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Scientific Summary

h-index: 24

I10-index: 35

• Publications	**46**	Oral Presentations	**22** (15 invited)
• Book Chapter	**2**	Poster Presentations	**13**
• Patents	**1**		

I - Publications

1. Tolentino, D., Neale, S. Isaac, C., Macgregor,* S., Whittlesey,* M., Jazzar,* R., Bertrand,* G. "Reductive Elimination at Carbon under Steric Control" *J. Am. Chem. Soc.* **2019**, *in press*
2. Hamze, R., Shi, S., Kapper, S. C., Sylvinson D., Ravinson, M., Estergreen, L., Jung, M.C., Tadle, A. C., Haiges, R., Djurovich, P. I., Peltier, J. L., Jazzar, R., Bertrand, G., Bradforth, S. E., Thompson,* M. E. "Quick-Silver" from a Systematic Study of Highly Luminescent, Two-Coordinate, d^{10} Coinage Metal Complexes" *J. Am. Chem. Soc.* **2019**, *141*, 8616. (Link)
3. Junor, G. P., Romero, E. A., Chen, X., Jazzar,* R., Bertrand,* G. "Readily Available Primary Aminoboranes as Powerful Reagents for Aldimine Synthesis" *Angew. Chem. Int. Ed.* **2019***, 58*, 2875. **VIP** (Link)
4. Hamze, R., Peltier, J. L., Sylvinson, D. Jung, M., Cardenas,J. Haiges, R., Soleilhavoup, M., Jazzar, R., Djurovich, P. I., Bertrand, G., Thompson,* M. E. "Neutral linear carbene-Cu(I) complexes with microsecond luminescence at >99% quantum efficiency" *Science* **2019**, *363*, 601. (Link) **"Highlighted in 5 news outlets"**
5. Regnier, R., Romero, E.; Molton, F., Jazzar, R., Bertrand,* G, Martin,* D. "What are the Radical Intermediates in Oxidative N-Heterocyclic Carbene Organocatalysis?" *J. Am. Chem. Soc.* **2019**, *141*, 1109 (Link)
6. Nakano, R., Jazzar, R., Bertrand,* G. "A crystalline monosubstituted carbene" *Nature Chem.* **2018**, *10*, 1196. (Link) **"Highlighted in Chemistry World"** (Link)
7. Romero, E. A., Zhao, T. X., Hu,* X. B., Wu, Y. T., Jazzar,* R., Bertrand,* G. "Tandem copper hydride–Lewis pair catalysed reduction of carbon dioxide into formate with dihydrogen" *Nature Catal.* ***2018****, 1, 743. (Link)* **"Highlighted in Nature Catal."** (Link)
8. Weinstein, C. M., Junor, G. P. Tolentino, D. Jazzar, R., Melaimi, M. Bertrand,* G. "Highly Ambiphilic Room Temperature Stable Six-Membered Cyclic (Alkyl)(amino)carbenes" *J. Am. Chem. Soc.* ***2018****, 140, 9255. (Link)*
9. Mahoney, J. K., Regnier, R., Romero, E., Molton, F., Royal, G., Jazzar, R., Martin,* D., Bertrand,* G. " The serendipitous discovery of a readily available redox-bistable molecule derived from cyclic(alkyl)(amino)carbenes" *Org. Chem. Front.* **2018**, *5*, 2073. (Link)
10. Hamze, R, Jazzar, R., Soleilhavoup, M., Djurovich, P. E., Bertrand,* G. Thompson,* M. E. "Phosphorescent 2-, 3- and 4-coordinate cyclic (alkyl)(amino) carbene (CAAC)Cu(I) complexes" *Chem. Comm.* **2017**, *53*, 9008. (Link)
11. Tomàs-Mendevil, E. Hansmann, M. M., Weinstein, C., Jazzar, R., Melaimi, M, Bertrand,* G. "Bicyclic (Alkyl)(amino)carbenes (BICAACs): Stable Carbenes More Ambiphilic than CAACs" *J. Am. Chem. Soc.*, **2017**, *139*, 7753. (Link)
12. Melaimi, M., Jazzar, R., Soleilhavoup, M., Bertrand,* G. "Cyclic(Alkyl)(amino)carbenes (CAACs): Recent Developments" *Angew. Chem. Int. Ed.*, **2017**, *56*, 10056. (Link)
13. Romero, E., Olsen, P., Jazzar, R., Soleilhavoup, M., Bertrand,* G. "Spectroscopic Evidence for a Monomeric Copper(I) Hydride and Crystallographic Characterization of a Monomeric Silver(I) Hydride" *Angew. Chem. Int. Ed.*, **2017**, *56*, 4024. (Link) "**Metal Hydride: Hot paper**"

