



Dr Muriel DURANDETTI

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Actual position

Associate professor of Chemistry

University of Rouen, IUT department of Chemistry

Education

06/1991 : **Master of Analytical Chemistry**, University of Paris VI (Pierre et Marie Curie)

11/1994 : **PhD in Chemistry**, University of Paris VI (Pierre et Marie Curie) (Prof. J. Périchon)

06/2005 : **Habilitation à Diriger des Recherches**, University of Paris XII (Val de Marne)

Professional Appointments

1991-1994, PhD in Chemistry "Nickel-complex catalysis in the electrochemical cross-coupling between aromatic halides and activated alkyl halides, using the sacrificial anode process", L.E.C.S.O. (Pr J. Périchon).

1994-1998, **Assistant professor**, University of Paris XII (Val de Marne) (Pr J. Périchon)

1998-2005, **Associate professor**, University of Paris XII (Val de Marne) (Pr J. Périchon)

2005-present, **Associate professor**, University of Rouen (Pr J. Maddaluno)

Research and Doctorale Supervision Award in 2004-2012. **Scientific Excellence Award** in 2012-present.

Research interests

Topic 1 : Electrocatalysed cross-coupling reaction - Mechanistic investigation using electroanalytical process.

Topic 2 : Cyclisation by carbometallation (lithium, magnesium, nickel), in combination with DFT calculations (in collaboration with Dr. Catherine Fressigné, Assistant professor, University of Rouen).

Topic 3 : Silylated heterocycles synthesis.

Publications and patents

Publications

- 1 - "A Novel Method of Arylation of α -Chloroketones". M. Durandetti, S. Sibille, JY. Nédélec, J. Périchon. *Synth. Commun.*, **1994**, 2, 145-151
- 2 - "Nickel-complex catalysis in the electrochemical cross-coupling between aromatic halides and activated alkyl halides: search for the occurrence of a double oxydative addition". M. Durandetti, S. Sibille, JY. Nédélec, J. Périchon. *Novel Trends in Electro-organic Synthesis*, S. Torii éditeur, p 209-212, **1995**
- 3 - "Nickel-Catalyzed Direct Electrochemical Cross-coupling between Aryl Halides and Activated Alkyl Halides". M. Durandetti, JY. Nédélec, J. Périchon. *J. Org. Chem.*, **1996**, 61, 1748-1755
- 4 - "Investigation of the reductive coupling of aryl halides and/or ethyl chloroacetate electrocatalyzed by the precursor $NiX_2(bpy)$ with $X^- = Cl^-, Br^-$ or $MeSO_3^-$ and $bpy = 2,2'$ -dipyridyl". M. Durandetti, M. Devaud, J. Périchon. *New J. Chem.*, **1996**, 20, 659-667
- 5 - "Nickel-catalyzed electrochemical homocoupling of alkenyl halides. Rates and mechanisms". C. Cannes, E. Labbé, M. Durandetti, M. Devaud JY. Nédélec. *J. Electroanal. Chem.*, **1996**, 412, 85-93
- 6 - "Asymmetric induction in the electrochemical cross-coupling of aryl halides with α -chloropropionic acid derivatives catalyzed by nickel complexes". M. Durandetti, J. Périchon, JY. Nédélec. *J. Org. Chem.*, **1997**, 62, 7914-7915
- 7 - "Nickel-Catalyzed Electrochemical Coupling of 2- and 3-Bromothiophene with Alkyl and Alkenyl halides". M. Durandetti, J. Périchon, JY. Nédélec. *Tetrahedron Lett.*, **1997**, 38, 8683-8686
- 8 - "Stereoselectivity in the electroreductive syntheses with aryl and alkenyl halides catalyzed by nickel complexes". M. Durandetti, S. Condon-Gueugnot, J. Périchon, JY. Nédélec. *Novel Trends in Electro-organic Synthesis*, S. Torii éditeur, p 387-390, **1998**
- 9 - "Nickel- and chromium-catalysed electrochemical coupling of aryl halides with arene carboxaldehydes". M. Durandetti, J. Périchon, JY. Nédélec. *Tetrahedron Lett.*, **1999**, 40, 9009-9013
- 10 - "Nickel-Catalyzed Electrochemical Couplings of Vinyl Halides : Synthetic and Stereochemical Aspects". C. Cannes, S. Condon, M. Durandetti, J. Périchon, J.-Y. Nédélec. *J. Org. Chem.*, **2000**, 65, 4575-4583
- 11 - "An electrochemical coupling of organic halide with aldehydes, catalytic in chromium and nickel Salts. The Nozaki-Hiyama-Kishi reaction". M. Durandetti, JY. Nédélec, J. Périchon. *Org. Lett.*, **2001**, 3, 2073-2076

