

Events

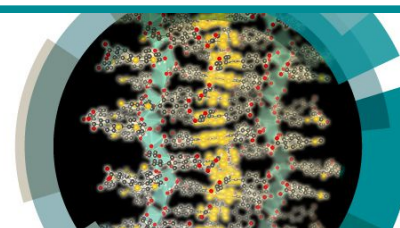
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New Directions in Porous Crystalline Materials

Faraday Discussion



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New directions in porous crystalline materials: Faraday Discussion

5 - 7 June 2017, Edinburgh, United Kingdom 

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Introduction

Introduction

Metal-organic frameworks (MOFs), covalent-organic frameworks (COFs), and related molecular porous materials have entered a stage where not just the porosity, but other physical attributes are now playing a major role in their properties. Catalytic properties rivalling those of classic heterogeneous catalysts are being unearthed by carefully engineering isolated active sites in the pores. Photophysical properties enabled by both the rigidity and the controlled dynamics of the porous environment are making strides from both fundamental and applied perspectives. Applications in energy storage are emerging as well, enabled by important advances in increasing the electrical and ionic conductivity in these materials to values that rival and even surpass those of organic semiconductors. Exciting magnetic properties are being reported in such materials with increasing frequency as well, suggesting that perhaps porous magnets and possibly superconductors are also within reach.

This Discussion will thus focus on several important new directions in the chemistry of porous crystalline materials and will attempt to distil converging themes.

Format

The Faraday Division have been organising high impact Faraday Discussions in rapidly developing areas of physical chemistry and its interfaces with other scientific disciplines for over 100 years.

Faraday Discussions have a special format where research papers written by the speakers are distributed to all participants before the meeting, and most of the meeting is devoted to discussing the papers. Everyone contributes to the discussion - including

presenting their own relevant research. The research papers and a record of the discussion are published in the journal Faraday Discussions.

Find out more about Faraday Discussions in this video:

Themes

- **New Directions in Gas Sorption and Separation with MOFs**

Mainstay of many of the MOF researchers, this subfield is maturing into a much more applied field, with important applications especially in gas separation and methane storage. Both fundamental gas binding aspects and new structural aspects influencing gas sorption will be discussed and targeted as part of the discussion.

- **Electronic, Magnetic, and Photophysical Properties of MOFs and COFs**

Electrical conductivity and charge transport have only recently become possible with MOFs. This is one of the newest potential applications of these materials.

- **Catalysis in MOFs**

New trends here focus on electrochemical catalysis, strut-based metalloligand catalysis and organocatalysis, as well as node-based catalysis. All aspects have seen huge leaps in the last few years and these will be discussed in this session.

- **MOFs Modelling and Theory**

This final session will focus on theoretical modelling of gas sorption processes in MOFs. A material genome is emerging, which is promised to allow ab-initio predictions of MOFs properties.

Aims

The aim of this discussion meeting is to develop fundamental understanding of key aspects in the chemistry of porous crystalline materials: chemical properties (i.e. catalysis, small molecule reactivity, post-synthetic tuning), electronic properties (i.e. magnetism, conductivity, and photophysics), and physical properties (adsorption and separation) will be discussed in this context.

Supporting Division

Organised by the Faraday Division in association with the Materials Chemistry Division and Dalton Division.

Deadlines

Jan
16
2017

Paper Submission deadline



Useful links



Frequently Asked Questions

Specific questions about the unique format

Downloads



[Programme](#)



[Pre-Prints Session 1](#)



[Pre-Prints Session 2](#)



[Pre-Prints Session 3a](#)



[Pre-Prints Session 3b](#)



[Pre-Prints Session 4a](#)



[Pre-Prints Session 4b](#)

Speakers



Abstract Submission



Registration



Bursaries



Programme & pre-prints



Sponsors and exhibitors



Venue



Accommodation



Committee



Contact information



Related events



ArmChemFront 2018

21 - 25 October 2018, Yerevan, , Armenia



1st Annual Congress on Research in Applied Sciences; Engineering, Science & Technology (EST Congress-I)

16 November 2018 08:00 - 18 November 2018 18:00, Kuala Lumpur, Malaysia



International Conference on Emerging Advanced Nanomaterials ICEAN 2018

30 October 2018 08:00 - 2 November 2018 20:00, Newcastle, Australia



14th International Symposium on Macrocyclic and Supramolecular Chemistry (ISMSC2019)

2 - 6 June 2019, Lecce, Italy

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