14. Hansmann, M. M., Liu, L., Ruiz, D., Jazzar, R., Bertrand,* G. "(Phosphanyl)phosphaketenes as building blocks for novel phosphorus heterocycles" *Chem. Sci.* **2017**, *8*, 3720. (*Link*)
15. Mahoney, J. Jazzar, R., Martin, D.,* Bertrand,* G. "The Advantages of Cyclic Over Acyclic Carbenes To Access Isolable Capto-Dative C-Centered Radicals" *Chem. Eur. J.* **2017**, *23*, 6206. (*Link*)
16. Romero, E., Jazzar, R., Bertrand,* G. "Copper-catalyzed dehydrogenative borylation of terminal alkynes with pinacolborane" *Chem. Sci.* **2017**, *8*, 165. (*Link*)
17. Romero, E., Jazzar, R., Bertrand,* G. "(CAAC)CuX-catalyzed hydroboration of terminal alkynes with pinacolborane directed by the X-ligand" *J. Organomet. Chem.* **2017**, *829,* 11. (*Link*)
18. Goutierre, A. S., Trinh, H. V., Larini, P., Jazzar, R., Baudoin,* O. "Comparative Structural Analysis of Biarylphosphine Ligands in Arylpalladium Bromide and Malonate Complexes" *Organometallics*, **2017**, *36*, 129. (*Link*)
19. Romero, E., Peltier, J., Jazzar, R., Bertrand,* G. "Catalyst-free dehydrocoupling of amines, alcohols, and thiols with pinacol borane and 9-borabicyclononane (9-BBN)" *Chem. Comm.* **2016**, *52*, 10563. (*Link*)
20. Hansmann, M. M., Jazzar, R., Bertrand,* G. "Singlet (Phosphino)phosphinidenes are Electrophilic" *J. Am. Chem. Soc.* **2016**, *138*, 8356. (*Link*)
21. Chu, J., Munz, D., Jazzar, R., Melaimi, M., Bertrand,* G. "Synthesis of Hemilabile Cyclic (Alkyl)(amino)carbenes (CAACs) and Applications in Organometallic Chemistry" *J. Am. Chem. Soc.* **2016**, *138*, 7884. (*Link*)
22. Peltier, J., Jazzar, R., Melaimi, M. Bertrand,* G. "Ancillary ligand-free copper catalysed hydrohydrazination of terminal alkynes with NH_2NH_2" *Chem. Comm.* **2016**, *52*, 2733. (*Link*)
23. Nella, N., Parker, E., Hitze, J., Larini,* P., Jazzar,* R**.** Baudoin, O. "Efficient Pd-Catalyzed Allene Synthesis from Alkynes and Aryl Bromides through an Intramolecular Base-Assisted Deprotonation (iBAD) Mechanism" *Chem. Eur. J.*, **2014**, *20,* 13272. (*Link*)
24. Janody, S., Jazzar, R., Comte, A., Holstein, P. M., Vors, J.-P., Ford, M. J., Baudoin,* O. "Synthesis of 1-Indanols and 1-Indanamines by Intramolecular Palladium(0)-Catalyzed C(sp^3)-H Arylation: Impact of Conformational Effects. *Chem. Eur. J.*, **2014**, *20*, 11084. (*Link*)
25. Aspin, S., López-Suárez, L., Larini, P., Goutierre, A.-S., Jazzar, R., Baudoin,* O. "Palladium-Catalyzed beta-Arylation of Silyl Ketene Acetals and Application to the Synthesis of Benzo-Fused δ-Lactones" *Org. Lett.* **2013**, *15*, 5056. (*Link*)
26. Aspin, S., Goutierre, A.-S., Larini, P., Jazzar, R., Baudoin,* O. "Synthesis of aromatic α-amino esters: Pd-catalyzed long-range arylation of primary C(sp^3)–H bonds" *Angew. Chem. Int. Ed.* **2012**, *51*, 10808. (*Link*) "**Highlighted in Synfacts 2013**, 81" (*Link*)
27. Sofack-Kreutzer, J., Martin, N., Renaudat, A., Jazzar, R.,* Baudoin, O. "Synthesis of hexahydroindoles by intramolecular C(sp^3)-H alkenylation - Application to the synthesis of the core of aeruginosins" *Angew. Chem. Int. Ed.* **2012**, *51*, 10399. (*Link*)
28. Davi, M., Comte, A., Jazzar, R., Baudoin,* O. *Org. Synth.,* **2012**, *89*, 510. (*Link*)
29. Martin, N. Pierre, C. Davi, M., Jazzar, R., Baudoin,* O. "Diastereo- and Enantioselective Intramolecular C(sp^3)-H Arylation for the Synthesis of Fused Cyclopentanes" *Chem. Eur. J.*, **2012**, 4480. (*Link*) "**Highlighted in Synfacts 2012**, 755" (*Link*)
30. Larini, P., Kefalidis, C. E., Jazzar, R., Renaudat, A., Clot, E. and Baudoin,* O. "On the Mechanism of the Palladium-Catalyzed β-Arylation of Ester Enolates" *Chem. Eur. J.*, **2012**, *18*, 1932. (*Link*)
31. Renaudat, A., Jean-Gérard, L., Jazzar, R., Kefalidis, C. E., Clot, E., Baudoin,* O. "Palladium-Catalyzed beta Arylation of Carboxylic Esters" *Angew. Chem. Int. Ed.*, **2010**, *49*, 7261. (*Link*) **"VIP - Highlighted in Synfacts 2010,** 1409**"** (*Link*)
32. Jazzar, R., Hitce, J., Renaudat, A., Sofack-Kreutzer, J., Baudoin,* O. "Functionalization of Organic Molecules by Transition-Metal-Catalyzed C(sp^3)-H Activation" *Chem. Eur. J.*, **2010**,*16*, 2654. (*Link*)
33. Chantler, V.L., Chatwin, S.L., Jazzar, R.F.R., Mahon, M.F.; Saker, O., Whittlesey,* M.K. "Stoichiometric and catalytic reactivity of the N-heterocyclic carbene ruthenium hydride complexes Ru(NHC)(L)(CO)HCl and Ru(NHC)(L)(CO) H(η_2-BH_4) (L = NHC, PPh_3)" *Dalton Trans.* **2008**, *19*, 2603. (*Link*)

