

Water Challenges in a Changing World

AUGUST NEWSLETTER

Hello everyone, we hope you are enjoying your summer break! This is a very short newsletter, just to update you on a few key things. We will return to our full newsletter in September, so see you then!



WATER THEME MEETING

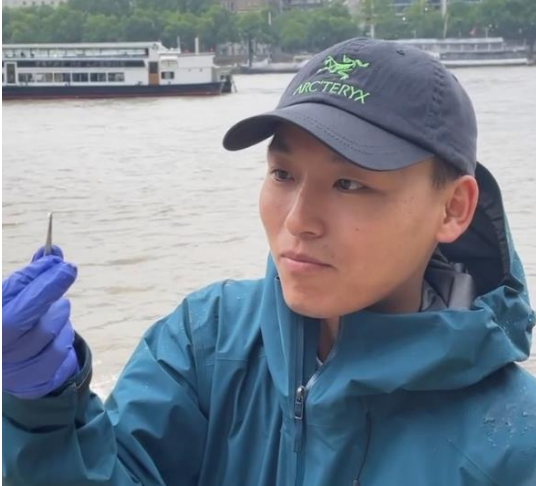
The next Water theme meeting will be held on the **4th of September** from 1pm to 2pm, online and in room G08 at Elm House. This meeting will be to discuss the Water Centre development, and we recently sent an email around to all asking you to update our spreadsheet with any of your Water theme generated income. Thank you to everyone who took the time to do this.

We will also be discussing our phasing out from the extremely supportive IGI, who we have been grateful to fall under for the last 4 years. The IGI will be supporting us with £20k of funding for 2024/2025 to help us phase out and we will discuss how to best utilise this at the next group meeting.



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WATER SEMINAR SERIES SEPTEMBER



You are invited to attend our next Water Seminar Series talk where we welcome [Dr Nan Wu](#) from the British Antarctic Survey. This talk will be taking place on the **19th September from 12pm – 1pm** at Elm House, **room G08** and will be followed by a networking lunch in G05. The link for this talk has been sent around but please contact Suman if you need it resent to you.

Title: Flocculation as Vectors for Microplastics in the Aquatic Environment

Abstract: Microplastics (MPs, plastic debris < 5 mm) are a significant component of suspended particulate matter (SPM) in the aquatic environment. Flocculation is a critical process that controls the fate and transport of fine SPM (< 63 μm) and associated MPs. Despite its importance in MP pollution management, understanding and predicting MP flocculation and hence transport remains challenging. We investigated the influence of MP properties and aquatic environmental conditions on MP flocculation and transport through a multi-disciplinary experimental, meta-analysis and modelling approach. Combining laboratory experiments and a meta-analysis, we explained the interaction mechanisms between MPs and flocculation and identify MP and floc size as key parameters for predicting MP flocculation. Using the relationship between floc size and MP size, we derived a mathematical model (boundary curve) to predict whether MPs can be transported as flocculation according to their sizes. Based on the boundary curve, we reconstructed the sedimentation trajectory for small buoyant microplastics (polyethylene) with marine snow aggregates (MSAs, marine flocculation) in the ocean using a theoretical model. This demonstrated that buoyant MPs from the ocean surface need multiple cycles of aggregation and disaggregation with MSAs to get to the deep-sea sediments. This offers broad implications for the long-term management of MP pollution in marine environments.

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Bio: Dr. Nan Wu is a marine ecological modeller (postdoc) at the British Antarctic Survey, focusing on how microplastics influence the carbon biological pump in the Southern Ocean. Nan earned a PhD in Physical Geography from Queen Mary University of London, where his research centered on understanding how flocculation influences microplastic transport in aquatic environments. Nan has over seven years of research experience on microplastics in various environments, ranging from rivers to coastal and marine ecosystems. His work encompasses fieldwork, laboratory research, modeling, and meta-analysis.

UNCCD 16TH SESSION OF THE CONFERENCE OF THE PARTIES



The sixteenth session of the Conference of the Parties (COP16) of the United Nations Convention to Combat Desertification (UNCCD) will take place in Riyadh, Saudi Arabia, from 2 to 13 December 2024. Click [here](#) for more information.

WELCOME TO ALI MASHADI

“I am currently a PhD researcher at the University of Birmingham and UK Centre for Ecology and Hydrology (UKCEH). My research focuses on evaluating and development of impact-based forecasting framework for floods that has been developed as part of The Weather and Climate Science for Service Partnership India (WCSSP-India). I studied Earth Sciences (MSci) at the University of Cambridge where I studied and researched topics such as natural hazards and climate records. My work is driven by a commitment to advancing our understanding of environmental risks and improving resilience against climate-related challenges.”



