



WARWICK

GLOBAL RESEARCH PRIORITIES
MATERIALS

Materials Week 2016

Monday 1st to Friday 5th February

*A week of events highlighting Materials
research excellence at Warwick*

**Please check all times and locations on
Warwick.ac.uk/Materials**

For further information on any event, please contact:

Materials GRP Administrator, Annie Morton: Anne.Morton@warwick.ac.uk

Materials GRP Leads, Rachel O'Reilly: Rachel.Oreilly@warwick.ac.uk

David Leadley: D.R.Leadley@warwick.ac.uk



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Monday 1 February

Stuart Cantrill, Editor in Chief, Nature Chemistry

PLT, 11-12



“Social media and science”

Do you blog? Are you on Twitter? Do you even know what Twitter is? This talk will look at how the rise of social media (and Twitter in particular) has impacted the process of doing science, as well as how it is now disseminated. How have journals embraced (or not embraced) the use of social media and #canyouhazpdf?

One-on-one meetings will be available with Stuart after the talk, further details online.

Please register at Warwick.ac.uk/Materials

Materials Matter – Outreach lecture

R0.21, Ramphal building, 19.00 – 20.00

In this lecture, we will outline the uses and properties of a range of new materials that either do or will make our lives easier, safer or more comfortable. From waterproof fabrics, to nappies to 3D printers the lecture will be given by Nick Barker (Chemistry Schools Outreach Programme) with contributions by Dr Simon Leigh, Prof David Leadley, Laura MacDougall and Maria Inam who will be tell you more about their current research work.

Recommended age 10yrs +

Tickets are free, search “Warwick Materials Matter” on [Eventbrite.com](https://www.eventbrite.com)



Tuesday 2 February

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Warwick Material Modelling meets Industry

Prof Ale Troisi

CS0.07, 10.30 – 15.00

A programme of events led by Prof Ale Troisi (Chemistry) to bring together industry and Warwick Modellers

10.30 – 12.15 Presentations by Warwick staff:

- ❖ “How Warwick Modelling can help”
- ❖ Opportunity for Funding Joint Research Programmes (RCUK & EU funding)
- ❖ PhD Funding
- ❖ Large Schemes

12:15 – 13:00 Lunch

13:00 – 15:00 Breakout sessions

For further details and registration, please visit Warwick.ac.uk/Materials

Coventry & Warwickshire IOM³

Young Speakers Lecture Competition

IMC 004, 18.30

Sponsored by the Institute of Materials, Minerals and Mining, with support from The Worshipful Company of Armourers & Brasiers, the Young Persons' Lecture Competition invites students and professionals up to the age of 28 to deliver a short lecture on a materials, minerals, mining, packaging, clay technology and wood science related subject.

Candidates will compete in the event which is organised by the local affiliated Coventry and Warwickshire Materials society, from which one candidate will be selected to compete in the national final.



Please register at Warwick.ac.uk/Materials



Wednesday 3 February

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Egg Drop

10.00 – 14.00, IMC

A great team building event - teams compete to design the most effective crash structure for their egg. Using everyday materials to make a protective surround, will your egg survive the drop?

Teams of 4-6 people should register at Warwick.ac.uk/Materials

European Funding Opportunities, UKRO

L5, 13:00



The UK Research Office (UKRO) will be running sessions on Horizon 2020 and the European Research Council/Marie Skłodowska-Curie Actions. Warwick's UKRO contact, Blazej Thomas, will be leading the sessions, which will be open to academics, researchers and administrators.

- ❖ 13.00 – 14.30 Materials GRP Funding session - collaborative grants (from the industrial leadership pillar) from the EU.
- ❖ 14.30 – 14.45 Break
- ❖ 14.45 – 16.00 ERC / Marie Skłodowska-Curie Actions
 - an overview of ERC and MSCA programmes, including eligibility and reimbursement rules
 - information about the calls

The session will be of interest to academics and researchers who want to know more about how Fellowships can assist their research and to administrators who support the pre- and post-award processes, either in the central administration or in departments and research centres.