34. Brinkmann, Y., Madhushaw, R.J., Jazzar, R., Bernardinelli, G. Kuendig,* E. P. “Chiral ruthenium Lewis acid-catalyzed nitrile oxide cycloadditions” *Tetrahedron,* **2007**, *63*, 8413. (*Link*)
35. Jazzar, R., Dewhurst, R.D., Bourg, J.-B., Donnadieu, B., Canac, Y., Bertrand,* G. “Intramolecular "hydroiminiumation and -amidiniumation" of alkenes: A convenient, flexible, and scalable route to cyclic iminium and imidazolinium salts” *J. Org. Chem.,* **2007**, *72*, 3492. (*Link*)
36. Jazzar, R., Dewhurst, R.D., Bourg, J.-B., Donnadieu, B., Canac, Y., Bertrand,* G. “Intramolecular "hydroiminiumation" of alkenes: Application to the synthesis of conjugate acids of cyclic alkyl amino carbenes (CAACs)” *Angew. Chem., Int. Ed.* **2007**, *46*, 2899. (*Link*)
37. Jazzar, R., Liang, H., Donnadieu, B. Bertrand,* G. “A new synthetic method for the preparation of protonated-NHCs and related compounds” *J. Organomet. Chem.* **2006**, *691*, 3201. (*Link*)
38. Jazzar, R.F.R., Varrone, M. Burrows, A.D., Macgregor, S.A., Mahon, M.F.; Whittlesey,* M.K, “Synthesis and isomerisation of two metallated N,O-complexes of ruthenium: Models for the Murai reaction” *Inorganica Chimica Acta,* **2006**, *359*, 815. (*Link*)
39. Chatwin, S.L., Davidson, M.G., Doherty, C., Donald, S.M., Jazzar, R.F.R., Macgregor, S.A., McIntyre, G.J., Mahon, M.F., Whittlesey,* M.K. “H-X bond activation via hydrogen transfer to hydride in ruthenium N-heterocyclic carbene complexes: Density functional and synthetic studies” *Organometallics* **2006**, *25*, 99. (*Link*)
40. Kumar, P.G.A., Pregosin, P.S., Vallet, M., Bernardinelli, G., Jazzar, R.F., Viton, F., Kundig,* P.E. “Toward an understanding of the anion effect in CpRu-based Diels-Alder catalysts via PGSE-NMR measurements” *Organometallics*, **2004**, *23*, 5410. (*Link*)
41. Edwards, M.G.; Jazzar, R.F.R.; Paine, B.M.; Shermer, D.J.; Whittlesey,* M.K.; Williams,* J.M.J.; Edney, D.D. “Borrowing hydrogen: a catalytic route to C-C bond formation from alcohols” *Chem. Comm.* **2004**, 90. (*Link*)
42. Chatwin, S. L.; Diggle, R. A.; Jazzar, R. F.R.; MacGregor, S. A.; Mahon, M. F.; Whittlesey,* M. K. “Structure, reactivity, and computational studies of a novel ruthenium hydrogen sulfide dihydride complex” *Inorg. Chem.* **2003**, *42*, 7695. (*Link*)
43. Chilvers, M.J.; Jazzar, R.F.R.; Mahon, M.F.; Whittlesey,* M.K. “Reversible C-H bond activation reactions of the N-heterocyclic carbene ligands in $Ru(Ph_2PCH_2CH_2CH_2PPh_2)(IMes)(CO)H_2$ and $Ru(Ph_2AsCH_2CH_2PPh_2)(IMes)(CO)H_2$ (IMes=1,3-dimesityl-1,3-dihydro-2H-imidazol-2-ylidene)” *Adv. Synth. & Catal.* **2003**, *345*, 1111. (*Link*)
44. Jazzar, R.F.R.; Bhatia, P.H.; Mahon, M.F.; Whittlesey,* M.K. “N-heterocyclic carbene stabilized trans-dihydrido aqua and ethanol complexes of ruthenium: Precursors to complexes with Ru-heteroatom bonds” *Organometallics* **2003**, *22*, 670. (*Link*)
45. Jazzar, R.F.R.; Macgregor, S.A.; Mahon, M.F.; Richards, S.P.; Whittlesey,* M.K. “C-C and C-H bond activation reactions in N-heterocyclic carbene complexes of ruthenium” *J. Am. Chem. Soc.* **2002**, *124*, 4944. (*Link*)
46. Jazzar, R.F.R.; Mahon, M.F.; Whittlesey,* M.K. “Synthesis and X-ray structural characterization of $Ru(PPh_3)_3(CO)(C_2H_4)$ and $RuH(o\text{-}C_6H_4C(O)CH_3)(PPh_3)L$ (L = PPh_3, CO, DMSO): Ruthenium complexes with relevance to the Murai reaction” *Organometallics* ***2001***, *20*, 3745. (*Link*)