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ENVIRONMENTAL MICRO – AND NANOPLASTIC IDENTIFICATION AND CHARACTERISATION WORKSHOP



Environmental Micro- and Nanoplastic Identification and Characterisation Workshop

27 - 31 January 2025
Elm House, University of Birmingham

In partnership with the Birmingham Institute for Sustainability and Climate Action and the Institute for Global Innovation

We train
We activate

birmingham.ac.uk



We are excited to announce the launch of our new Winter workshop – **Environmental Micro and Nanoplastic Identification and Characterisation Workshop**. This workshop will run in person from the **27th - 31st January 2025**. It is designed for PhD students, postdocs and professionals. The course is taught by Prof Stefan Krause (University of Birmingham) and his team. It is supported by the [Water Research Centre](#), [BISCA](#) and [IGI](#).

Our comprehensive course offers hands-on training and practical experience in various microplastic sampling, processing, and analysis techniques for aquatic and terrestrial environments. Participants will gain valuable insights into sediment extraction methods as well as advanced microplastics characterization techniques.

In the rapidly evolving field of microplastics research, standardization and robust protocols are crucial. A key focus of this course is addressing and demonstrating standardized protocols, along with in-depth discussions on contamination

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mitigation and control, repeatability, and reproducibility of samples for accurate quantification.

The course covers the following key aspects:

- Introduction to microplastic sampling methods in aquatic and terrestrial environments
- Overview of the microplastics analysis pipeline
- Global case studies showcasing standardized methods
- Hands-on training in microplastic sample collection methods (soil, water, and air)
- Practical experience in sample processing (density separation and digestion methods)
- Theory and application of various quantification methods (Fluorescence microscopy, Raman and FTIR spectroscopy, and pyrolysis-GCMS)
- Identification and discussions on contamination control and mitigation strategies
- Discussions on ensuring the repeatability and reproducibility of studies
- Dedicated time for project-specific discussions with experienced microplastic researchers

Our comprehensive curriculum is designed to equip participants with the knowledge and skills necessary to conduct rigorous and reliable microplastics research. Join us and gain invaluable insights from leading experts in the field.

[Buy your tickets here](#)

EVENTS OF INTEREST

- [EuroTox 2024](#), 8-11 September 2024, Copenhagen, Denmark
- [Microplastics workshop for Early Career Researchers](#), 8-13 September 2024, Idstein, Germany
- [NanoInnovation](#), 9-13 September 2024, Rome, Italy

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- [BioNanoNet Annual Forum & BNN Networking Session – Satellite Event of the ECCPM Forum on “Sustainability in Pharma”](#), 12 September 2024, Graz, Austria – **benefit from a 25% discount on the ECCPM registration fee – the Annual Forum & Networking Event are free of charge!**
- [IPCEI Microelectronics Workshop @ NanoInnovation 2024](#), 12 September 2024, 14:00-17:30 CEST, Rome, Italy & online
- [The 2024 European Congress on Alternatives to Animal Testing](#), 18-20 September 2024, Linz, Austria
- [NanoTox 2024](#), 23-25 September 2024, Venice, Italy & online **(EU H2020 projects) NMBP-16 Joint Final Conference**
- [NMBP-16 joint Open Event](#), 25 September 2024, Venice, Italy & online – **SAVE THE DATE**
- [European Researcher’s Night “Life is Science in a World Turned Upside Down”](#), 27 September 2024, Graz, Austria
- [Smart Materials and Surfaces – SMS 2024 International Conference](#), 23-25 October 2024, Barcelona, Spain
- [SSbD24 Conference](#), 10-15 November 2024, Monte Verità, Switzerland
- [MEDICA & COMPAMED 2024](#), 11-14 November 2024, Düsseldorf, Germany
- [SusChem-AT Focusday 2024 & CHASE Expert Days](#), 19-20 November 2024, Vienna, Austria
- [MADNano24 – Madeira International Conference on Emerging Trends and Future of Nanomaterials for Human Health](#), 28-30 November 2024, Funchal, Madeira Island

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- [NANO.IL.2025](#), 9-11 March 2025, Jerusalem, Israel **Abstract submission deadline 5 Nov. 2024**
- [ECerS XIX – Conference of the European Ceramic Society](#), 31 August – 4 September 2025, Dresden, Germany

UPCOMING GRANTS

[Fulbright Scholar: Canada: Research Chairs in Environmental Studies](#)

Deadline to apply: 16/09/2024

Award amount: \$25k

Fulbright Canada Research Chairs are pre-arranged affiliations to host exceptional scholars who conduct research important to that university. Partner universities are excited to welcome Fulbright Canada Research Chairs into campus life and encourage them to engage with students and faculty, and the broader community.

