

WMCTC: Initial Autumn programme. Lectures, ABM and CPD

Dear WMCTC contact,

Back to Birmingham!

We are glad to announce that the WMCTC lectures for this year will be back at the University of Birmingham. The lectures will be held in the Haworth Lecture Theatre and will start at 7.00pm. All lectures are held on Tuesdays. The format gives 6th form students a better insight into life at university: having lectures in a university setting with real academics delivering the lectures; being able to see students and university facilities (both academic and non-academic) in everyday use.

The lectures are ticketed. They are free, the tickets allow us to make sure that we do not exceed the seating in the lecture theatre; the tickets are also used for a 'door prize' given at the end of the lecture.

To apply for tickets contact the Chair at wmctcchair@gmail.com

Autumn programme

Tuesday 27th September – TEACHERS ONLY (Zoom Event)

Interdisciplinary learning in Chemistry – Dr Matthew Simpson, King Edward VI High School for Girls

Interdisciplinary learning is an approach where pupils integrate knowledge and understanding from multiple disciplines to solve a problem or realise a vision. Young people are increasingly engaged with global issues such as climate change and plastic waste - problems that are complex and require an interdisciplinary approach. So has education failed to keep up with the real world? This talk will discuss why interdisciplinarity is important, what its benefits are to pupil learning, and what interdisciplinary learning might look like for a chemistry teacher.

There will be a short break in the event to conduct the ABM of the WMCTC.

For link please contact the [Chair](#) or [Secretary](#) for the Meeting

6th Form Lectures – All held in the Howarth Lecture Theatre , University of Birmingham

Tuesday 4th October

Colourful Chemistry – Dr Peter Hoare, University of Newcastle

Light is fundamental to life on our planet and the IYL aimed to showcase not only this but how scientists are developing new and more efficient ways of harnessing the energy from sunlight in a sustainable way for the benefit of mankind.

Similarly, our perception and recognition of colours are also fundamental to both our survival and our enjoyment of modern life.

This lecture will explore some processes in chemistry which either produce or use light energy under three themes of "reactions", "combustion" and "rates" with lots of colourful and sometimes dramatic demonstrations – with the occasional whoosh and even a bang!

Tuesday 18th October

Nuclear Energy and Chemistry - Dr Mark Read, Nuclear Waste Services and University of Birmingham

Dr Mark Read will give an overview of Electricity Generation from Nuclear Energy and the fundamental links with the University of Birmingham's Physics Department. A brief history of the UK Nuclear Industry will lead to the current climate and thoughts for the future as the UK Government commits to reducing CO₂ emissions 80% by 2050 whilst electrifying our transportation!

This lecture will also explore the important role that chemistry has to play throughout the nuclear fuel cycle, from purifying UO₂ and fabricating fuel pellets to reprocessing, recycling spent fuel and the safe immobilisation of High Level Waste. The second part will show how computational chemistry is employed to simulate the nuclear fuel crystal lattice and how the fuel performance and ageing effects may be predicted. So for those that thought that Nuclear Energy was only in the realm of Physics and Engineering - Dr Read is here to dispel those and other myths!

Tuesday 8th November

Chirality, Smells, Drugs and Chemistry - Dr. Simon Cotton, University of Birmingham

Many carbon compounds contain a chiral carbon. This leads to the existence of two "mirror-image" forms (enantiomers) of the same compound. Chemically they are identical, but they may behave differently in the human body, most tragically in the case of the sedative thalidomide. One form of thalidomide leads to birth defects of babies with defective limbs when administered to pregnant women; the other form does not. This talk will examine examples of how the presence of a chiral carbon may affect the properties of a drug.

The difference smells of the two isomers of carvone are also familiar to A-Level students; we will look at how the brain processes the information that comes from the receptors in the nose, and examine a number of cases where enantiomers have different smells, including the true story of the isomers of limonene.

Please keep an eye on the website – www.wmctc.co.uk for further updates and additions to the Autumn programme.

Spring/Summer programme (outline – details will follow)

Tuesday 31st January 2023

Fireworks – Dr. Tom Smith, Managing Director, CarnDu Limited

Tuesday 7th March 2023

Materials Chemistry (TBA) – Prof. Saiful Islam, University of Oxford

Tuesday 14th March 2023

WMCTC Quiz (Years 9 and 10) – details to come

Tuesday 21st March 2023

A-level Revision Session (Electrochemistry) – Dr Peter Hoare, University of Newcastle

In addition

Top of the Bench Quiz and annual national quiz help by the RSC for students from Year 9 to Year 11. Details for the local heats and full details for the competition here be found by following this link.

<https://chemreach.science/totb/>