

Dalton Discussion 3: Inorganic Crystal Engineering

University of Bologna, Italy

9-11 September 2000

PROGRAMME

Saturday 9 September

Session 1: Supramolecular Chemistry

Keynote 1

A molecular meccano kit

S J Cantrill, A R Pease and J F Stoddart*

University of California, Los Angeles, USA

Effect of protons and metal ions on the fluorescence properties of a polylysine dendrimer containing twenty four dansyl units

V Balzani,* P Ceroni, S Gestermann, M Gorka, C Kauffmann and F Vögtle

University of Bologna, Italy

Supramolecular assemblies from ditopic ligands and transition metal salts

H A Miller,* N Laing, S Parsons, A Parkin, P A Tasker and D J White

University of Edinburgh, UK

Platinum(II) phosphine and orotate complexes with aminopyridine co-ligands, and their molecular recognition via hydrogen bonding

X Xu, S L James, D M P Mingos,* A J P White and D J Williams

University of Oxford, UK

Directional 1-D inclusion networks: self-assembly of unsymmetrical coilands into directional coilates in the crystalline phase

J Martz, E Graf, M W Hosseini,* A De Cian and J Fischer

Université Louis Pasteur, France

Self-assembled organoplatinum(II) supermolecules as crystalline, SO₂ gas-triggered switches

M Albrecht, M Lutz, A M M Schreurs, E T H Lutz, A L Spek and G van Koten*

Utrecht University, The Netherlands

Sunday 10 September

Session 2: Covalent Co-ordination Networks

Keynote 2

A net-based approach to coordination polymers

R Robson

University of Melbourne, Australia

Co-ordination polymers containing square grids of dimension 15x15 Å

K Biradha and M Fujita*

Nagoya University, Japan

Multi-modal bridging ligands; effects of ligand functionality, anion and crystallisation solvent in silver(I) co-ordination polymers

A J Blake, N R Champness*, P A Cooke, J E B Nicholson and C Wilson

University of Nottingham, UK

New examples of self-catenation in two three-dimensional polymeric co-ordination networks

L Carlucci, G Ciani, D M Proserpio* and S Rizzato

University of Milan, Italy

Copper(I) dicyanamide co-ordination polymers: ladders, sheets, layers, diamond-like networks and unusual interpenetration

S R Batten,* A R Harris, P Jensen, K S Murray and A Ziebell

Monash University, Australia

Coexisting covalent and non-covalent planar networks in the crystal structures of $\{[M(\text{bipy})_2(\text{NO}_3)_2]\cdot\text{arene}\}$ (M = Ni, 1: Co, 2; arene = chlorobenzene, o-dichlorobenzene, benzene, nitrobenzene, toluene or anisole)

K Biradha, A Mondal, B Moulton and M J Zaworotko*

University of South Florida, USA

The influence of hydrogen bonding on the structure of zinc co-ordination polymers

A D Burrows,* R W Harrington, M F Mahon and C E Price

University of Bath, UK

Session 3: Molecular Crystals

Keynote 3

Hydrogen bonding and other intermolecular interactions in organometallic crystals

G R Desiraju

University of Hyderabad, India

Combining hydrogen bonds with coordination chemistry or organometallic π -arene chemistry: strategies for inorganic crystal engineering

L Brammer,* J C Mareque Rivas, R Atencio, S Fang and F C Pigge

University of Missouri - St. Louis, USA

Assembly of 2-D inorganic/organic lamellar structures through a combination of copper(I) coordination polymers and self-complementary hydrogen bonds

C B Aakeröy,* A M Beatty and K R Lorimer

Kansas State University, USA

Anion recognition by conservation of hydrogen-bonding patterns in salts of copper(II) coordinated by tetradentate bis(amido-O-alkylurea) ligands

A J Blake, P Hubberstey,* U Suksangpanya and C L Wilson

University of Nottingham, UK

The solid state aggregation of two gold(I) nitrate complexes

T Mathieson, A Schier and H Schmidbaur*

Technischen Universität München, Germany

A critical account on π - π stacking in metal complexes with aromatic nitrogen-containing ligands

