CiQUS

Centro Singular de Investigación en **Química Biolóxica** e **Materiais Moleculares**

Conferencia: Ruthenium Catalysts for Greener Processes: Alkynes, Alkenes, and C-H bond functionalizations

Pierre Dixneuf

CNRS-Université Rennes

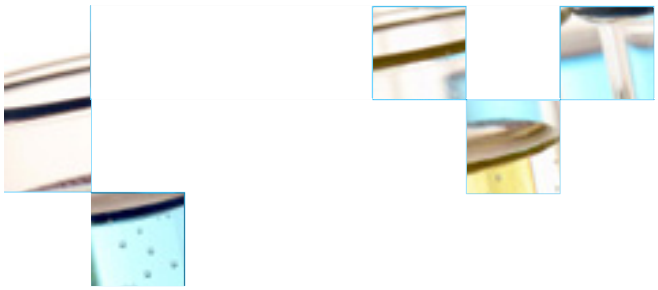
01/10/14

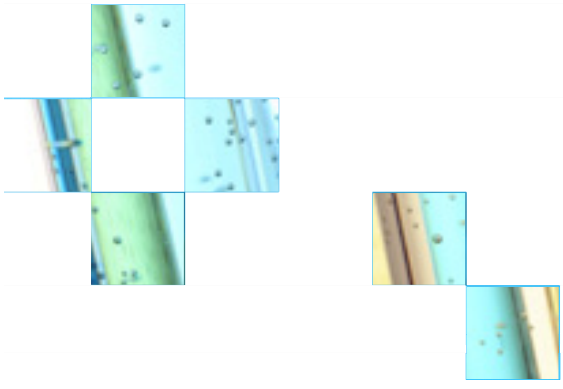
.....

Aula de Seminarios do CIQUS

12:15 h

Más información:
www.usc.es/ciqus





XUNTA DE GALICIA
CONSELLERÍA DE CULTURA, EDUCACIÓN E ORDENACIÓN UNIVERSITARIA

USC UNIVERSIDADE DE SANTIAGO DE COMPOSTELA

CAMPUS VIDA
CAMPUS DE EXCELENCIA INTERNACIONAL

Biography

Prof. Pierre H. Dixneuf

Professional address :

Institut des Sciences Chimiques de Rennes
Campus de Beaulieu, Université de Rennes, 35042 RENNES Cedex (France)
Telephone: +33-2 2323 62 80 ; Telefax +33-2 2323 69 39
E.mail: pierre.dixneuf@univ-rennes1.fr
http://www.umr6509.univrennes1.fr/site_anglais/individual_pages/dixneuf/index.htm

Present position

2008 Emeritus Professor at the University of Rennes, France
1994 Professor "classe exceptionnelle", University of Rennes
1978 Professor University of Rennes
1973 Assistant Professor University of Rennes
1972 Associate researcher with Rrof. M.F. Lappert, University of Sussex, Brighton,U.K.

Scientific activity

Research at the boundary of metal complexes and catalysis

> 400 papers in international journals including
- . 20 review articles
- . 18 book chapters
- . 8 patents
- . 3 books edited (Springer 2004, Wiley 2008, 2013)

Supervision of 62 PhD students
60 invited lectures in international meetings
120 lectures in universities and industry

Awards and Distinctions

1990 **A. von Humboldt** prize for Research
1994 **French Academy of Sciences** award (M. de la Charlonie)
1996 **Doctor Honoris Causa**, University of Waterloo, Canada
2000 **Le Bel** Prize (French Chemical Society)
2000 Member of the « Institut universitaire de France »
2001 **Grignard-Wittig Prize** (GDCh)
2006 **Sacconi medal** (Italy)
2006 **IFP Prize** (French Institute of Petroleum prize for catalysis) (French Academy of Sciences)

National Services and international expertises

1986-1999 Director of a CNRS research unit "Organometalllics and Catalysis"
1989-1996 Initiator of the European Erasmus student exchange program in Chemistry in Rennes
1995 Elected Member of the National Committee at CNRS (95-96)
1996 Scientific Advisor for CNRS-Department of Chemical Sciences for physical chemistry, catalysis, coordination chemistry, surfaces (nov 96-Dec 99)
2000 Nominated Member of the National Committee of the CNRS (00-04)
2000 Initiator and first director of the Institute of Chemistry in Rennes (2000-2002)
2001-2004 Vice President for research at the University of Rennes
2004 Initiator of the International Master on Catalysis and Green Chemistry (in English)

2002-2011 : expert evaluator for the Max Planck Institute in Mühleim (Germany)
2013 : expert evaluator for the Chinese Academy of Sciences (China)

Journal Advisory, Editorial boards, Conference Boards

1995-2004	JCS Chemical communications
1998-2007	New journal of chemistry
Since 1997	Editor board of " Topics in Organometallic Chemistry "series, Springer
2000-2011	Advances in Synthesis and catalysis
Since 2001	Green Chemistry

Member of the International Advisory board :
ICOMC (International Conference on Organometallic Chemistry)
OMCOS (International Conference on Organometallic Chemistry directed towards Organic Synthesis)

Associated Professor positions

- University of Waterloo, Canada (1978 and 1996)
- University of Auckland, NZ (1989)
- University of North Carolina, Chapel Hill - USA (1984 and 1990)
- University of Berlin (F.U.) (RFA) (1991 von Humboldt price)
- University of Oviedo, Spain (1992)
- Lomonosov University, Moscow, Russia, (1994)
- University of Tokyo (Japan) (1996, JSPS awardee)
- Tsing Hua University, Hinshu (Taiwan) (2009-2010)
- Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences (2010)
- Wuhan University (China) (2011-2013)

Participtions in European research networks

1993-1996 : coordinator of a Human Capital and Mobility Network on Activation of small molecules (18 laboratories of 9 countries)
2000-2004 : Participant in POLYCAT- Catalysts and polymerization" coordinated by Florence (Italy)
2005-2010 : Participant in the European Network of Excellence IDECAT
1998-2001 : French representative for COST - Chemistry

Research topics

- Organometallic chemistry

Carbon-rich organometallics

- Chemistry of ruthenium carbenes, vinylidenes, allenylidenes, cumulenes, carbines
- Monomers and organometallic polymers
- Redox and radical processes.

- Homogeneous catalysis

- *Design of catalysts*, especially ruthenium catalysts

* **vinylidenes in catalysis : first example of involvement of a ruthenium vinylidene in catalysis (1986),** (addition of carbamic and carboxylic acids to alkynes)
* **new ruthenium catalysts for olefin metathesis**: allenylidenes as a new class of catalysts, in situ prepared enyne metathesis catalysts. Understanding of the mechanism

- Development of catalytic transformations

* **selective formation of C-C and C-O bonds** with atom economy
functional enol esters, carbonates, oxazolidinones
* **enantioselective catalysis**
new ruthenium catalysts and hydrogenation of ketones and enamides
* **olefin and enyne metathesis**
transformations of plant oils by alkene cross metathesis
* **Catalysis in ionic liquids**
* **Catalysis in water and green chemistry**
* **sp^2C-H bond activation and functionalization**