



RSC | Advancing the
Chemical Sciences

1st Winter School on Molecular Chemistry

Organised by the

RSC Dalton Section

&

International Research Training Group

**"Generation of Supramolecular Functional Cavities -
Container Molecules, Macrocycles and Related
Compounds"**

Söll / Austria

March 1st – March 8th, 2008

Organising Committee

Peter G. Edwards

F. Ekkehardt Hahn

Mareike C. Jahnke

Paul D. Newman

Keynote Lecturers

Simon Aldridge, Oxford / United Kingdom

Peter G. Edwards, Cardiff / United Kingdom

F. Ekkehardt Hahn, Münster / Germany

Paul D. Newman, Cardiff / United Kingdom

Matthias Tamm, Braunschweig / Germany

Benjamin D. Ward, Cardiff / United Kingdom

Jan J. Weigand, Münster / Germany

Programme

1st Winter School on Molecular Chemistry

Programme

Saturday, March 1st, 2008:

20:00 Informal Welcome Party

Sunday, March 2nd, 2008:

Evening Session

20:00 – 20:20 Susanne Ruppel
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

Synthesis of Macrobicyclic Tris(benzene-o-dithiol) Ligands

20:20 – 20:40 Birgit Birkmann
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

*From the Nature to the Lab: Metallosupramolecular Chemistry Based
on Benzene-o-dithiol Ligands*

20:40 – 21:00 Johannes Dömer
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

*Introducing Benzene-o-Dithiol/Pyridylimine Ligands as New
Bidentate Heterodonor Ligands*

21:00 – 21:20 James Knight
School of Chemistry, Cardiff University, United Kingdom
Coordination Behavior of a New Promising Series of Tripodal Ligand Frameworks and a Structural Exploration of Transition Metal Complexes

Monday, March 3rd, 2008:

Morning Session

8:00 – 8:20 Carolin Dumke
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany
Synthesis Strategies for Triphenylphosphin functionalized 2-Benzimidazol- and 2-Imidazolidin-Gold(I)-Complexes

8:20 – 8:40 Fabian Conrady
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany
Synthesis of and investigations on palladium complexes with bridged benzimidazolin-2-ylidene ligands

8:40 – 9:00 Mareike C. Jahnke
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany
School of Chemistry, Cardiff University, United Kingdom
Synthesis of Palladium Complexes Derived from Polydentate Carbene Ligands

9:00 – 9:20 Christian Radloff
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany
*Cyclic Polyimidazolium Salts as Precursors for Mono-, Di- and
Hexanuclear Silver Carbene Complexes*

9:20 – 9:40 Oliver Kaufhold
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany
*Mixed N-heterocyclic carbene/phosphine containing macrocyclic
ligands – group 7 & 8 metals?*

Evening Session

20:00 – 20:20 Catherine J. Frankis
Department of Chemistry, University of Bath, United Kingdom
Exploiting C₃-symmetry for stereoselective polymer synthesis

20:20 – 20:40 Anna Fuller
Wolfson Materials and Catalysis Centre, School of Chemical Sciences
and Pharmacy, University of East Anglia, Norwich, United Kingdom
The Chemistry of (C₆F₅)₃B·NH₃

20:40 – 21:20 *Keynote lecture*
F. Ekkehardt Hahn
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany
Template Synthesis of Cyclic Polycarbene Ligands

Tuesday, March 4th, 2008:

Morning Session

- 8:00 – 8:20 Craig Williams
School of Chemistry, Cardiff University, United Kingdom
Studies towards the liberation of a triphosphamacrocycle from its metal template
- 8:20 – 8:40 Huw A. Tallis
School of Chemistry, Cardiff University, United Kingdom
Novel Approaches Towards New 9-Membered Triphosphorus Macrocycles
- 8:40 – 9:00 Matthieu Limon
School of Chemistry, Cardiff University, United Kingdom
Towards Macrocyclic Phosphine-Carbene Ligands by Template Synthesis
- 9:00 – 9:20 Aarón Flores Figueroa
Institut für Anorganische und Analytische Chemie, Universität Münster, Germany
NHC synthesis by reduction of β -azido isocyanide ligands
- 9:20 – 9:40 Michael P. Redmond
Centre for Radiochemistry Research, School of Chemistry, University of Manchester, United Kingdom
Probing Actinyl Bonding: Structural and Spectroscopic Studies of Coordination Compounds in the $\{AnO_2\}^{2+}$ Series: An = U, Np, Pu

Evening Session

19:30 – 20:30 *Postersession*

20:30 – 21:10 *Keynote lecture*

Peter G. Edwards

School of Chemistry, Cardiff University, United Kingdom

Macrocyclic Phosphorus Ligands

Wednesday, March 5th, 2008:

