



Laboratoire de Chimie de Coordination du CNRS
205 route de Narbonne - 31077 Toulouse CEDEX 4 - France



Dr Noël LUGAN

CNRS Senior Researcher (*Directeur de Recherche*)

☎: +33 5 61 33 31 22 - 📠: +33 5 61 55 30 03

noel.lugan@lcc-toulouse.fr



Work Experience

Since 09/2012	Head of the research group "Molecular design of transition metal pre-catalysts" of the LCC-CNRS
Since 04/2011	Deputy-director of the LCC-CNRS, Toulouse, France
02/2002-06/2002	Invited Researcher, Univ. de Lorraine (Pr Claude Lecomte), Vandoeuvre-lès-Nancy, France
Since 10/2000	CNRS Senior Researcher, LCC-CNRS, Toulouse, France
09/1988-05/1989	Postdoctoral Fellow, PennState Univ. (Pr. Gregory L. Geoffroy), State College, U.S.A.
12/1982-02/1984	Postdoctoral Fellow, Northwestern Univ. (Pr. James A. Ibers), Evanston, U.S.A.
10/1982-09/2000	CNRS Researcher, LCC-CNRS, Toulouse

Education and Training

1987	PhD (<i>Doctorat d'État (Sciences)</i>), Univ. Paul Sabatier, Toulouse, France. "Trinuclear ruthenium clusters supported by bridging ligands : stability, reactivity" Committee: R. Poilblanc, J.-J. Bonnet, P. Braunstein, P. Dixneuf, J. A. Ibers, I. Tkachenko.
1982	PhD (<i>Doctorat de 3ème Cycle</i>), Univ. Paul Sabatier, Toulouse, France. "Trinuclear ruthenium clusters supported by bridging ligands: evaluation in homogeneous catalysis". Committee: R. Poilblanc, R. Wolf, J. Galy, I. Tkatchenko, P. Dixneuf, J.-J. Bonnet.
1980	MS Chem. "Transition metal complexes and applications", Univ. Paul Sabatier, Toulouse, France.
1979	BS Chem., Univ. Paul Sabatier, Toulouse, France.

Fields of Expertise

My two main fields of expertise are i) molecular chemistry of transition metal complexes and applications to organic synthesis and homogeneous catalysis, and ii) structural chemistry, including high-resolution X-ray diffraction and charge density analyses.

Scientific Production (as of 05/2018)

123 peer-reviewed publications, including 4 in *Angew. Chem. Int. Ed.*, 11 in *J. Am. Chem. Soc.*, 9 in *Chem. Commun.*, 8 in *Chem. Eur. J.*, 12 in *Inorg. Chem.*, 34 in *Organometallics*, 8 in *Dalton Trans.*

Citation report (ISI): 3664 citations, 29.55 average citation per article, h-index 38.

88 poster or oral communications in national or international meetings;

5 invited conferences in national or international meetings;

25 invited conferences in academic sites (France, Japan, Russia, Ukraine, Taiwan, Spain...).

Recent Publications

P123 - "Manganese Catalyzed Reductive Amination of Aldehydes using Hydrogen as Reductant"
Wei, D.; Bruneau-Voisine, A.; Valyaev, D. A.; Lugan, N.; Sortais, J.-B. *Chem. Commun.* 2018, 54, 4302–4305.

DOI:10.1039/c8cc01787e

P122 - "Oxidative Coupling of Anionic Abnormal N-Heterocyclic Carbenes: An Efficient Access to Janus-Type 4,4'-bis(Imidazol-2-Ylidenes)"

Grineva, A. A.; Valyaev, D. A.; César, V.; Filippov, O. A.; Khrustalev, V. N.; Nefedov, S. E.; Lugan, N. *Angew. Chem. Int. Ed. Engl.* 2018, 57, _-_.
DOI:10.1002/anie.201801530 and 10.1002/ange.201801530.

