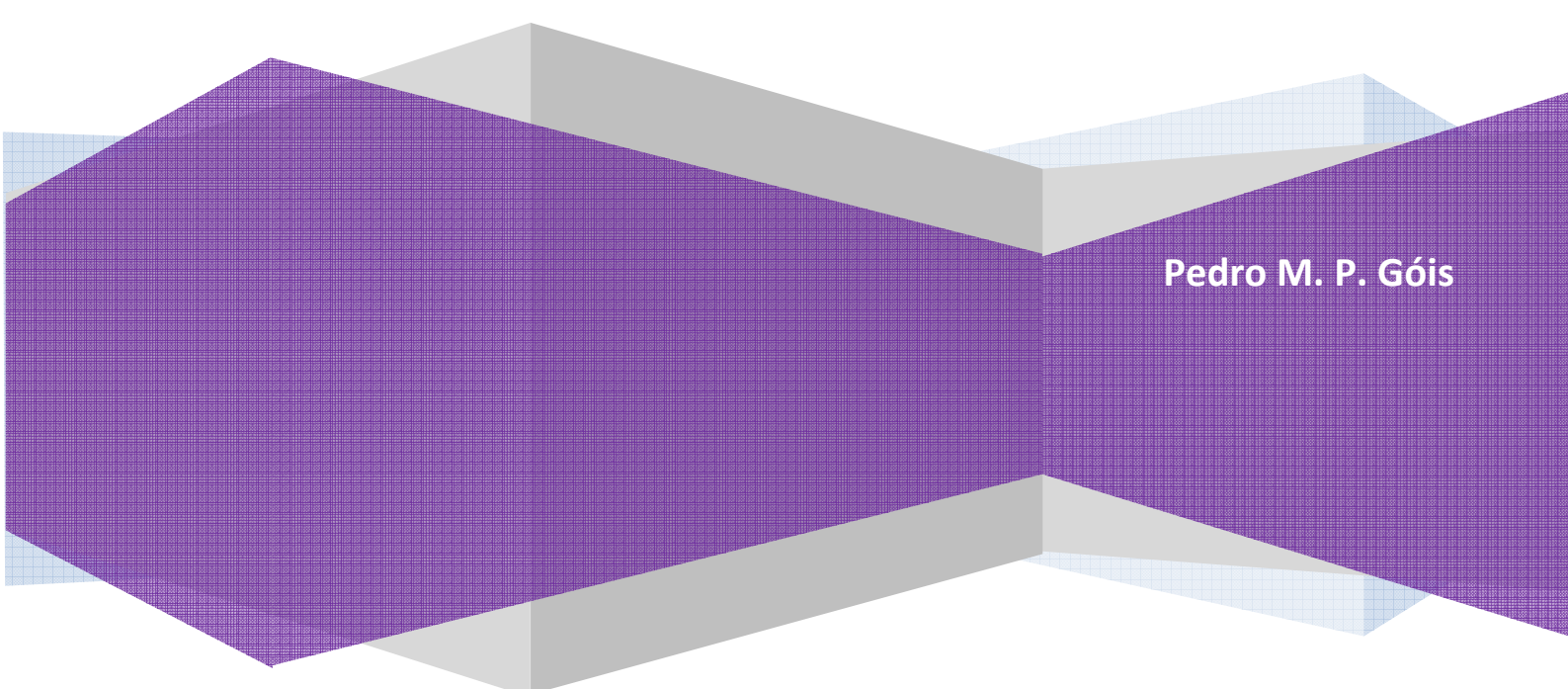


Curriculum vitae



Pedro M. P. Góis

Personal data

- Assistant researcher of the Pharmacy Faculty of the Lisbon University (since 2008)
- Birth place and date: Lisbon, 4/5/77
- National identity card: 10995674 (Lisbon)
- Home address: Alameda Quinta de Santo António, nº 13, 9º A, 1600-675 Telheiras, Lisboa.
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- <http://www.ff.ul.pt/~pedrogois/>

