

Dalton Discussion 6: Organometallic Chemistry and Catalysis

University of York, UK

9 - 11 September 2003

PROGRAMME

Session 1: New Chemistry of C-H and C-F Activation

Keynote 1

C-H activation, abnormal ligand binding and molecular recognition effects in carbene chemistry and catalysis

Robert Crabtree

Yale University, USA

C-F activation and derivatisation of fluorinated olefins at Rhodium

Thomas Braun

University of Bielefeld, Germany

Oxidative addition of RO-OH species at (diimine)PtMe₂ complexes. New Pt(IV) complexes that are relevant for alkane functionalisation chemistry

Mats Tilset

University of Oslo, Norway

Catalysed borylation of C-H bonds

Todd Marder

University of Durham, UK

C-H versus C-C agostic interactions in cycloalkyl niobium complexes: steric and electronic effects

Michel Étienne

Laboratoire de Chimie de Coordination du CNRS,

Toulouse, France

Activation of carbon-fluorine bonds using Cp*₂ZrH₂: a diversity of mechanisms

William D Jones

University of Rochester, USA

Session 2: Catalysis and Polymerisation

Keynote 2

Metal-catalysed synthesis of stereoregular polyketones, polyesters, and polycarbonates

Kyoko Nozaki

University of Tokyo, Japan

Orthopalladated phosphinite complexes as high-activity catalysts for the Suzuki reaction

Robin Bedford

University of Exeter, UK

Copper(I) mediated living radical polymerisation – mechanistic considerations

David Haddleton

University of Warwick, UK

Catalysing the formation of C-X bonds: mechanisms and development

Barbara Messerle

The University of New South Wales, Australia

Unprecedented copolymers from new early rare earth catalysts

Marc Visseaux

Université de Bourgogne, Dijon, France

Session 3: Organometallic Materials

Keynote 3

Metal-catalysed routes to rings, chains and macromolecules based on inorganic elements

Ian Manners

University of Toronto, Canada

Stationary phases composed of sol-gel processed organometallic complexes functionalised with polyethylene glycol

Hermann Mayer

University of Tübingen, Germany

Mesoporous ta oxide reduced with bis(toluene) Ti: electronic properties and mechanistic considerations of nitrogen cleavage on the low-valent surface

David Antonelli

University of Windsor, Canada

Session 4: Links to Enzymes and Biological Chemistry

Keynote 4

Life from hydrogen and carbon monoxide: structure/function relationships in hydrogenases and acetyl coenzyme A synthase

Juan Fonticella-Camps

Institut de Biologie Structurale, Grenoble, France

Targeting synthetic analogues of the metallo-sulfur active sites of nickel enzymes capable of important catalysis

David Evans

John Innes Centre, Norwich, UK

Hydrogenase on an electrode: a remarkable heterogeneous catalyst

Fraser Armstrong

University of Oxford, UK

Electrocatalysis of hydrogen production by active site analogues of the iron hydrogenase enzyme: structure/function relationships

Marcetta Darensbourg

Texas A & M University, USA

Session 5: Organometallic Reactivity

Keynote 5

Generation and reactivity of sterically hindered iridium carbenes. Competitive *a* vs *b* hydrogen elimination

Ernesto Carmona

University of Seville, Spain

***Cis* to *trans* isomerisation of $\text{CpRe}(\text{CO})_2(\text{H})(\text{ArF})$ ($\text{ArF} = \text{C}_6\text{H}_n\text{F}_{5-n}$; $n = 0-5$) is the rate determining step in C-H activation of fluoroarenes : a DFT study**

Eric Clot

CNRS, Montpellier, France

Nucleophilic addition of phosphines to rhenium allenylidenes. Unprecedented double P-H activation to give an *h*¹-P-Phosphabutadienyl ligand

Maurizio Peruzzini

CNR, Florence, Italy

Redistribution at silicon by ruthenium complexes. Bonding mode of the bridging silanes in $\text{Ru}_2\text{H}_4(m\text{-}h_2:h_2:h_2:h_2\text{-SiH}_4)(\text{PCy}_3)_4$ and $\text{Ru}_2\text{H}_2\{m\text{-}h_2:h_2\text{-H}_2\text{Si(OMe)}_2\}_3(\text{PCy}_3)_2$

Sylviane Sabo-Etienne

Laboratoire de Chimie de Coordination du CNRS,

Toulouse, France

Room temperature cyclometallation of amines, imines and oxazolines with $[\text{RuCl}_2(\text{Arene})]_2$ and $[\text{MCl}_2\text{Cp}^*]_2$ (M = Rh, Ir)

David L Davies

University of Leicester, UK

Session 6: Mechanisms and Methods

Keynote 6

Using fast time-resolved infrared spectroscopy to probe excited states and reaction mechanisms

Mike George

University of Nottingham, UK

Marked influence of the bridging carbonyl ligands on the photo- and electrochemistry of the clusters $[\text{Ru}_3(\text{CO})_8(m\text{-CO})_2(\text{L})]$ (L = 2,2'- bipyridine, 4,4'-dimethyl-2,2-bipyridine and 2,2'- bipyrimidine)

Frantisek Hartl

University of Amsterdam, The Netherlands

High-pressure NMR studies on the alternating copolymerisation of styrene with carbon monoxide catalysed by a palladium(II)-(R,S)-BINAPHOS complex

Jonathan Iggo

University of Liverpool, UK

Computational study of the spin-forbidden H_2 oxidative addition to 16-electron Fe(0) complexes

Rinaldo Poli

Université de Bourgogne, Dijon, France