C Janiak

Universität Freiburg, Germany

Organic-inorganic hybrid solids: control of perhalometallate solid state structures

A L Gillon, G R Lewis, A G Orpen,* S Rotter, J Starbuck, X-M Wang, Y Rodríguez-Martín and C Ruiz-Pérez

University of Bristol, UK

Monday 11 September

Sessions 4: Properties and Characterisation

Keynote 4

Supramolecular interactions and magnetism of metal-radical chains

A Caneschi, D Gatteschi,* N Lalioti, C Sangregorio and R Sessoli

University of Florence, Italy

Iron(II) phosphonates: a new series of molecule-based weak ferromagnets

A Altomare, C Bellitto,* S A Ibrahim, M R Mahmoud and R Rizzi

CNR - Istituto di Chimica dei Materiali, Rome, Italy

Characterisation of the defective silicalites

S Bordiga, I Roggiero, P Ugliengo, A Zecchina,* V Bolis, A Artioli and C Lambertini

University of Torino, Italy

Polybis(4-azabenzimidazolato)-iron(II) and -cobalt(II). 3-D single diamond-like framework materials which exhibit spin canting and ferromagnetic ordering at low temperatures

S J Rettig, V Sánchez, A Storr, R C Thompson* and J Trotter

University of British Columbia, Canada

Effect of thermal annealing on the ferrimagnetic behavior and ordering of the [MnTXPP]⁺[TCNE]⁻.solv (X = F, Cl, Br, I; Solv = PhMe, CH₂Cl₂) family of magnets

D K Rittenberg, A M Arif and J S Miller*

University of Utah, USA

Towards rational synthesis of polar solids. Synthesis and x-ray structures of cadmium(II) *meta*-pyridinecarboxylate coordination polymers

O R Evans* and W Lin

Brandeis University, USA

Design of molecular materials combining magnetic, electrical and optical properties

E Coronado,* M Clemente-Léon, J R Galán-Mascarós, C Giménez-Sainz, C J Gómez-García and

E Martínez-Ferrero

University of Valencia, Spain

Session 5: Crystal Growth, Polymorphism and Biomineralisation

Keynote 5

Crystal tectonics: chemical construction and self-organisation beyond the unit cell – RSC Interdisciplinary Award Lecture

S Mann,* S A Davis, S R Hall, M Li, K H Rhodes, W Shenton, S Vaucher and B Zhang
University of Bristol, UK

Patterned crystallisation on self-assembled monolayers with integrated regions of disorder

J Aizenberg
Bell Laboratories/Lucent Technologies, USA

Making and converting organometallic pseudo-polymorphs via non-solution methods

D Braga, G Cojazzi, A Abati, L Maini, M Polito, L Scaccianoce and F Grepioni*
Universities of Bologna and Sassari, Italy

X-ray absorption spectroscopy studies on the structures of a biogenic "amorphous" calcium carbonate phase

Y Levi-Kalisman,* S Raz, S Weiner, L Addadi and I Sagi
Weizmann Institute of Science, Israel

Polymorphism and architectural crystals: assembly of calcium carbonate in biologically inspired polymeric matrices

G Falini,* S Fermani, M Gazzano and A Ripamonti
University of Bologna, Italy

Biologically inspired polyoxometalate-surfactant composite materials. Investigations on the structures of discrete, surfactant-encapsulated clusters, monolayers, and Langmuir-Blodgett films of $(\text{DODA})_{40}(\text{NH}_4)_2[(\text{H}_2\text{O})_n\text{C}\text{Mo}_{132}\text{O}_{372}(\text{CH}_3\text{CO}_2)_{30}(\text{H}_2\text{O})_{72}]$

D G Kurth, P Lehmann, D Volkmer,* A Müller and D Schwahn
University of Bielefeld, Germany