Education/Academic positions

- **07/1999-10/1999** – Erasmus Scholarship: “Investigation of Grignard reaction and by-products” - Bergen University-Chemistry Department - Norway (Prof. George Francis).
- **2000** - Completed the degree on Organic Chemistry at the Universidade Nova de Lisboa - Faculdade de Ciências e Tecnologia.
- **2003** – Managing course at Instituto Superior de Gestão (ISG).
- **02-05-2005** - Completed the PhD under the supervision of Prof. Dr. Carlos A. M. Afonso at the Universidade Nova de Lisboa - Faculdade de ciências e Tecnologia. Thesis title: “*Studies on the cyclisation of 2-Diazo-2-Phophorylacetamides catalysed by Di-Rhodium (II) complexes*” Approved by unanimity.
- **06/2005-04/2008** - Post-Doc (SFRH/BPD/18624/2004): “Novel Organic Transformations Using Palladium Complexes” - UCL (Prof. Stephen Caddick - University College of London, UK); University of Sussex (Prof. Geoffery Cloke, UK).
- **Since 2008-present** – Assistant researcher at iMed Pharmacy Faculty of the Lisbon University

Awards and distinctions

- 2012** - 2012 FCT Investigator - Development grant
- 2012** - Vicente Seabra Medal – Portuguese Chemical Society award for best chemist under 40 years
- 2012** - European Journal of Organic Chemistry plenary lecture at the 6SPJ
- 2009** - Portuguese representative at the Young Investigator Workshop – EuChems
- 2008** - Honour Mention - UTL Young Researcher Award - UTL - Technical University of Lisbon/Deloitte
- 2008/9** - National representative at the EYCN of EuChEMs
- 2008/10** - Co-founder and co-president of the Portuguese young Chemist Group of the Portuguese Chemical Society
- 2004** - Portuguese Science Foundation (FCT) Post-Doc scholarship - SFRH/BPD/18624/2004
- 2001** - School Merit Award – FCT.UNL
- 2000** - Portuguese Science Foundation (FCT) PhD scholarship - SFRH/BD/3097/2000

Scientific publications

Papers in International peer review journals (H factor of 15 and over 700 citations)

2013

37. "Exploring Boron Promoted Fragment Assembly to Discover New Biological Active Compounds" F. Montalbano, P. M. S. D. Cal, M. Alexandra, L. Gonçalves, R. Moreira, P. M. P. Gois, 2012, submitted.

36. "NHC dirhodium(II) complexes as useful catalysts for allylic and benzylic oxidations" J. A. S. Coelho, A. F. Trindade, R. Wanke, B. G. M. Rocha, L. F. Veiros, P. M. P. Gois,* A. J. L. Pombeiro, C. A. M. Afonso,* **Eur. J. Org. Chem.** 2012, ejoc.201201300, accepted.

2012

35. Candeias, N. R.; Carias, C.; Gomes, L. F. R.; André, V.; Duarte, M. T.; Gois, P. M. P.; Afonso, C. A. M.: "Asymmetric intramolecular C-H insertion of alfa-diazo acetamides in water by Dirhodium(II) catalysts derived from natural amino acids" **Adv. Synth. Cat.**, 2012, 354, 2921-2927. DOI: 10.1002/adsc.201200101.

34. "Iminoboronates: A New Strategy for Reversible Protein Modification" P. M. S. D. Cal, J. B. Vicente, E. Pires, A. V. Coelho, L. F. Veiros, C. Cordeiro, P. M. P. Gois* **J. Am. Chem. Soc.**, 2012, 134, 10299. DOI: 10.1021/ja303436y.

33. "Four Component Assembly of Chiral N-B Heterocycles with a Natural Product Like Framework" F. Montalbano, N. R. Candeias, L. F. Veiros, V. André, M. T. Duarte, M. R. Bronze, R. Moreira, P. M. P. Gois*, **Org. Lett.**, 2012, 14, 988-991. DOI: 10.1021/ol203224n

32. "Making expensive dirhodium(II) catalysts cheaper: Rh(II) recycling methods" N. R. Candeias,* C. A. M. Afonso, P. M. P. Gois* **Org. Biomol. Chem.**, 2012, 10, 3357-3378. DOI: 10.1039/C2OB06731E

31. "Fine tuning of dirhodium(II) complexes: Exploring the axial modification" A. Trindade,* J. A. S. Coelho, C. A. M. Afonso, L. F. Veiros, P. M. P. Gois*, **ACS Catalysis**, 2012, 370-383. DOI: 10.1021/cs200597a

30. "A sustainable protocol for the aqueous multicomponent Petasis-borono Mannich reaction" N. R. Candeias,* P. M. S. D. Cal, and P. M. P. Gois,* **J. Chem. Edu.** 2012, 89, 799-802. DOI: 10.1021/ed200509g