Please register at Warwick.ac.uk/Materials



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Wednesday 3 February

Prof Sir Konstantin Novoselov

University of Manchester

Joint winner of the Nobel prize in Physics, 2010

PLT, 16.30 – 17.30

Materials in the Flatland

When one writes with a pencil, thin flakes of graphite are left on a surface. Some of them are only one atom thick and can be viewed as individual atomic planes cleaved away from the bulk. Such one atom thick crystals of graphite (dubbed graphene) turned out to be the strongest crystals available to us, the most conductive, most thermally conductive, most elastic, flexible, transparent material, *etc.* Its electronic properties are particularly exciting: its quasiparticles are governed by the Dirac equation so that charge carriers in graphene mimic relativistic particles with zero rest mass.

Still, probably the most important “property” of graphene is that it has opened a floodgate of experiments on many other 2D atomic crystals: BN, NbSe₂, TaS₂, MoS₂, *etc.* The resulting pool of 2D crystals is huge, and they cover a massive range of properties: from the most insulating to the most conductive, from the strongest to the softest.

If 2D materials provide a large range of different properties, sandwich structures made up of 2, 3, 4 ... different layers of such materials can offer even greater scope. Since these 2D-based heterostructures can be tailored with atomic precision and individual layers of very different character can be combined together, - the properties of these structures can be tuned to study novel physical phenomena or to fit an enormous range of possible applications, with the functionality of heterostructure stacks is “embedded” in their design.

Refreshments will be served before the seminar outside PLT from 4 PM.

Following the seminar, there will be a drinks reception on the MAS Concourse.



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Thursday 4 February

**Composites and Electrochemistry with 2-Dimensional
Materials Workshop**

Dr Neil Wilson (Physics)

MAS 2.06, 11.15 – 15.45

This workshop will focus on the electrochemical properties of two-dimensional materials and their applications in nanocomposites. This will bring together leading academics from the universities of Warwick, Manchester and Imperial.

Further details and a registration form at Warwick.ac.uk/Materials

Colloquium: Prof Jonathan Coleman

Trinity College, Dublin

B2.02, 16.00 – 17.00

**Liquid phase exfoliation of van der Waals bonded
nanomaterials; from tiny things to advanced applications**

Prof Coleman's talk will be followed by a drinks reception on the MAS Concourse and poster session to highlight research undertaken by Warwick Undergraduates through the Materials Summer Bursary Programme.

Abstract and registration at Warwick.ac.uk/Materials



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Friday 5 February

Bringing 3D printing and biomedical engineering together

Prof Andrew Dove (Chemistry)

Radcliffe, 10.30 – 14.00

The aim of this workshop is to bring researchers from Warwick and Manchester with interests in using 3D printing for biomedical engineering together. A series of talks from researchers in both institutions will highlight the capabilities in materials science and 3D printing alongside application focussed studies to combine expertise in deriving the next generations of medical solutions.

Please register at [Warwick.ac.uk/Materials](https://www.warwick.ac.uk/Materials)



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MATERIALS WEEK PLANNER 2016

	Morning	Afternoon	Evening
Monday 1 February	Dr Stuart Cantrill, : Nature Publishing “Social Media and Science” PLT, 11am One on one meetings with SC		Outreach lecture: “Materials Matter” R0.21, 7pm
Tuesday 2 February	Warwick Material Modelling meets Industry Prof Ale Troisi CS0.07, 10.30 – 3pm		IOM ³ Young Speakers Lecture Competition IMC 004, 6.30pm
Wednesday 3 February		Guest speaker: Prof Sir Konstantin Novoselov PLT, 4.30pm Drinks reception MAS Concourse, 5.30pm	
	Egg Drop IMC, 10 – 2pm		
	“Collaborative and Marie Curie grants” UKRO – Blazej Thomas L5, from 1pm		
Thursday 4 February	“Electrochemical properties of two-dimensional materials and their applications in nanocomposites” Dr Neil Wilson, MAS 2.06 Guest speaker: Jonathan Coleman “Liquid phase exfoliation of van der Waals bonded nanomaterials; from tiny things to advanced applications” B2.02, 4-5pm		Summer bursary poster event MAS Concourse, 5pm
Friday 5 February	“Bringing 3D printing and biomedical engineering together” Prof Andrew Dove, Radcliffe, 10.30 – 2pm		