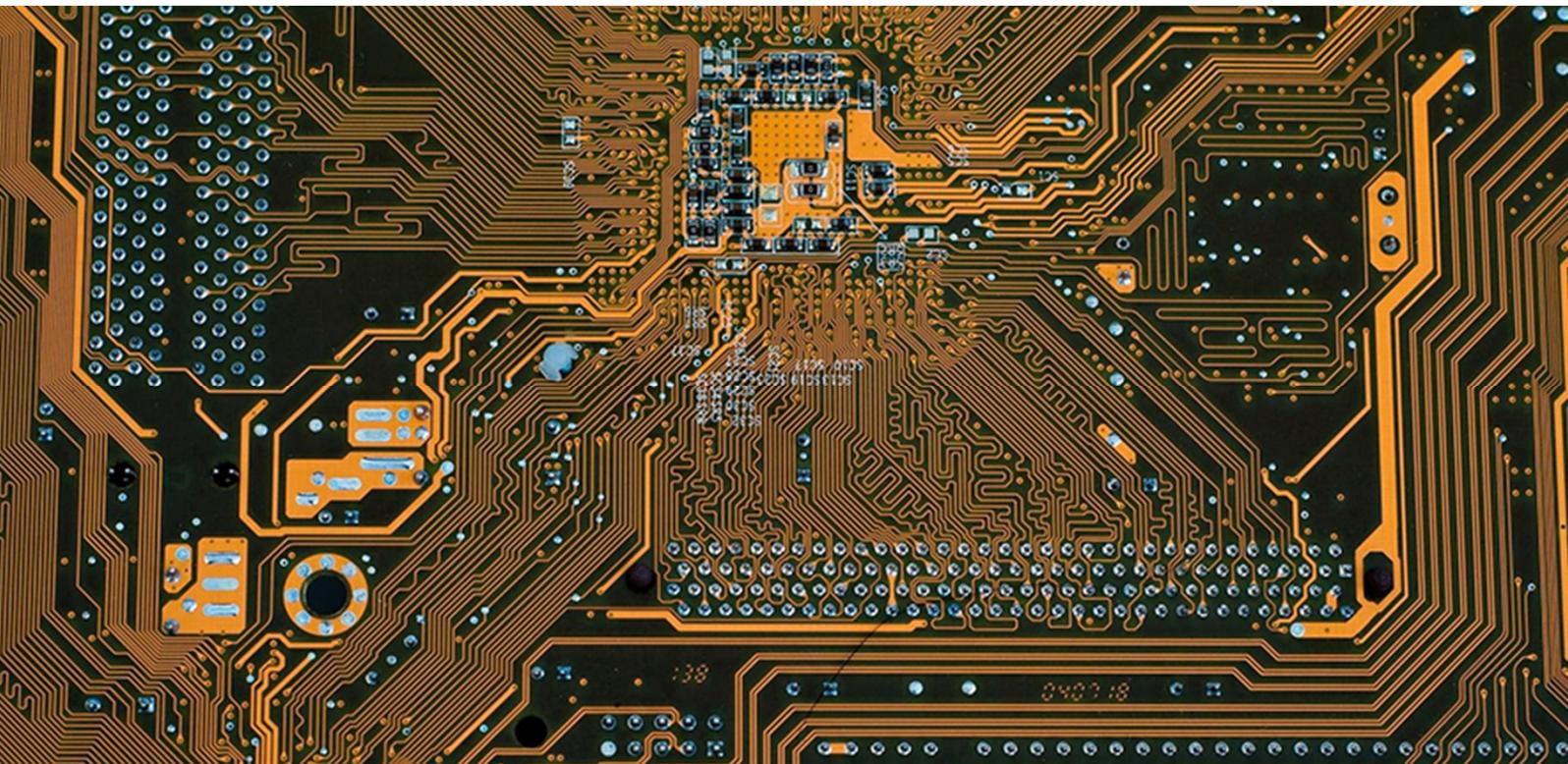


CAMBRIDGE  
SCIENCE  
FESTIVAL

# Materials Science

## Programme of Events

### Saturday 19 March 2016



Department of Materials Science and Metallurgy  
27 Charles Babbage Road  
Cambridge  
CB3 0FS



**THE WORSHIPFUL COMPANY OF  
ARMOURERS AND BRASIER**

# Talks in Goldsmiths' Lecture Theatre 1

Interactive materials-themed talks,  
ideal for age 12+

## Goldsmiths' Lecture Theatre 1

**From a wooden toe to eLEGS: materials for medical implants**

10:30am - 11:30am

Ismael Moreno and Anke Husmann, Cambridge Centre for Medical Materials

**Electron Microscopy: See small, see more**

12:00pm - 1:00pm

Josh Einsle and Duncan Johnstone, Electron Microscopy Group

**The power of carbon: graphite, graphene and diamond**

1:30pm - 2:30pm

Ali Kamali, Materials Chemistry Group

**Water and light: technology from nature**

3:00pm - 4:00pm

Mike Coto, Materials Chemistry Group

**Steel: Probably the best material in the world!**

4:15pm - 5:15pm

Ed Pickering and Lucy Fielding, Phase Transformations Group

# Workshops and Exhibits

Hands-on science demonstrations,  
ideal for families

## Coffee Room, First Floor

### Materials Science Workshops

10:30am - 3:30pm, drop-in

A series of short workshops ideal for children between 6 and 12 years old to gain hands-on experience of fascinating scientific phenomena

### Engineering Atoms

10:30am - 3:30pm, drop-in

This exhibit shows how to design metal alloys that are able to withstand the extreme conditions inside a gas turbine engine. For all ages.

## Goldsmiths' Lecture Theatre 2

### Lots and lots of light bulbs!

Three bookable slots, for bookings email [sls55@cam.ac.uk](mailto:sls55@cam.ac.uk)

10:30am – 10:15am

11:30am – 12:15pm

12:30pm – 1:15pm

This workshop is ideal for children aged 4 to 7. Children can discuss where electricity comes from, generate their own electricity to power a light bulb, and make their own convection-powered dragon to take home!

# Talks held in the University Sports Hall

University of Cambridge Sports Centre  
Philippa Fawcett Drive  
Cambridge  
CB3 0AS

Many thanks to the University Sports Centre for hosting the Department's events

## **The Science of Ice Cream (book seats at [www.sciencefestival.cam.ac.uk](http://www.sciencefestival.cam.ac.uk))**

**10:30am - 11:30am and repeated at**

**12:30pm - 1:30pm**

Investigate the incredible material properties of ice cream, find out about industrial ice cream manufacture, and discover the science behind why ice cream tastes so good. The audience also gets to taste our home-made ice cream, using the ultra-fast cooling power of liquid nitrogen.

## **Out of the blue: How gallium nitride improves your life**

**2:00pm - 3:00pm**

The 2014 Nobel Prize in Physics was awarded for research into gallium nitride, a transparent crystal that emits vibrant blue light and is the basis of a multi-billion-dollar LED, transistor and laser industry. This talk explores the many ways that this material is used for environmentally-friendly lighting, water purification, power and data transmission, and even medical research.

## **Approaching Absolute Zero: the world of superconductors**

**3:30pm - 4:30pm**

What happens to materials when we cool them to nearly Absolute Zero? When cooled, a class of fascinating ceramic materials known as superconductors can carry electric current with no loss of energy, can repel magnetic fields, and could be the future of energy transmission, medical imaging and transport. This talk demonstrates the amazing properties of superconductors, and investigates what happens to materials when cooled in liquid nitrogen at  $-168^{\circ}\text{C}$ .