Morning Session

8:00 – 8:20 Sarina Zemke

Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

Alkylation of hydrogallation products

8:20 – 8:40 Henrik Bock

Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

Macrocycles based on Ga-Ga-Single-bonds

8:40 – 9:00 Hauke Westenberg

Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

Cycloaddition Reactions of Ga(I) and In(I) compounds

9:00 – 9:20 Andrej Vinogradov
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

New Aspects of Hydroalumination

9:20 – 9:40 Ines Tiesmeyer
Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

cis/trans-Isomerisation of Hydroalumination Products

Evening Session

20:00– 20:00 ***Keynote lecture***
Matthias Tamm
Institut für Anorganische und Analytische Chemie, Technische
Universität Carolo-Wilhelmina, Braunschweig, Germany

***Recent Progress in the Development of Efficient Homogeneous
Catalysts for Alkyne Metathesis***

20:40 – 21:20 ***Keynote lecture***
Benjamin D. Ward
School of Chemistry, Cardiff University, United Kingdom
***Early Transition Metal Cations: Synthesis, properties, and Catalysts
for the Stereospecific Polymerisation of α -Olefins***

Thursday, March 6th, 2008

Morning Session

8:00 – 8:20

Nina Wichner

Institut für Physikalische Chemie, Universität Münster, Germany

Metal Nanoclusters in Sol-Gel Containers

8:20 – 8:40

Stephen E. Potts

Department of Chemistry, University College London, United Kingdom

*Transition Metal Amides and Imides as Precursors to Metal Nitride
and Carbonitride Thin Films via Chemical Vapour Deposition*

8:40 – 9:00

Gabriele De Paoli

Physiakisches Institut, Westfälische Wilhelms-Universität Münster,
Germany

Lasing from organic electroluminescent devices: a bright revolution?

9:00 – 9:20

Juliana Clodt

Institut für Organische Chemie, Universität Münster, Germany

Building blocks for container molecules based on bis-N-acylamidins

9:20 – 9:40

Ina Häger

Institut für Organische Chemie, Universität Münster, Germany

Synthesis of novel 1,3,5-Triazapentadienes

Evening Session

19:30 – 20:30 *Postersession*

20:30 – 21:10 *Keynote lecture*

Paul D. Newman

School of Chemistry, Cardiff University, United Kingdom

Phosphacycles: from small rings through cage compounds to larger multidentate macrocyclic ligands

Friday, March 7th, 2008:

Morning Session

8:00 – 8:20 Michael Claesener

Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

Hydrogallation of Polyalkynes – Generation of potentially chelating Poly-Lewis-Acids and their Application in Adduct Formation

8:00 – 8:20 Klaus Schindler

Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

Cycloaddition reactions using compounds with Ga and In atoms in low oxidation states

8:40 – 9:00 Reagan J. Davidson

Department of Chemistry, Dalhousie University, Halifax

Bifunctional diphosphorus Lewis acids from cyclodiphosphadiazanes

9:00 – 9:40

Keynote lecture

Jan J. Weigand

Institut für Anorganische und Analytische Chemie, Universität Münster,
Germany

***Poly-onio Substituted Pnictogen Centers and their Coordination
Chemistry***

Evening Session

20:00 – 20:20

Kristin Michel

Institut für Organische Chemie, Universität Münster, Germany

***Oxiranylcarbaldimines - Precursor for Chiral Aziridines and β -
Lactames***

20:20 – 21:00

Keynote lecture

Simon Aldridge

University of Oxford, United Kingdom

Group 13 Analogues of Classical Organometallic Ligands

21:00

Closing Remarks

**Abstracts of the
Keynote Lectures**

**Abstracts of the
Short Lectures**

Poster Presentations

Birgit Birkmann, F. Ekkehardt Hahn

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Metallosupramolecular Architecture with Benzene-o-dithiol Ligands

Henrik R. Bock, Werner Uhl

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Functionalized Macrocycles based on Ga-Ga-Single-bonds

Michael Claesener, Werner Uhl

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Hydrogallation of Polyalkynes – Generation of potentially chelating Poly-Lewis-Acids and their Application in Adduct Formation

Juliana Clodt, E.-U. Würthwein

Institut für Organische Chemie, Universität Münster, Germany

Building blocks for container molecules based on N-acylamidines

Fabian Conrady, F. Ekkehardt Hahn, R. Fröhlich

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Palladium complexes with bridged benzimidazolin-2-ylidene ligands

Gabriele De Paoli,^a Peter Belser,^b Paul Heremens,^{c,d} Luisa De Cola^a

^aPhysikalisches Institut, Universität Münster, Germany

^bInstitute of Inorganic and Analytical Chemistry, University Fribourg, Switzerland

^cIMEC – MCP/PME, Leuven, Belgium.