29. "Intramolecular C-H insertion catalysed by di-Rhodium(II) complexes using CO₂ as the reaction media." M. E. Zakrzewska, P. M. S.D. Cal, N. R. Candeias, R. Bogel-Lukasik, Carlos A. M. Afonso, M. N. Ponte,* P. M. P. Gois,* **Green Chem. Lett. and Rev.** 2012, 5, 211-240. DOI: 10.1080/17518253.2011.620009

2011

28. "Rhodium(I) N-heterocyclic Carbene Complexes as Catalysts for Hydroformylation of Olefins: an Overview" A. R. Almeida, A. F. Peixoto, M. J. F. Calvete, P. M. P. Gois, M. M. Pereira,* **Curr. Org. Synt.**, 2011, 12, 764-775. DOI: <http://dx.doi.org/10.2174/157017911796957339>

27. "NHC/Iron cooperative catalysis: aerobic oxidative esterification of aldehydes with phenols" R. S. Reddy, J. N. Rosa, L. F. Veiros, S. Caddick and P. M. P. Gois,* **Org. Biomol. Chem.**, 2011, 9, 3126-3129. DOI: 10.1039/c1ob05151b

26. "alfa-Rhamnosidase and b-glucosidase expressed by naringinase immobilized on new ionic liquid sol-gel matrices: Activity and stability studies." Helder Vila-Real, António J. Alfaia, João N. Rosa, Pedro M. P. Gois, M. Emilia Rosa, António R.T. Calado, Maria H. Ribeiro,* **Journal of Biotechnology**, 2011, 110, 6169. [DOI: 10.1016/j.jbiotec.2010.08.005](https://doi.org/10.1016/j.jbiotec.2010.08.005)

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25. "Selective arylation of aldehydes with dirhodium(II)-NHC catalysts" A. F. Trindade, V. André, M. T. Duarte, L. F. Veiros, P. M. P. Gois,* C. A. M. Afonso,* **Tetrahedron**, 2010, 66, 8494-8502. [DOI: 10.1016/j.tet.2010.08.050](https://doi.org/10.1016/j.tet.2010.08.050)

24. "Boronic acids and esters in the Petasis-Borono Mannich multicomponent reaction" Nuno R. Candeias,* Francesco Montalbano, Pedro M. S. D. Cal, Pedro M. P. Gois, **Chem Rev.** 2010, 110, 6169. [DOI: 10.1021/cr100108k](https://doi.org/10.1021/cr100108k)

23. "NHC-Iron-Catalyzed Aerobic Oxidative Aromatic Esterification of Aldehydes using Boronic Acids" Joao N. Rosa, R. Sudarshan Reddy, Nuno R. Candeias, Pedro M. S. D. Cal, Pedro M. P. Gois,* **Org. Lett.**, 2010, 12 (12), pp 2686–2689 - "Article selected as a SYNFACT (synfact P09910SF)". [DOI: 10.1021/ol100302e](https://doi.org/10.1021/ol100302e)

22. "New dirhodium complex with activity towards colorectal cancer" Raquel F. M. Frade, Nuno R. Candeias, Catarina M. M. Duarte, Vânia André, M. Teresa Duarte, Pedro M. P. Gois, Carlos A. M. Afonso,* **Bioorganic & Medicinal Chemistry Letters**, 20 (2010) 3413–3415. [DOI: 10.1016/j.bmcl.2010.04.002](https://doi.org/10.1016/j.bmcl.2010.04.002)

21. "Water as the reaction medium for multicomponent reactions based on boronic acids" Nuno R. Candeias, Pedro M.S.D. Cal, Vania Andre, M. Teresa Duarte, Luis F. Veiros, Pedro M.P. Gois,* **Tetrahedron**, 66 (2010) 2736–2745. [DOI: 10.1016/j.tet.2010.01.084](https://doi.org/10.1016/j.tet.2010.01.084)

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20. "Cyclization of Diazoacetamides Catalyzed by N-Heterocyclic Carbene Dirhodium(II) Complexes" Luis R. Gomes, Alexandre F. Trindade, Nuno R. Candeias, Luis F. Veiros, Pedro M. P. Gois, Carlos A. M. Afonso,* **Synthesis**, 2009, No. 20, 3519–3526. [DOI: 10.1055/s-0029-1217005](https://doi.org/10.1055/s-0029-1217005)

19. "Water: A Suitable Medium for the Petasis Borono-Mannich Reaction" Candeias, N. R.; Gois, P. M. P.;* Afonso, C. A. M., L.F.C. Veiros, **Eur. J. Org. Chem.** 2009, 1859-1863. [DOI: 10.1002/ejoc.200900056](https://doi.org/10.1002/ejoc.200900056)

