



RSC ABG Newsletter

1st issue Winter 2023/2024

Dear Readers, fellow RSC –ABG members,

With great pleasure we are sharing this very first issue of our group's newsletter.

Please send your feedback and any content for the next issue by emailing the group email (rsc.abg@gmail.com)

In this newsletter and any upcoming issues, we hope to give you details on

- What the Group and our committee is up to.
- What events we have lined up for the year (ECRM, AGM)
- What our members are up to – by sharing any topics they would like to highlight.

You can learn more about the group on our website
[RSC ABG Website on rsc.org](https://www.rsc.org/analytical-biosciences)

The ABG Committee

We are a small group of RSC members who volunteer to be part of the Analytical Biosciences Group Committee

Officers

Chair: Dr Henry Day

Treasurer: Dr Eamonn Reading

Secretary: Dr Nikola Chmel

Who we are?

General Members:

Prof John Hunt (immediate past Chair)

Dr Frankie Rawson (immediate past Treasurer)

Prof Mark Dickman

Dr Stefanie Frank

Dr Lynn Dennany

Dr Carlos Fernandez

Dr Krisztina Radi

Dr Andrew Kenyon

ECRM 2024 Register NOW!

The 2024 Annual RSC ABG ECRM meeting will be held in Nottingham this year.

For more details, please visit the registration page:
[11th RSC Analytical Biosciences Group Early Career Researcher Meeting](#)

Registration Deadline is fast approaching

Analytical | Biological | Chemical Biology & Medicinal | Food | Human Health | Industry | Physical

11th Analytical Biosciences Group Early Career Researcher Meeting 2024

14 - 15 March 2024, Nottingham, United Kingdom

[BOOK NOW >](#)

Introduction

Welcome to the Royal Society of Chemistry Analytical Biosciences Group Early Career Researcher Meeting (ECRM 2024). The meeting is open to everyone, and aims to engage early career researchers in debate and discussions about all areas of analytical biosciences, and provide the opportunity to build networks with other researchers in the field.

A number of keynote speakers have been invited who will give their perspectives of the analytical biosciences from academia and industry. This will be followed by presentations from early career researchers. Together, this will provide an overview of current research into new technologies and applications of analytical chemistry in biological science.

Deadlines

Feb 01 2024	Early bird registration deadline
Mar 08 2024	Standard registration deadline

Downloads

[Abstract Submission Template](#)



ECRM 2023

In March 2023 the Analytical Biosciences Group organized its 10th Early Career Research Meeting Location Illumina EMEA Head Office, Granta Park Cambridge

Program from last year can be found on the event's page
<https://www.rsc.org/events/detail/75110/10th-analytical-biosciences-group-early-career-researcher-meeting-2023>
[Full Program](#)

Our 2023 ECRM was held at Illumina Cambridge at the end of March, we had a fantastic 2 day filled with exciting science.

We had several oral presentations by Industry and Academic leaders, and it was great opportunity to hear about what early career researchers are working on. Attendees also had the chance to tour our host Illumina's customer solution center laboratory.



Following our traditions, we awarded the best poster and best oral presentations at the ECRM. Sponsored by the RSC's journals *Analyst* and *Chemical Science*

Oral Presentation Award Winner
Ruby Brown, University of Nottingham

Poster Presentation Award Winner
Pallavi Dutta, University College Dublin

Learn More About our 2023 ECRM Winners 😊

Ruby Brown – Talk Prize Winner

Having the opportunity to attend a conference and give a talk as an MRes student is a rare opportunity, and I am extremely grateful to the ABG ECRM for providing a safe space for myself and others to present our research. Before attending, I had built up a perception of all conferences being a sink-or-swim environment, where I would come up against others who are much more established in their careers, which is why it was really special to have been provided with a space dedicated to researchers early on in our careers. The ABG ECRM provided us with the chance to be at the forefront of the event and share our own research findings. It also provided me with the opportunity to practice my networking and presenting skills surrounded by peers who were all at similar stages of their careers to me.



I presented my MRes research, on the development of gold nanoparticle-silica core-shell encapsulated nanodiamond quantum sensors. Fluorescent nanodiamonds are an example of a quantum sensor that has seen increased use in biomedicine. Current quantum sensors lack the sensitivities to be able to accurately detect minute changes in their environment. I aimed to hijack the properties of nanodiamonds to develop a real-time quantum sensor capable of detecting electron tunnelling events. By encapsulating these nanodiamonds in mesoporous silica alongside bipolar functionalised gold nanoparticles, and the application of an electric field, a detectable electron tunnelling event can be generated and monitored by analysing changes in the fluorescent emission of the nanodiamonds. The hope is that the creation of this quantum sensor can provide direction for other quantum biological nanotechnologies, allowing for further understanding and enhancement of biological processes that have previously been overlooked, unlocking new possibilities within the world of biomedicine.

It was nerve-racking presenting my work at the ABG ECRM, I did not know how people were going to respond to me and how my research was going to be received. However, the atmosphere was relaxed and supportive, everyone was receptive, and people asked well-thought-out questions that showed that they were engaged. Being awarded a prize for my talk really meant a lot. Receiving this prize, at the start of my research journey, has really given me a boost in confidence and encouraged me to continue to share my research.

Currently, I am in the latter stages of writing up my MRes thesis and I look forward to completing and presenting it as a keynote speaker at this year's Analytical Biosciences Group General Meeting. I have also just started my PhD, and I am a part of a CDT in Transformative Pharmaceutical Technologies, which I have been thoroughly enjoying so far. While unfortunately, other commitments keep me from attending next year's ABG ECRM, I will be keeping an eye out for any of the research presented by the attendees and I hope to attend again at some point during my PhD.