- 12 - "Nickel- and Chromium-Catalysed Electrochemical Coupling of Aryl Halides with Arenecarboxaldehydes". M. Durandetti, J.-Y. Nédélec, J. Périchon *Proceedings - Electrochemical Society*, p 89-92, **2001**
- 13 - "Electrochemical Homo-Coupling of 2-Bromo-methylpyridines Catalyzed by Nickel Complexes". KWR. de França, M. Navarro, É. Léonel, M. Durandetti, JY. Nédélec. *J. Org. Chem.*, **2002**, *67*, 1838-1842
- 14 - "Iron-Mediated Electrochemical Reaction of α -Chloroesters with Carbonyl Compounds". M. Durandetti, C. Meignein, J. Périchon. *Org. Lett.*, **2003**, *5*, 317-320
- 15 - "Iron-Catalyzed Electrochemical Allylation of Carbonyl Compounds by Allylic Acetates". M. Durandetti, C. Meignein, J. Périchon. *J. Org. Chem.*, **2003**, *68*, 3121-3124
- 16 - **On invitation by Prof. Erick Carreira, publication in a Special Topics on Nickel:** "Nickel-Catalyzed Electrochemical Couplings of Aryl, Heteroaryl or vinyl Halides with Activated Alkyl Halides: Synthetic and Stereochemical Aspects". M. Durandetti, J. Périchon. *Synthesis*, **2004**, 3079-3083
- 17 - "Mechanistic investigation of the iron-mediated electrochemical formation of β -hydroxyesters from α -haloesters and carbonyl compounds". O. Buriez, M. Durandetti, J. Périchon. *J. Electro. Anal. Chem.*, **2005**, *578*, 63-70
- 18 - "Iron Catalysed Reformatsky Type Reactions". M. Durandetti, J. Périchon. *Synthesis*, **2006**, 1542-1548
- 19 - "Iron-Catalyzed Allylation of Ketones". M. Durandetti, J. Périchon. *Tetrahedron Lett.*, **2006**, *47*, 6255-6258
- 20 - "Ni-Catalysed Activation of α -Chloroesters: A simple Method for the Synthesis of α -Arylesters and β -Hydroxy-esters". M. Durandetti, C. Gosmini, J. Périchon. *Tetrahedron*, **2007**, *63*, 1146-1153
- 21 - "Formation and electrochemical behavior characterizations of dibromo 2,2'-bipyridine manganese (II) systems in DMF solution". B. Laïk, M. Durandetti, J. Périchon. *J. Electro. Anal. Chem.*, **2007**, *602*, 275-279
- 22 - "Intramolecular carbolithiation of alkynes: *anti* selectivity". C. Fressigné, AL. Girard, M. Durandetti, J. Maddaluno. *Angew. Chem. Int. Ed.*, **2008**, *47*, 891-893; *Angew. Chem.*, **2008**, *120*, 905-907
- 23 - "A case of *anti* carbolithiation of alkyne resulting from a lithium intramolecular coordination". C. Fressigné, AL. Girard, M. Durandetti, J. Maddaluno. *Chem. Eur. J.*, **2008**, *14*, 5159-5167
- 24 - "Is the elimination of lithium alkoxide easier from a vinylolithium or from an alkylolithium? A DFT study of the aromatization of 3-vinylidene-2,3-dihydrobenzofurans to benzofurans". C. Fressigné, AL. Girard, M. Durandetti, J. Maddaluno. *Eur. J. Org. Chem.*, **2009**, 721-729
- 25 - "Synthesis of functionalized 2-Arylpyridine from 2-halopyridines and various aryl halides via a nickel catalysis". C. Gosmini, C. Bassene-Ernst, M. Durandetti. *Tetrahedron*, **2009**, *65*, 6141-6146
- 26 - "Heterocyclization by Catalytic Carbonickelation of Alkynes: a Domino Sequence Involving Vinylnickels". M. Durandetti, L. Hardou, M. Clément, J. Maddaluno. *Chem. Commun.*, **2009**, 4753-4755