18. "Recyclable asymmetric catalysts in organic synthesis" Trindade A. F.Candeias, N. R.; Gois, P. M. P.; Afonso, C. A. M., **Chem. Rev.** 2009, 418-514. [DOI: 10.1021/cr800200t](https://doi.org/10.1021/cr800200t)

17. "More Sustainable Approaches for the Synthesis of N-Based Heterocycles" Trindade A. F. Candeias, N. R.; Gois, P. M. P.; L. C. Branco, N. M. T. Lourenço, Afonso C. A. M.,* **Chem. Rev.** 2009, 109, 2703–2802. [DOI: 10.1021/cr800462w](https://doi.org/10.1021/cr800462w)

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16. "Intramolecular C-H Insertion using NHC-Di-Rhodium(II) Complexes: The Influence of Axial Coordination", Gomes, L. F. R.; Trindade A. F.; Candeias, N. R.; Gois,* P. M. P.; Afonso, C. A. M.;* **Tetrahedron Lett.**, 2008, 49, 7372–7375. [DOI: 10.1016/j.tetlet.2008.10.054](https://doi.org/10.1016/j.tetlet.2008.10.054)

15. "Alkylpalladium N-Heterocyclic Carbene Complexes, Synthesis, Reactivity and Catalytic Properties" Oriana Esposito, Pedro M. P. Gois, Alexandra K. de K. Lewis, Stephen Caddick,* F. Geoffrey N. Cloke,* and Peter B. Hitchcock **Organometallics**, 2008, 27 (24), 6411-6418. [DOI: 10.1021/om800455h](https://doi.org/10.1021/om800455h)

14. "Tetra-acetato-bis{[1,3-bis(2,6-diisopropylphenyl)imidazol-2-ylidene]rhodium(II)}(Rh—Rh) tetrahydrofuran tetrasolvate", Vania Andre, M. Teresa Duarte,* Alexandre F. Trindade, Pedro M. P. Gois and Carlos A. M. Afonso; **Acta Cryst.**, 2008 C64, m345–m348. DOI: [10.1107/S0108270108026589](https://doi.org/10.1107/S0108270108026589)

13. "C-H Carbene Insertion of Diazo Acetamides by Photolysis in Non-Conventional Media" N. R. Candeias, P. M. P. Gois, L.F.C. Veiros, C. A. M. Afonso,* **J. Org. Chem.** 2008, 73, 5926-5932. DOI: [10.1021/jo800980c](https://doi.org/10.1021/jo800980c)

12. "Axial Coordination of NHC Ligands on Di-rhodium (II) Complexes: Generation of a New Family of Catalysts" A. F. Trindade, P. M. P. Gois,* L.F.C. Veiros, V. André, M. T. Duarte, C. A. M. Afonso, S. Caddick, F. G. N. Cloke **J. Org. Chem.** 2008, 73, 4076-4086. DOI: [10.1021/jo800087n](https://doi.org/10.1021/jo800087n)

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11. "Rhodium (II) Carbene C-H Insertion in Water and Catalyst Reuse" N. R. Candeias, P. M. P. Gois, C. A. M. Afonso,* **Química Nova** 2007, 30, 1768-1772. WOS:000251319200047

10. "Tuning the Reactivity of Di-rhodium (II) Complexes with Axial NHC Ligands: Arylation of Aldehydes" P. M. P. Gois,* A. F. Trindade, L.F.C. Veiros, V. André, M. T. Duarte, C. A. M. Afonso, S. Caddick, F. G. N. Cloke **Angew. Chem. Int. Ed.** 2007, 46, 5750-5753. DOI: [10.1002/anie.200700924](https://doi.org/10.1002/anie.200700924)

9. "Efficient Catalyst Reuse by Simple Dissolution in Non-conventional Media" C. A. M. Afonso,* L. C. Branco, N. R. Candeias, P. M. P. Gois, N. M. T. Lourenço, N. M. M. Mateus, J. N. Rosa **Chem. Commun.** 2007, 2669-2679. DOI: [10.1039/b607483a](https://doi.org/10.1039/b607483a)

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8. "Studies on the Rh(II) Catalyzed Intramolecular C-H Insertion of Diazo Substrates in Water: Scope and Limitations." N. R. Candeias, P. M. P. Gois, C. A. M. Afonso,* **J. Org. Chem.** 2006, 71, 5489-5497. DOI: [10.1021/jo060397a](https://doi.org/10.1021/jo060397a)