Learn More About our 2023 ECRM Winners 😊

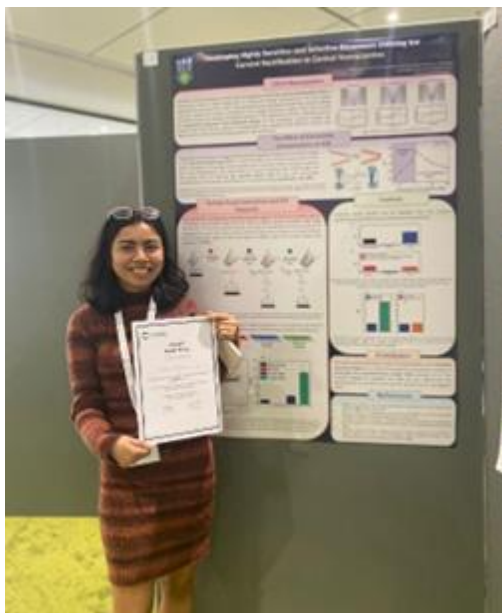
Pallavi Dutta – Poster Prize Winner

It was truly an amazing experience presenting my research in a poster format at the 10th Analytical Biosciences Group Early Career Research Meeting 2023. I shared my research on the “Development of Sensitive and Selective Biosensors Utilizing Ion Current Rectification in Conical Nanopipettes”. My research aims at developing biosensors utilizing quartz nanopipettes based on the interesting ion transport phenomena exploited at nanoscale called Ion Current Rectification. The objective of this project is to combine the advantages of working with electrochemistry alongside exploring the nanoscale regime to develop sensitive, rapid, cost-effective devices with possibility of integrating into point of care diagnosis system for detecting infectious pathogenic diseases.

The conference itself was enriching and insightful as it provided me the opportunity to not only share my research but also engage with researchers from diverse subfields within analytical biosciences. This opportunity allowed me to gain insight into cutting-edge research in the field and engage in valuable discussions with my peers. The networking aspect was particularly enriching, as I connected with fellow PhD students and postdocs, fostering the possibility of future collaborative research efforts. Moreover, one-on-one conversations with presenters during the poster session deepened my understanding of their work, making it a highly informative experience.

Receiving the poster prize was a significant highlight of the conference. It was a validation of my research and serves as a source of motivation to continue pushing the boundaries of my work. The positive feedback on my poster style and presentation skills further encouraged me to consider an oral presentation at future events.

Looking ahead, I am excited about attending more events organised by the RSC and hope to contribute through oral presentations in the future. This experience has truly energized my commitment to advancing research and making a meaningful impact in the field.





AGM November 2023 & Past Activities

- Read our chair's article on our Autumn AGM

<https://www.linkedin.com/pulse/highlights-from-analytical-biosciences-group-agm-event-henry-day-t8gjc>

- Here are some links to previous articles online if you want to learn more about what we were up to in previous years

<https://www.rsc.org/news-events/community/2018/may/from-food-fraud-to-forensics/>

<https://www.rsc.org/news-events/community/2017/apr/abg-ecrm/>



Knowledge Sharing

As promised here are some topics, publications to highlight from our members

- Christopher R. Lee, Robert Gordon University has sent this to us

Summary

Na,K-ATPase generates the eponymous gradient across the plasma membranes of most of the higher eukaryotes that drives numerous essential cellular functions. A small-molecule regulator has been thought likely for more than half a century. Failure to find it can be attributed almost exclusively to persistently inappropriate choices of separation and identification methods.

Suggested further reading by Christopher

Endogenous Digitalis-like Factors as a Key Molecule in the Pathophysiology of Pregnancy-Induced Hypertension and a Potential Therapeutic Target in Preeclampsia.

Socha, M.W.; Chmielewski, J.; Pietrus, M.; Wartega, M.
Int. J. Mol. Sci. 2023, 24, 12743. <https://doi.org/10.3390/ijms241612743>

- Celeste Felion's first publication from her PhD – Congratulations 🎉

Title: **BODIPY-Labeled Estrogens for Fluorescence Analysis of Environmental Microbial Degradation**
Journal/Year/DOI: *ACS Omega* 2022 DOI: 10.1021/acsomega.2c05002

This publication combines state-of-the-art organic synthesis of BODIPY-estrogen conjugates, robust analytical method development for quantification of the fluorescent probe, and a novel bioanalytical method for characterising microbial degradation. The focus on a practical application for the use of fluorescently-labelled substrates – demonstrated here specifically in environmental biotechnology, but is translatable to other applications – will be of interest to Analytical Biosciences Group.

Share your own work

Part of being a member of the RSC is to allow one to build professional networks, meet people with similar interest and even find opportunities to collaborate.

If you are a student and would like to highlight your first Publications on your research – we would like to offer you that opportunity.

The Analytical Biosciences group would love to help you by creating a platform of sharing News about you, our members with other members of our group.

We would like to hear about your scientific achievements, your publications or conference participations and presentations which you would be happy for us to share with our members. We are hoping to highlight the work of our members and share the knowledge you all work hard to build day by day.



What we need:

- Details of publication: Title, Journal, etc and a 50 words summary on why you think our members would benefit reading it
- Conference Participation – initial motivation to attend, what you liked about the conference, and who do you think would benefit from attending in the future
- Presentations – conferences, webinars – not all our members are academics, and our work may get presented, but not published – let us know if you have recently had the opportunity to showcase your work somewhere online or in person

Or do you just have an analytical topic you are passionate about and would like others to learn more too – we welcome short high level summary articles written by our members.

Please drop us an email (rsc.abg@gmail.com) if you are interested in helping us help you sharing knowledge and highlighting your work.



Join Our LinkedIn Group

[RSC ABG LinkedIn Group Page](#)