July 2024

Environmental Chemistry Group

Bulletin

Meeting report: Killer Threads! The environmental impact of fast fashion was the topic for the 2024 ECG DGL and symposium. **Kiri Rogers** summarises this event (pp 5-6), and there are more detailed reports by two of the speakers, **Dr Thomas Stanton** (p 10) and the Distinguished Guest Lecturer **Dr Raquel Prado** (pp 11-13). **Sir James Bevan**, formerly Chief Executive of the UK Environment Agency recounts the highlights of his career to Cranfield University's **Niall Marsay** (pp 15-17).

Environmental Briefs: (pp 18-23) **Bence Solymosi** discusses catalytic systems for removing persistent organic micropollutants. **William James** assesses Li ion battery fire risks, and **Gemma Miller** details the sources and pathways of textile pollution.

Also in this issue: **Stephanie Powley** speaks about her role as an analytical chemist with British American Tobacco.

There is a book review from **Valerio Ferracci**.

Rowena Fletcher-Wood gives an outreach update.

Pablo Campo Moreno speaks for World Environment Day.

Laura Alcock has some horticultural insights, and we announce three upcoming meetings.

ECG Bulletin

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Interview

Book review

Indoor air pollution

Valerio Ferracci ((National Physical Laboratory, valerio.ferracci@npl.co.uk)

People in developed countries spend approximately 90% of their time indoors, however, indoor air pollution is often overlooked relative to outdoor air quality. This book[1] provides a comprehensive exploration of this issue.

Meeting report

Killer threads! Fast-Fashion's impact on the environment.

Kiri J. Rodgers (University of the West of Scotland, kiri.rodgers@uws.ac.uk)

The Environmental Chemistry Group's 2024 Distinguished Guest Lecture and symposium, held on 18th March at Burlington House, focused on environmental concerns surrounding fast fashion – from the pollution problems posed by the overproduction of clothing to ways of mitigating the environmental consequences of textile waste. **Dr Thomas Stanton**, **Professor Will Wise**, and our ECG

Dr Raquel Prado

Report

Outreach report 2024

Rowena Fletcher-Wood (freelance science communicator, rowena.fletcherwood@gmail.com)

In 2023, our events totalled ~170 meaningful outreach engagements from ~1400 festival attendees. So far in 2024, we have already exceeded this, with ~275 meaningful outreach engagements at just two festivals where these were measured – **ATOM Science Festival** in Abingdon, and **Dorchester Science Festival**.

But how do we measure these engagements?

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Ou Float or sink? ECG Bulletin, Jul 2022[1] ECG B Jul 2024 [2]

Why are there more this year?

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But what do the votes tell us?

In Float or sink?

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(58%) –

35% f

What next?

H To

References

[1] F ECG Bulletin, Jul 2022, p7.

[2] A E ECG Bulletin, Jul 2024, p10.

Article

DGL Feature: Microplastic and natural fibres

Dr Thomas Stanton (Loughborough University, t.stanton@lboro.ac.uk)

Microplastics (MPs) are one of the most well-known types of environmental pollution. A MP is any piece of plastic smaller than 5 mm (about the size of a circle on top of a Lego® block), and MPs come in a variety of shapes including beads, fragments, and fibres. These particles can be eaten by even the smallest animals, blocking their gastrointestinal tracts. MPs are also known to introduce chemical pollutants to the environments they pollute.

Article

DGL Feature: The textile industry and the environment

Dr Raquel Prado (Ananas Anam, raquel.prado@ananas-anam.com)

The garment industry has been transformed in the last century. Clothing is no longer regarded just as a commodity for protection from the environment or to fulfil the requirements of human decency, but is now subject to the whims of fashion and therefore to be replaced as fashion changes. The result? In industrialised countries, overproduction of clothing, limited usage, and disposal to ever expanding, but scarce, landfill sites.

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Anticipating the "cellulosic fibre gap"[5]

[illegible]

[illegible]

How To

Gardening: repelling pests and fertilising garden plants with minimal environmental harm

Laura Alcock (Edwards Ltd, laura.alcock@edwardsvacuum.com)

During the summer months, there is nothing more relaxing than sitting out in the garden during the evening sunshine – unless you are surrounded by biting insects. This is made all the more difficult when trying to avoid negative environmental impacts that can be common side-effects of insect repellents. This How To provides some suggestions for keeping gardens as the wonderful relaxing space they should be, without literally costing the earth.

Repelling biting insects

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Interview

Interview with Environment Agency Former Chief Executive, Sir James Bevan

Niall Marsay (Cranfield University, n.h.marsay@cranfield.ac.uk)

From November 2015 to March 2023, **Sir James Beva**n served as Chief Executive of the Environment Agency (EA). His extensive career encompasses roles such as UK High Commissioner to India, Chief Operating Officer at the UK Foreign Office, and Visiting Fellow at the Center for International Affairs at Harvard. Within the Foreign and Commonwealth Office, he has held senior positions in Washington, Paris, and Brussels. Sir James holds a BA (Hons) in Social Anthropology from the University of Sussex. He received the Companion of the Order of St Michael and St George (CMG) in 2006 and was knighted in 2012. Additionally, he was granted an Honorary Doctorate by Sussex University in the same year.

Do you feel like the quality of the environment has changed in your lifetime?

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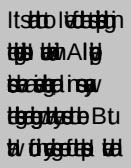
In some of the recent talks. You stated yourself as an evidence-based optimist. Given that there's so much negative news on sewage pollution, emerging contaminants, and climate inac

ItÕs really good to hear that you had passion while you were there.



And what about the heavy industries we rely on abroad?

ECG Environmental Brief No. 40 **ECGEB No. 40**

Bence Solymosi (University of Leeds, cmbs@leeds.ac.uk)

There are increasing concerns about the adverse health effects, including endocrine disruption, of persistent organic micropollutants. At present, industrial water treatment plants lack the technologies to remove these particular contaminants. The most common experimental approaches use oxidation by ozone or activated hydrogen peroxide, but these suffer from significant drawbacks, including high costs and the introduction of secondary pollution. A promising alternative is to use catalytic systems that require no activation, and thus maximise efficiency.

Pollutants of emerging concern

LIB fires and the extent of HF exposure

Upcoming meetings

Circular Chemistry: Carbon Capture and Storage

Where: The Royal Society of Chemistry, Burlington House, London, W1J 0BA

When: 9th September 2024, 9:30-17:30

Synopsis

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Registration

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The Place of Chemistry in a Doughnut Economy

Where: The Royal Society of Chemistry, Burlington House, London, W1J 0BA

When: 14th October 2024, 11:00-16:30

Synopsis

[illegible] ECG [illegible]

Registration

Register here: [illegible]

RSC members: £50

Non-members: £70

Student rate (members): £35

Student rate (non-members): £55

Online attendance: 30% off above rates.

Air Quality in the 21st century

Where: The Royal Society of Chemistry, Burlington House, London, W1J 0BA

When: 9th December 2024, 10:00-17:00

Synopsis

[illegible] DEF [illegible] (AQEG) [illegible]

Abstract Submission

A call for abstracts will be announced in September 2024, where we will invite delegates to present their latest research as either a platform presentation or as a poster.!

Registration

Registration details tba.