7. "Simple Transformation of Crystalline Chiral Natural Anions to Liquid Medium and Their Use to Induce Chirality." L. C. Branco, P. M. P. Gois, N. M. T. Lourenço, V. B. Kurteva, C. A. M. Afonso,* **Chem. Commun.** 2006, 3, 391-393. DOI: [10.1039/b600816j](https://doi.org/10.1039/b600816j)

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6. "Rh(II) catalysed intramolecular C-H insertion of diazo substrates in water: A simple and efficient approach for catalyst reuse." N. R. Candeias, P. M. P. Gois, C. A. M. Afonso,* **Chem. Commun.** 2005, 3, 391-393. DOI: [10.1039/b414233k](https://doi.org/10.1039/b414233k)

5. "Preparation of enantioselective enriched alfa-(dialkoxyphosphoryl)lactams via insertion with Chiral dirhodium(II) Catalysts." P. M. P. Gois, N. R. Candeias, C. A. M. Afonso,* **J. Mol. Cat. A** 2005, 227, 17-24. DOI: [10.1016/j.molcata.2004.09.041](https://doi.org/10.1016/j.molcata.2004.09.041)

2004

4. "Stereo- and Regio control in the Formation of Lactams by Rhodium-Carbenoid C-H insertion of alfa-Diazoacetamides." P. M. P. Gois,* C. A. M. Afonso,* **Eur. J. Org. Chem.**, 2004, 3773-3788 DOI: [10.1002/ejoc.200400237](https://doi.org/10.1002/ejoc.200400237)

2003

3. "Regio- and Stereoselective Dirhodium(II) Catalysed Intramolecular C-H insertion reaction on alfa-diazo alfa-phosphono-acetamides and acetates." P. M. P. Gois, C. A. M. Afonso,* **Eur. J. Org. Chem.**, 2003, 3798-3810 DOI: [10.1002/ejoc.200300330](https://doi.org/10.1002/ejoc.200300330)

2. "Dirhodium(II) Catalysed C-H insertion reaction on alfa-diazo-alfa-phosphono-acetamides an Ionic Liquid. " P. M. P. Gois, C. A. M. Afonso,* **Tetrahedron Lett.**, 2003, 6571-6573. doi.org/10.1016/j.tetlet.2011.03.031

1. "Studies on the Preparation of 4-Ethoxyalkyliden and 4-Aminoalkyliden-5(4H)-Oxazolones". Matos, M. R. P.; Gois, P. M. P.; Mata, M. L. E. N.; Cabrita, E. J.; Afonso, C. A. M.,* **Synthetic communications**, 2003, 1285-1299. DOI:10.1081/SCC-120018688

Book Chapters

7. A. F. Trindade, J. N. Rosa, F. M. F. Santos, P. M. P. Gois Metal-Organic Multicatalysis: An Emerging Concept; "Organometallic Chemistry: Recent Advances " ICOMC Silver/Gold Jubilee Book, Ed. Prof. Armando Pombeiro, **Wiley** 2012, ISBN: 9781118510148.

6. Candeias, N. R.; Trindade, A. F.; Gois, P. M. P.; Afonso, C. A. M.: The Wolff rearrangement. In **Comprehensive Organic Synthesis 2nd Edition**; Ed. Molander, G.; Knochel, P.; In preparation

5. "Catalytic Methods in Asymmetric Synthesis: Advanced Materials, Techniques, and Applications" Ed. M. Gruttadauria, Francesco Giacalone **Wiley** 2012. Book chapter: Chapter 3 – "Recyclable stereoselective catalysts." A. Trindade, Pedro M. P. Gois, Carlos Monteiro, Carlos A. M. Afonso, 3-64. ISBN 978-0-470-64136-1.

4. P. M. D. S. Cal, N. R. Candeias, P. M. P. Gois; Preparação de um derivado de fenilglicina e hidroximorfina por reacção de multicomponente Petasis-Borono Mannich, Exp. Nº99, In 100 Experiências de Química Orgânica, IST Press, 2011, pp. 419-423.

3. N. R. Candeias, P. M. P. Gois, C. A. M. Afonso; Inserção C-H de carbenóides de ródio em água e reutilização do catalisador, Exp. Nº100, In 100 Experiências de Química Orgânica, IST Press, 2011, pp. 424-429.

2. "More Sustainable methods for the synthesis of heterocycles" P. M. P. Gois Book Chapter Research Signpost, 2007.