Book Chapter

1. Jean-Gérard, L., Jazzar, R. Baudoin, O. "C–H Bond Alkylation (including Hydroarylation of Alkenes)”, **2013**, Metal-Catalyzed Single Bond Construction, *Edited Willey VCH*.
2. Jazzar, R.F.R.; Kundig, E.P. “Ruthenium Lewis acid-catalyzed reactions; *Ruthenium in Organic Synthesis,* **2004**, 257-276 ; Editor : Murahashi, Shun-Ichi ; *Edited Willey VCH*.

Patent

Intramolecular Hydro-iminiumation and Hydro-amidiniumation of akenes. Bertrand, G., Bourg, J. B., Jazzar, R., Canac, Y., Donnadieu, B., Dewhurst, R. D. U. C. Case No 2007-390-1, US Provisional Application Serial No 60/903,145 (Filed February 23, **2007**)

II – Presentations

Invited Seminars

1. «**Cyclic Amino Alkyl Carbenes**: **New avenues in catalysis**», CEA Saclay (FR), **2018**.
2. «**Cyclic Amino Alkyl Carbenes**: **New avenues in catalysis**», University of Grenoble (FR), **2018**.
3. «**Cyclic Amino Alkyl Carbenes**: **New avenues in catalysis**», University of Montpellier (FR), **2018**.
4. «**CAACs around and beyond**», University of Bath (UK), **2017**.
5. «**Extending Methodologies "Insights into Carbene Designs**», ICN, UMR 7272, University of Nice Sophia Antipolis (France), **2017**.
6. «**Extending Methodologies "Insights into Dehydroborylation Reactions**», ICBMS, University of Lyon 1 (France), **2017**.
7. «**Extending Methodologies "Insights into Dehydroborylation Reactions**», ENCR, University of Rennes (France), **2017**.
8. «**Extending Methodologies "Insights into Dehydroborylation Reactions**», ICN, UMR 7272, Université Nice Sophia Antipolis (France), **2016**.
9. «**The Palladium-catalyzed β-arylation reaction from a mechanistic point of view**», ENSCM Montpellier (France), **2013**.
10. «**Intramolecular "Hydro-Iminiumation and -Amidiniumation" of Alkenes: "A rival for the hydroamination reaction"**» Louvain-la-Neuve (Belgium), **2007**.
11. «**C-C and C-H activation involving ruthenium complexes** » University of Zurich (Switzerland), **2003**.