- P121 - "Dual reactivity pattern of Mn(I) carbyne complexes $\text{Cp}(\text{CO})_2\text{Mn}^+\equiv\text{C-R}$ (R = Ar, Alk) vs. dppm: subtle balance between double intramolecular nucleophilic addition and nucleophilic addition followed by migratory CO insertion"
Valyaev, D. A.; Utegenov, K. I.; Krivykh, V. V.; Willot, J.; Ustynyuk, N. A.; Lugan, N. *J. Organomet. Chem.* 2018, __, __-__.
DOI:10.1016/j.jorganchem.2017.12.029
- P120 - "Hydrogenation of carbonyl derivatives catalysed by manganese complexes bearing bidentate phosphinopyridine ligands"
Wei, D.; Bruneau-Voisine, A.; Chauvin, T.; Dorcet, V.; Roisnel, T.; Valyaev, D. A.; Lugan, N.; Sortais, J.-B. *Adv. Synth. Catal.* 2018, 360, 676–681.
DOI:10.1002/adsc.201701115
- P119 - "A Palladium(II) Complex of a C4 Chelating Bis(NHC), Diphosphonium Bis(Ylide) Ligand"
Barthes, C.; Bijani, C.; Lugan, N.; Canac, Y. *Organometallics* 2018, 37, 673–678.
DOI:10.1021/acs.organomet.7b00405
- P118 - "Buttressing effect as key design principle towards highly efficient palladium/N-heterocyclic carbene Buchwald-Hartwig amination catalysts"
Zhang, Y.; Storch, G.; Lavigne, G.; Lugan, N.; César, V. *Chem. Eur. J.* 2017, 23, 13792–13801.
DOI:10.1002/chem.201702859
- P117 - "Experimental assessment of the π -acidity of anionic and neutral malonate-derived N-Heterocyclic Carbenes"
Ruamps, M.; Lugan, N.; César, V. *Eur. J. Inorg. Chem.* 2017, 4167–4173.
DOI:10.1002/ejic.201700883
- P116 - "A Convenient Access to N-P Substituted NHC Metal Complexes" [M = Ag(I), Rh(I), Pd(II)]"
Benaissa, I.; Taakili, R.; Lugan, N.; Canac, Y. *Dalton Trans.*, 2017, 46, 12293–12305
DOI:10.1039/C7DT02759A5
- P115 - "Manganese-Mediated Synthesis of a NHC Core Non-Symmetric Pincer Ligand and Evaluation of Its Coordination Properties"
Valyaev, D. A.; Willot, J.; Mangin, L. P.; Zargarian, D.; Lugan, N. *Dalton Trans.* 2017, 46, 10193–1019.
DOI:10.1039/C7DT02190A
- P114- A Cationic N-Heterocyclic Carbene containing an ammonium moiety
Ruamps, M.; Lugan, N.; César, V. *Organometallics* 2017, 36, 1049–1055.
DOI:10.1021/acs.organomet.7b00017
- P113 - "Amino Groups Backbone-substituted NHC Ligands in Ruthenium-Catalyzed Olefin Metathesis of Challenging Substrates"
César, V.; Zhang, Y.; Ruamps, M.; Bastin, S.; Lugan, N.; Lavigne, G.; Grela, K. *Chem. Eur. J.* 2017, 23, 1950–1955.
DOI:10.1002/chem.201604934
- P112 - "Half-Sandwich Manganese Complexes Bearing Cp Tethered N-Heterocyclic Carbene Ligands: Synthesis and Mechanistic Insights into the Catalytic Ketone Hydrosilylation"
Valyaev, D.; Wei, D.; Elangovan, S.; Cavallès, M.; Dorcet, V.; Sortais, J.-B.; Darcel, C.; Lugan, N. *Organometallics* 2016, 35, 4090–4098.
DOI:10.1021/acs.organomet.6b00785
- P111- "Post-coordination Backbone Functionalization of an Imidazol-2-Ylidene and Application to the Synthesis of Heteropolymetallic Complexes Incorporating the Ambidentate $\text{IMes}^{\text{CO}_2}$ Ligand"
Valyaev, D. A.; Uvarova, M. A.; Grineva, A. A.; César, V.; Nefedov, S. N.; Lugan, N. *Dalton Trans.* 2016, 45, 11953–11957.
DOI: 10.1039/C6DT02060G
- P110 - "Manganese organometallic compounds in homogeneous catalysis: past, present, and prospects"
Valyaev, D. A.; Lavigne, G.; Lugan, N. *Coord. Chem. Rev.*, 2016, 308, 191–235.
DOI:10.1016/j.ccr.2015.06.015

Karol Grela (Warsaw Univ., Poland), olefin metathesis • Nikolai Ustynyuk (INEOS, Moscow, Russia), manganese carbene chemistry • Israel Fernandez (U. Complutense, Madrid), DFT calculations • Karine Miqueu et Jean-Marc Sotiropoulos (U. de Pau et des Pays de l'Adour, DFT calculations • Christophe Darcel (ISC de Rennes), homogeneous catalysis • Oleg Filippov (INEOS, Moscow), DFT calculations • Sergei E. Nefedov (IGIC, Moscow), NHC-containing heteropolymetallic complexes.

Recent Appraisal Activities

- Co-Editor of the journal Acta Crystallographica C of the IUCr (2014-)
- Members of the Commission on Journals of the IUCr (2014-)
- Member of the SOLEIL synchrotron peer review committee "Matter & material properties: Structure, Organisation, Characterisation, Elaboration" (2012-)
- Consultant for the Commission on Structural Chemistry of the IUCr (2011-2014)
- Member of the ANR evaluation committee SIMI7 (2013)
- Member of the SOLEIL synchrotron CRISTAL beamline review Committee (2012)
- Manuscript reviewing, on a regular basis, for EurJIC, Organometallics, Dalton Transactions, CEJC, JOMC, ChemCom, OBD...

Organisational Skills and Competence

All along my career I have shown my ability to initiate and manage different research projects, to set up national (Rennes U., Nancy U., Pau U., ...) or international (Belgium, Iran, Poland, Russia, Spain, USA, ...) cooperation projects, and to take charge of young collaborators. I have supervised or co-supervised the work of 7 PhD students, and 16 trainees of different origin.

I have organized several scientific meetings (Chairman of the CONCOORD-GECOM 96 conference (120 attendees), Scientific Secretary of the CONCOORD-GECOM 88 (120 attendees), EuroBIC 2000 (400 attendees), and AFC 2006 (220 attendees) conferences), and participated of the organization of some others (EuCOMC 2011 (800 attendees), ISHC 2012 (500 attendees)).

I am currently leading a research group that includes 4 CNRS Researchers, 1 University Professor, 1 CNRS Technician, and (as of today) 8 PhD students. I am also deputy-director of the Laboratoire de Chimie de Coordination du CNRS (LCC-CNRS) in Toulouse (44 CNRS Researchers, 49 Engineers or Technicians, 41 Professors or Assistant-Professors, and *ca.* 110 students, postdocs or trainees).