[Hello Tomorrow: Deep technology global challenge](#)

Deadline to apply: 22/09/2024

Award amount: €100k

Hello Tomorrow invites applications for its deep technology global challenge. This supports scientists and entrepreneurs in developing new deep technology research and projects

[EPSRC - Accelerating research outcomes to deliver a prosperous net zero: full application](#)

Deadline to apply: 24/09/2024

Award amount: £100-800k

Apply for follow-on funding to build on existing engineering and physical sciences research outputs to accelerate economic, societal, policy and environmental benefits. The proposed benefits must contribute to delivering Engineering and Physical Sciences Research Council (EPSRC)'s Engineering Net Zero (ENZ) priority.

[BBSRC – Standard research grant round 3 responsive mode](#)

Deadline to apply: 25/09/2024

Award amount: £2M

Standard research grants are available for researchers at eligible research organisations. This scheme supports excellent investigator-led research across the breadth of Biotechnology and Biological Sciences Research Council (BBSRC) scientific remit.

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[SIWI – Stockholm Water Prize](#)

Deadline to apply: 30/09/2024

The Stockholm Water Prize recognizes people and organizations who have made outstanding contributions to the sustainable use and protection of the world's water resources

[EPSRC - Engineering Healthier Environments: Micro Network and Micro Network Plus](#)

Deadline to apply: 02/10/2024

Award amount: £600k

Apply for funding to develop an interdisciplinary Micro Network or Micro Network Plus focused on developing new and existing collaborations within the topic of engineering healthier environments. Your network can last up to 24 months.

[NERC - Addressing environmental challenges: NERC highlight topics 2024](#)

Deadline to apply: 09/10/2024

Award amount: £2.35M

Apply for funding to address one of five environmental research challenges. We encourage multidisciplinary research and collaborations with other UK organisations, and applications from diverse groups of researchers.

[NERC - Delivering training courses for environmental scientists 2024](#)

Deadline to apply: 15/10/2024

Award amount: £60k

Apply for funding to deliver training short courses within the NERC remit, focusing on areas of identifiable training need.

[NERC – Large grant](#)

Deadline to apply: 12/11/2024

Award amount: £1.2-3.7M

Apply for funding to support innovative, large-scale and complex projects that tackle big science questions and have potential to produce world-leading research.

[ITPOF – R&D Award](#)

Deadline to apply: 02/12/2024

Award amount: £60k

The ITOPF R&D Award is open to any reputable R&D establishment or other organisation worldwide intending to fund a candidate (individual or project team) to undertake research. Applications are invited from all academic disciplines, although preference will be given to those with an applied scientific focus, such as marine biology, chemistry, ecology, physics, engineering and economics.

[EPSRC/NERC – Sustainable Industrial Futures](#)

Deadline to apply: 11/12/2024

Award amount: £26M

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This is a £26 million (80% full economic cost (FEC)) seven year, flagship investment focused on tackling cross-sectoral research challenges rooted in excellent, leading-edge engineering, physical and environmental sciences and transdisciplinary approaches to enable the transition of UK industrial manufacturing processes and operations to net zero.

Open Calls with no closing date:

[IGB: Leibniz Institute of Freshwater Ecology and Inland Fisheries – Senior Fellows](#)

We invite excellent established scientists to apply for a research visit at IGB. We offer stays for 3 to 12 months to enable senior scientists to contemplate and pursue new inspiring research ideas in collaboration with scientific staff at IGB. At the time of application, successful candidates can be based at institutions in any country worldwide except Germany. Scientists residing in Germany are not eligible to apply, independent of their nationality.

[NERC Urgency Fund \(£100k\)](#)

Apply for funding to respond quickly to transient and unexpected scientific opportunities.

[UKRI – Knowledge Transfer Partnership](#)

Open for business and not-for-profit organisations. Partnerships can last between 12 and 36 months. Business provide one-third to half the project cost depending on their size.

[NERC - Work with US-based researchers on environmental science research](#)

Award amount: £300k Apply for funding to work with US-based researchers on an environmental science application. Collaborative work is governed by an agreement between NERC and NSF.

[Work with Brazilian researchers: NERC FAPESP lead agency](#)

This opportunity allows UK-based researchers and researchers in the State of São Paulo, Brazil to submit a collaborative proposal under existing NERC funding opportunities. This will go through a single review process.

[UKRI - Collaborate with researchers in Norway](#)

UK Research and Innovation (UKRI) and Research Council of Norway (RCN) have signed a Money Follows Cooperation agreement to reduce barriers to cross-border collaboration.

[UKRI - Collaborate with researchers in Luxembourg](#)

UK Research and Innovation (UKRI) and FNR have signed a memorandum of understanding (MoU) to welcome and support collaborative applications. The MoU

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provides for a lead agency agreement whereby UKRI will receive and assess joint applications from eligible UK and Luxembourg applicants on behalf of both organisations.

We welcome your contributions and suggestions for the newsletter. Please feel free to email Liam and Suman – l.kelleher@bham.ac.uk / s.hira@bham.ac.uk