^dKatholieke Universiteit Leuven, ESAT/INSYS, Belgium

Synthesis, Characterisation and Electroluminescent Devices of NIR-Emissive Iridium(III) Complexes

Johannes Dömer, F. Ekkehardt Hahn

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Synthesis and First Coordination Studies of New Benzene-o-Dithiol/Pyridylimine Ligands

Carolin Dumke, F. Ekkehardt Hahn

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Synthesis Strategies for Triphenylphosphin Functionalized 2-Benzimidazol- and 2-Imidazolidin-Gold(I)-Complexes

Aarón Flores Figueroa, Oliver Kaufhold, F. Ekkehardt Hahn

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

NHC synthesis by reduction of β -azido isocyanide ligands

Catherine J. Frankis, Amanda J. Chmura, Matthew G. Davidson, Matthew D. Jones

Department of Chemistry, University of Bath, United Kingdom

Exploiting C_3 -symmetry for stereoselective polymer synthesis

Anna Fuller, S. J. Lancaster, D. L. Hughes

Wolfson Materials and Catalysis Centre, School of Chemical Sciences and Pharmacy,
University of East Anglia, Norwich, United Kingdom

The Chemistry of $(C_6F_5)_3B \cdot NH_3$

Ina Häger, E.-U. Würthwein

Institut für Organische Chemie, Universität Münster, Germany

Synthesis of novel 1,3,5-Triazapentadienes

Mareike C. Jahnke,^{a,b} F. Ekkehardt Hahn,^a Kingsley J. Cavell^b

^aInstitut für Anorganische und Analytische Chemie, Universität Münster, Germany

^bSchool of Chemistry, University Cardiff, United Kingdom

Synthesis of Complexes Derived from Polydentate Carbene Ligands

O. Kaufhold,^a A. Stasch,^b P. G. Edwards,^b F. E. Hahn^a

^aInstitut für Anorganische und Analytische Chemie, Universität Münster, Germany

^bSchool of Chemistry, University Cardiff, United Kingdom

The quest for macrocyclic ligands with a P₂C^NH₃ donor set

James Knight, Angelo Amoroso and Peter G. Edwards

School of Chemistry, Cardiff University, United Kingdom

Coordination Behavior of a New Promising Series of Tripodal Ligand Frameworks and a Structural Exploration of Transition Metal Complexes

Matthieu Limon, Peter G. Edwards

School of Chemistry, Cardiff University, United Kingdom

Towards Macrocyclic Phosphine-Carbene Ligands by Template Synthesis

Kristin Michel, E.-U. Würthwein

Institut für Organische Chemie, Universität Münster, Germany

Oxiranylcarbaldimines - Precursor for Chiral Aziridines and β -Lactames

Stephen E. Potts,^a Claire J. Carmalt,^a Hywel O. Davies^b

^aDepartment of Chemistry, University College London, United Kingdom

^bSAFC Hitech Ltd., Bromborough, United Kingdom

Transition Metal Amides and Imides as Precursors to Metal Nitride and Carbonitride Thin Films via Chemical Vapour Deposition

Christian Radloff, F. Ekkehardt Hahn

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Cyclic Polyimidazolium Salts as Precursors for Mono-, Di- and Hexanuclear Silver Carbene Complexes

Michael P. Redmond,^a Stephanie M. Cornet,^a David Collison,^b Madeleine Helliwell,^b James Raftery,^b Christophe Den Auwer^c

^aCentre for Radiochemistry Research, School of Chemistry, University of Manchester, United Kingdom

^b School of Chemistry, University of Manchester, United Kingdom

^cCEA Marcoule, France

Probing Actinyl Bonding: Structural and Spectroscopic Studies of Coordination Compounds in the {AnO₂}²⁺ Series: An = U, Np, Pu

Susanne Ruppel, F. Ekkehardt Hahn

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Supramolecular Macrobicyclic Complexes Based on Tris(benzene-*o*-dithiol) Ligands

Klaus Schindler, Werner Uhl

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Cycloaddition reactions using compounds with Ga and In atoms in low oxidation states

Huw A. Tallis, Peter G. Edwards, Paul D. Newman

School of Chemistry, Cardiff University, United Kingdom

Novel Approaches Towards New 9-Membered Triphosphorus Macrocycles

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Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Cis/trans-isomerisation of hydroalumination products

Andrej Vinogradov, Werner Uhl

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

New Aspects of Hydroalumination

Hauke Westenberg, Werner Uhl

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

Cycloaddition Reactions of Ga(I) and In(I) compounds

N. Wichner,^a G. Rothenberg,^b H. Koller^a

^aInstitut für Physikalische Chemie, Universität Münster, Germany

^bVan't Hoff Institute for Molecular Sciences, Faculty of Science, University of Amsterdam,
The Netherlands

Metal Nanoclusters in Sol-Gel Containers

Craig Williams, P.G. Edwards, P.D. Newman, E. Reixach

School of Chemistry, Cardiff University, United Kingdom

Studies towards the liberation of a triphosphamacrocycle from its metal template

Sarina Zemke, Werner Uhl

Institut für Anorganische und Analytische Chemie, Universität Münster, Germany

New Aspects of Hydrogallation Reactions with Alkynes