- 27 - "Synthetic applications of the nickel-catalyzed cyclisation of alkynes combined with addition reactions in a domino process". M. Durandetti, L. Hardou, R. Lhermet, M. Rouen, J. Maddaluno. *Chem. Eur. J.*, **2011**, *17*, 12773-12783
- 28 - "Intramolecular Sila-Matteson Rearrangement: a General Access to Silylated Heterocycles". C. François, T. Boddaert, M. Durandetti, O. Querolle, L. Van Hijfte, L. Meerpoel, P. Angibaud, J. Maddaluno. *Org. Lett.*, **2012**, *14*, 2074-2077
- 29 - "Influence of the acetylenic substituent on the intramolecular carbolithiation of alkynes". AL. Girard, R. Lhermet, C. Fressigné, M. Durandetti, J. Maddaluno. *Eur. J. Org. Chem.*, **2012**, 2895-2905. **Cover picture**
- 30 - **On invitation by Prof. Ilan Marek, publication in a Thematic Series on Carbometallation Chemistry** "Intramolecular Carbonickelation of Alkenes". R. Lhermet, M. Durandetti, J. Maddaluno. *Beilstein J. Org. Chem.*, **2013**, *9*, 710-716
- 31 - "Influence of the acetylenic substituent on the intramolecular carbolithiation of alkynes: a DFT theoretical study". C. Fressigné, R. Lhermet, AL. Girard, M. Durandetti, J. Maddaluno. *J. Org. Chem.*, **2013**, *78*, 9659-9669
- 32 - "Anionic access to silylated and germylated binuclear heterocycles". T. Boddaert, C. François, L. Mistico, O. Querolle, L. Meerpoel, P. Angibaud, M. Durandetti, J. Maddaluno. *Chem. Eur. J.*, **2014**, *20*, 10131-10139
- 33 - "Carbolithiation of Chloro-substituted alkynes: a New Access to Vinyl Carbenoids ". R. Lhermet, M. Ahmad, C. Fressigné, B. Silvi, M. Durandetti, J. Maddaluno. *Chem. Eur. J.*, **2014**, *20*, 10249-10254. **Highlighted** in Synfacts, category **Metal-Mediated Synthesis**, *Synfacts*, **2014**, *10*, 1192 (DOI: 10.1055/s-0034-1379345).
- 34 - "Intramolecular carbolithiation of heterosubstituted alkynes: experimental and theoretical Study". R. Lhermet, M. Ahmad, C. Hauduc, C. Fressigné, M. Durandetti, J. Maddaluno. *Chem. Eur. J.*, **2015**, *21*, 8105-8111. Inside back **cover picture**. **Highlighted** in Synfacts, category **Metal-Mediated Synthesis**, *Synfacts*, **2015**, *11*, 0756 (DOI: 10.1055/s-0034-1380918).

Books

1 - *Encyclopedia of Reagents for Organic Synthesis*, John Wiley & Sons, Ltd. Contribution for "**Nickel Bromide Bipyridine**". M. Durandetti, J. Maddaluno. **2014** (DOI: 10.1002/047084289X.rn01736)

Patents

- 1 - "Method for preparation of chiral 2-aryl or 2-heterocyclyl propionic acids and their esters". M. Durandetti, I. Lachaise, JY. Nédélec, J. Périchon. CNRS patent (FR 1997-7908, **1997**, *Chem. Abstr.* **1997**, *130*, 188492, WO 1998-FR1336, **1998**, *Chem. Abstr.* **1998**, *130*, 188492)
- 2 - "Process for carbon-carbon bond formation between a carbonyl compound and an electrophilic compound containing a halogen atom". M. Durandetti, J. Périchon. RHODIA patent (FR 2004-7230, 2004; *Chem. Abstr.* **2006**, *144*, 108097)