1. "More Sustainable Synthetic Organic Chemistry Approaches Based on Catalytic Reuse" C. A. M. Afonso, L. C. Branco, N. R. Candeias, P. M. P. Gois, N. M. T. Lourenço, N. M. M. Mateus, J. N. Rosa Book Chapter: A Portrait of State-of-the-Art Research at the Technical University of Lisbon, Manuel S. Pereira (Ed.) Springer, 2007.

Patents

5. PCT patent pending: "Chemical modification and bioconjugation of proteins or peptides using boron compounds" Pedro M. S. D. Cal, João B. Vicente and Pedro M. P. Gois, 2011/12/07, 20111000093734 (INPI). PCT/IB2012/057063.

4. PCT patent pending: "Boron heterocycles as new inhibitors of human neutrophil elastase (HNE) Inventors" Francesco Montalbano, Pedro M. D. S. Cal, Lídia M. D. Gonçalves, Rui Moreira and Pedro M. P. Gois. PCT/IB2012/057064.

3. "New ionic liquid sol-gel matrices preparation and applications thereof" 2010; Portuguese patent Nº20101000059066 (INPI)

2. "Novos líquidos iónicos baseados na unidade tetra-alquil-dimetilguanidínio" Portuguese patent nº102937 (INPI)

1. Synthesis and properties of tetra-dimethylguanidinium salts as a potential new generation of ionic liquids." Patente Europeia nº(Pedido) 04398003.6 07/04/04

Talks

13- "Metal-Organic multicomponent catalysis: An emerging concept" 2-7 September 2012, Lisbon, XXV international Conference on organometallic Chemistry (XXV ICOMC), **Invited satellite lecture**

12- "Harnessing the N-B Bond as a Strategy to Modify Proteins and Assemble Heterocycles with a Natural Product-Like Framework" 17-20 of July 2012, Lisbon - Spanish-Portuguese-Japanese Organic Chemistry Symposium (6SPJ-OCS) - **Eurojoc - Invited Plenary**

11- "NHCs: Catalysts and/or Ligands: The dual life of a molecule in Cooperative Metal-Organic Catalysis" 14/03/2012 Instituto de Química, Universidade de São Paulo – Brazil - **Plenary lecture**

10- "Cooperative Metal-Organic Catalysis: An emerging Concept" 12/03/2012 Instituto de Química, Universidade de Campinas (UNICAMP) – Brazil - **Plenary lecture**

9- "Cooperative Metal-Organic Catalysis: The Best of Two Worlds!" XXII Encontro Nacional da SPQ, 3-6 Julho 2011, Braga, Portugal – **Invited Key Lecture**

8- "Tuning the reactivity of Rhodium and Iron using N-Heterocyclic carbenes" 29/01/2010 - Seminars and Colloquia at UCL Chemistry- England - **Plenary lecture**

7- "Catalysis and MCRs useful approaches towards C-C and C-X bond formation." 16-19 de Julho 2009, Young Investigator Workshop Chateau Liblice Czech Republic – **Invited Oral communication**

6- Towards molecular complexity: C-C bond formation in water using Metals and MCR 19/10/2009-21/10/2009, Flash Conference on Water - Era Chemistr. Germany - **Invited Oral communication.**

5- C-C and C-X bond formation using metal-catalysed processes and Multicomponent-Reactions 28/10/2009 - Seminários Científicos - Hovione e Universidades, Loures Portugal

4- "Petasis Multicomponent Reaction: Methodology in water, Mechanism Elucidation and Synthesis of Biologically Active Heterocycles" 8º Encontro Nacional de Química Orgânica 1-3 Julho Aveiro 2009 **Invited Oral communication.**

3- "A perfect structural match of NHC Ligands onto Rh dimers induces subtle reactivity: The efficient Alkylation of Aldehydes" - Ciclo de conferencias do DQ-FCT/UNL Abril 2008. Plenary lecture

2- "Axial coordination of NHC Rh dimers: A perfect structural match induces subtle reactivity" 8º Encontro Nacional de Catálise e Materiais Porosos. 21-23 of September of 2007 Lamego Portugal. **Invited Oral communication.**

1- "Dirhodium(II) Catalysed Intramolecular C-H Insertion on diazo-(diethoxyphosphoryl)acetamides, an Expedient way to prepare Heterocycles." TransMediterranean Colloquium on Heterocyclic Chemistry (TRAMECH 2004). 23-27 de Novembro de 2004 Marrakech, Marrocos. **Invited Oral communication.**