

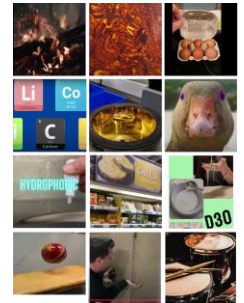
Newsletter

Brought to you by **Dr Chris Hamlett**,
Discover Materials National Outreach Officer

Welcome to 2025 and to our latest newsletter

We hope that you have had a relaxing break and are ready for the new term. Over the winter break we released a series of short videos that are loosely based on each of the twelve days of Christmas. We are also looking forward to attending the ASE Conference in Nottingham where we will be talking to teachers, technicians and other educators to help plan a series of free, online CPD sessions for teachers. We will update you when we plan to run these.

12 Materials of Christmas playlist



Materials Science in the News

Plans for bio receptive tiles to increase biodiversity

A charity in Whitby are planning to use tiles with complex surface texture to help the growth of algae and other marine organisms which could help rebuild coastal wildlife,



This is an example of the importance of surface structures in material science applications.

<https://www.bbc.co.uk/news/articles/czjdn002l496>

Awareness weeks in the Spring Term

Info from www.awarenessdays.com

Energy Savers Week 2025 (20th – 26th January)

There are some ideas (and video) about activities relating to Materials Science and Energy in our CoCoElectro Bag.



National Careers Week 2025 (3rd – 8th March)

We have graduate profiles, recordings of careers panel session and lots of links to information about careers in MSE on our website.



British Science Week 2025 (7th – 16th March)

This is the British Science Association's annual ten-day celebration of science and this year's theme is 'Change and Adapt'.

Adaptations in nature have inspired many developments in materials science such as the self-cleaning surfaces (inspired by lotus leaves) to naturally occurring smart materials (like those found in pinecones).



Lotus leaf

Pinecones



Why not explore surfaces and structures in nature and what function they perform.

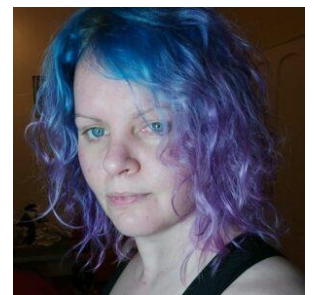
Discover Materials Ambassadors

Discover Materials Ambassadors are Materials Scientists keen to inspire the next generation

Jo Galloway

Postdoctoral Research,
University of Leeds

Jo is a postdoctoral researcher at the University of Leeds. Her research is about using bio templated nanoparticles for energy applications. She also loves designing games to help communicate science – such as the crystal structure 'Top Trumps' style game she made.



Learn more about Jo here:



Check out a resource about Materials in a Mobile phone that Jo wrote for us

What is it?

This is an electron microscope image, but what is it of?

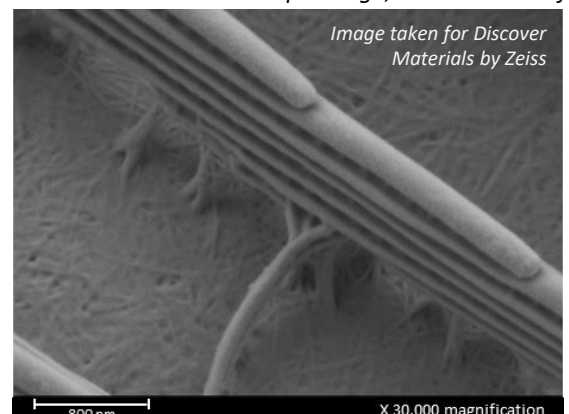


Image taken for Discover Materials by Zeiss

Find out overleaf...

For Secondary Schools

This section highlights useful resources and careers information on our website to help guide **11-18 year olds** into developing their interest in Materials Science and Engineering and discovering pathways to careers in the field.

This month's featured resource:
Let's Move to the Moon' box



Our Let's Move to the Moon boxes (funded by the UK Space Agency) contain all of the equipment and consumables needed for your pupils to complete eight missions to understand some of the materials science considerations when building a moonbase.

The pupils will investigate density, thermal conductivity, mechanical properties, how to block UV radiation.

The boxes are **free** to borrow and there is an instruction booklet for the project and videos to accompany each mission.



Careers page

This month's featured careers resource:

Our open access article in the ASE's *School Science Review Journal* looks at routes into careers in Materials Science and Engineering and profiles the routes that three MSE graduates have taken.

The articles can be found via this QR code link:



Upcoming Events...

- Worcester STEAM Fest (25th January, The Hive, Worcester)
- Festival of Tomorrow (21st and 22nd February, The Deanery, Swindon)

More information on these, and other events, can be found on the Events page on our website.



**DISCOVER
MATERIALS**

For Primary Schools and Families

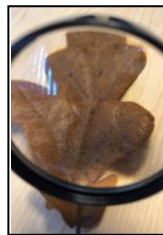
This section highlights activities and information for primary school teachers and families to help inspire **0-11 year olds** about what things are made from.

This month's featured activity:
Materials Investigators – Surfaces



- What do materials look like **really** close up?
- Why do they look that way?

This activity help introduce your pupils to the world of the small by magnifying surfaces to find out what they look like close up and to open discussion about the surface structures.



Follow the link below to download a **worksheet** and some **microscope images** we have taken for you to use in class using a magnifying glass and a clip-on microscope lens attached to a smart phone – these types of lenses also clip on to tablets making them a great way to introduce children to microscopy.

What is it?



The electron microscope image is of the wing of a **morpho butterfly**. The iridescent blue colour of butterfly is due to the periodic microstructures on their wings rather than any pigment.

Learn about this, and other smart materials, in the following video:



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