Conferences: Seminars

1. «**Extending Methodologies: Insights into Dehydroborylation Reactions**»,
   ACS Spring Meeting San Francisco (CA, USA), **2017**
2. «**Career in the CNRS**»
   Green Chemistry: Gordon Research Seminar, Stowe (VT, USA), **2016**. "*Invited"*
3. «**The Palladium-catalyzed β-arylation reaction from a mechanistic point of view**»,
   Journée de Printemps de DCO-SFC, Paris (France), **2013**.
4. «**The Palladium-catalyzed β-arylation reaction from a mechanistic point of view.**»,
   GECO53, Annecy (France), **2012**.
5. **«Diastereo- and enantioselective intramolecular C(sp^3)-H arylation for the synthesis of fused cyclopentanes**»,
   ISCH, Toulouse (France), **2012**.
6. «**The Palladium-catalyzed β-arylation reaction from a mechanistic point of view**»,
   UJF / CCRA, Grenoble (France), **2012**. *"Invited"*
7. «**Palladocatalyzed synthesis of allenes**».
   DETIC, Montpellier (France), **2010**. *"Invited"*
8. «**Palladocatalyzed synthesis of allenes**».
   Journée de la SFC, Lyon (France), **2009**. *"Invited"*
9. «**Single Site Fe- and Ru-Lewis Acids as Catalysts for Asymmetric Cycloaddition Reactions** ».
   Young researcher Oppolzer Lectures, Genève (Switzerland), **2003**.
10. «**Mechanistic studies of ruthenium hydride catalyzed C-H bond activation reactions**».
    XXth International conference on Organometallic Chemistry, Corfu (Greece), **2002**.
11. «**Mechanistic studies of ruthenium hydride catalyzed C-H bond activation reactions**».
    RSC Dalton Division regional meeting, Bristol University (U.K.), **2001**.

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Conferences: Posters

1. «**New carbenes in catalysis**».
   BASF California Research Alliance Symposium, San Diego (USA), **2019**.
2. «**On the mechanism of the Palladium-Catalyzed β-aryaltion of Ester Enolates**».
   Tetrahedron Symposium, ISHC, Toulouse (FR), **2012**.
3. « **Palladocatalyzed synthesis of allenes** ».
   Tetrahedron Symposium, Sitges (Espagne), **2011**.
4. « **Palladocatalyzed synthesis of allenes** ».
   JCO, Palaiseau (FR), **2010**.
5. « **The palladium-catalyzed β-arylation of carboxylic esters** ».
   JCO, Palaiseau (FR), **2010**.
6. « **Palladocatalyzed synthesis of allenes** ».
   JCO, Palaiseau (FR), **2007**.
7. « **Ru-Lewis Acids as Catalysts for Asymmetric Cycloaddition Reactions** ».
   FECHEM Conference on Organometallic Chemistry, Zurich (Suisse), **2003**.
8. « **Ru-Lewis Acids as Catalysts for Asymmetric Cycloaddition Reactions** ».
   Fall Meeting of the Swiss Chemical Society, Lausane (Suisse), **2003**.
9. « **C-C and C-H Bond Activation Reactions in N-Heterocyclic Carbene Complexes of Ruthenium** ».
   RSC Dalton Division regional meeting, Bath University (UK), **2002**.
10. « **C-C and C-H Bond Activation Reactions in N-Heterocyclic Carbene Complexes of Ruthenium** ».
    RSC, Coordination Chemistry Group Meeting, York University (UK), **2001**.
11. « **Mechanistic Studies of Ruthenium Hydrides Catalysed C-H bond Activation Reactions** ».
    Summer school: “Catalysis: Fundamentals and practice”, Liverpool University (UK), **2001**.
12. « **Infrared Studies of Ruthenium Hydrides Catalysed C-H bond Activation Reactions** ».
    RSC Dalton Division regional meeting, Cardiff University (UK), **2000**.
13. « **Infrared Studies of Ruthenium Hydrides Catalysed C-H bond Activation Reactions** ».
    Euro-hydride 2000, Dijon (FR), **2000**.