based on boron and heavier main group elements
 NSF (CHE-0213510), August 2002 - July 2005
 \$ 400,000 total cost

- 4 gift
 Fabre&Kramer Pharmaceutical Company
 \$ 20,000

- 5 New routes to stable carbenes
 RHODIA Inc. (000698-003), July 2003 - June 2004
 \$ 81,000 total cost

- 6 New transition metal complexes for homogeneous catalysis
 RHODIA Inc. (000698-004), July 2003 - June 2004
 \$ 64,000 total cost

- 7 New materials based on group 13 and group 15 element containing heterocycles
 RHODIA Inc. (000698-005), November 2003 – October 2004
 \$ 64,000 total cost

- 8 Stable diradicals: New chemical reagents
 RHODIA Inc. (000698-006), November 2003 – October 2006
 \$ 192,000 total cost

- 9 Unrestricted
 UCR
 \$ 500,000 direct cost (November 2004 – October 2009)

- 10 Transition Metal Complexes with new carbenes ligands for coupling reactions and
 asymmetric catalysis
 RHODIA Inc. (000698-007), November 2004 – October 2005
 \$ 69,000 total cost

- 11 Three dimensional cations of group 14 elements
 UC MEXUS, July 2004 – June 2006
 \$ 10,000 direct cost (for UCR)

- 12 Pd-catalyzed coupling reactions
RHODIA Inc. (000698-008), March 2005 – February 2006
\$ 69,000 total cost
- 13 Stable localized 1,3-diradicals based on boron and heavier main group elements
NSF (CHE-0518675), August 2005 - July 2008
\$ 435,000 total cost
- 14 Pd- and Cu catalyzed coupling reactions
RHODIA Inc. (000698-009), November 2005 – October 2006
\$ 70,000 total cost
- 15 Catalytic CH-activation
RHODIA Inc. (000698-010), January 2006 –December 2008
\$ 210,000 total cost
- 16 New tunable stable carbenes as organic catalysts
RHODIA Inc. (000698-011), March 2006 – February 2007
\$ 70,000 total cost
- 17 Optimization of the design of stable CAACs and their use as ligands for transition metal based catalysts
RHODIA Inc. (000698-012), January 2007 – December 2007
\$ 72,000 total cost
- 18 Activation of small molecules with stable carbenes
RHODIA Inc. (000698-013), Mars 2007 – February 2008
\$ 72,000 total cost
- 19 Stable Carbenes: Emerging Ligands for Catalysis
NIH (R01 GM 68825), August 2005 – June 2009
\$ 848,781 total cost
- 20 P4 Activation
RHODIA Inc. (000698-013), January 2008 – Decembre 2011 2008
\$ 300,000 total cost
- 21 Stabilization of Neutral Divalent CarbonCompounds with One or Two Lone Pairs of Electrons: En Route to Strong Donor Ligands
NSF (CHE- 0808825), July 2008 – June 2011
\$ 444,000 total cost
- 22 New Carbon-based Ligands for Hydroamination and olefin metathesis
NIH (R01 GM 68825), August 2009 – June 2013
\$ 1,505,288 total cost

- 23 Transition-Metal-Catalyzed Hydroamination of Non-Activated Carbon-Carbon Multiple Bonds with Ammonia.
DOE (DE-FG02-09ER16069), September 2009 – August 2012
\$ 450,000 total cost
- 24 International Collaboration in Chemistry: Carbenes as Stabilizing and Activating Agents in Boron, Carbon and Phosphorus Chemistry
NSF (CHE-0924410), September 2009 – August 2012
\$ 450,000 total cost
- 25 Novel types of stable carbenes and their applications
NSF (CHE-1112133 and CHE-1316956), July 2011 – June 2014
\$ 444,000 total cost
- 26 Unrestricted
UCSD
\$ 1,800,000 direct cost
- 27 Ammonia and hydrazine: Transition-metal catalyzed hydroamination and metal-free catalyzed functionalization
DOE (DE-FG02-13ER16370), November 2012 – October 2015
\$ 465,000 total cost
- 28 Stable Carbenes and Silylenes. Synthesis, Reactivity and Activation of Small Molecules. Experiment and Theory
US.-israel binat'l science foundation (BSF) (2012184), January 2014 – December 2017
\$ 214,800 total cost
- 29 Interplay between stable carbenes and neutral group-13 element nucleophiles, organic radicals, and strong bases
NSF (CHE-1359809), July 2014 – June 2017
\$ 480,000 total cost
- 30 From Stable Carbenes to Nano-Electronic Switches
French American Cultural Exchange; Partner University Fund, September 2014 – June 2019
\$ 150,000 total cost
- 31 Ammonia and hydrazine: Transition-metal catalyzed hydroamination and metal-free catalyzed functionalization
DOE (DE-FG02-13ER16370), November 2016 – October 2019
\$ 500,000 total cost
- 32 Collaboration UCSD-E2P2L
SOLVAY Inc, December 2016 – November 2019
\$ 300,000 total cost

- 33 Stable synthetic equivalents of the monophosphorus anion (P⁻): a clean substitute for PC13
NSF (CHE-1661518), July 2017 – June 2020
\$ 495,000 total cost
- 34 Collaboration UCSD-E2P2L
SOLVAY Inc, March 2019 – July 2021
\$ 100,000 total cost
- 35 Novel types of stable carbene for transition metal and metal-free catalysis
DOE (DE-FG02-13ER16370), July 2019 – June 2022
\$ 550,000 total cost
- 36 Mesoionic compounds: A novel family of organocatalysts
ACS-PRF (60776-ND1) 12/2019-8/2022
\$ 120,000 total cost
- 37 Mono-coordinate carbon, boron, and phosphorus species
NSF (CHE-1954380), July 2020 – June 2023
\$ 510,000 total cost
- 38 Stable carbenes as transition metal catalyst surrogates
DOE (DE-SC0009376), September 2022 – August 2025
\$ 550,000 total cost
- 39 Unleashing mesoionic carbene-derived super-reductants to overcome the limitations of NHC-oxidative organocatalysis without a co-catalyst
NSF (CHE-2153475), September 2022 – August 2025
\$ 525,000 total cost
- 40 Collaboration UCSD-E2P2L
SOLVAY Inc, January 2023 – January 2026
\$ 269,385 total cost
- 41 Highly electron-deficient carbon, boron and silicon compounds
NSF (CHE-2246948), July 2023 – June 2026
\$ 550,000 total cost