



Minutes of the 2023 AGM of the Engineering, Physical and Material Sciences Section of the Royal Microscopical Society which was held on Wednesday 5 July 2023 during mmc2023 held at Manchester Central, Windmill St, Manchester, M2 3GX

Members present: Roland Kröger FRMS, Trevor Almeida, Asa Barber, Matthew Bilton, Sean Collins, Roland Fleck FRMS, Patricia Goggin FRMS, Louise Hughes FRMS, John Hutchison Hon FRMS, Adriana Klyszejko FRMS, Leonardo Lari, Leandro Lemgruber, Kirsty MacLellan-Gibson, Jon Moss, Fabio Nudelman FRMS, Dogan Ozkaya FRMS, Dick Paden Hon FRMS, Julia Parker, Clare Steele-King, Lore Troalen FRMS, Paul Verkade FRMS, Alharbi Yousef and Allison Winton (RMS Chief Executive).

1. Apologies for Absence

Apologies for absence had been received from: Peter O'Toole FRMS (RMS President) and Susan Anderson FRMS (past RMS Vice President).

2. Minutes of the 2022 Annual General Meeting

The minutes were approved as a true and accurate record of the meeting.

3. Matters Arising

There were no matters arising.

4. Report from Section Chair

The Section Chair gave the following report:

“The EPMS committee represents the broad and interdisciplinary engineering, physical and materials science community, who use advanced microscopy and spectroscopy-based techniques to address engineering and physical science problems. We engage in a wide range of EPMS activities such as workshops, seminars and conference sessions concentrating on scientific themes that aim to improve our understanding of materials, machines and engineering systems including energy and energy storage, biomaterials, structural/geological materials, advanced 3D manufacture, devices, and surface engineering.

The year 2022/23 saw a number of activities indicating that our section has moved on strongly from the COVID lockdown period. In this context I wish to highlight the particularly great engagement of EPMS committee members e.g. in organising interdisciplinary mmc2023 sessions as well as workshops and the International Microscopy Lecture Series (IMLS). It has to be mentioned here that members of our section are not only active on their own committee but also engage in the Outreach and Education Committee and the X-ray FIG.

Past Activities:

As a now regular and highly successful event a focused Ion Beam Workshop was organised by Xiangli Zhong in Manchester including FIB based structuring and sample preparation, which ran on 27 October 2021 and had more than 200 registered participants. Xiangli will Chair a FIB session and workshop at mmc2023.

A joint meeting was held between the EPMS and the EM committee in March 2023, which was found very useful to inspire cross-sectional interactions within the RMS and to develop new ideas for collaborative events (e.g. the X-ray FIG originated from our 2019 joint meeting).

The International Microscopy Focus Lecture Series (IMLS) with Grace Burke and Roland Kröger as RMS representatives of the Organisation Committee, has developed into a regular feature of microscopy related activities with international visibility. This webinar-based lecture series reflects the pioneering work of world leading scientists working with microscopy as their core tool. Each scientific presentation is accompanied by an interview providing intriguing insights into the lives and work of these eminent contributors to the progress of microscopy. This year saw exciting presentations and interviews by and with Frances Ross, Archie Howie, Christian Colliex and Sumio Iijima. About 120 registrations for these events indicate the strong resonance of this activity within the international community. The growing IMLS “archive” provides a wonderful background to the RMS

work for future generations of microscopists who want to hear first-hand from pioneers and leaders in the microscopy field.

Current Activities

Mmc2023 - EPMS members are making an impact on RMS activities by being involved in a range of cross-disciplinary mmc2023 sessions such as Dogan Ozkaya and Julia Parker with a session on Multiscale and Correlative Microscopy, Xiangli Zhong co-Chairing sessions on the FIB Applications & EM Sample Prep Techniques in the Biological and Physical Sciences, Alison Parkin (Green Chemistry, University of York) was invited by the EPMS section to co-organise a session on Materials for Sustainability and Carbon Net Zero. These events are currently taking place at this mmc2023. We are also delighted that Natalie Reznikov, a former member of our committee, will receive the RMS Award for Innovation in Applied Microscopy for Engineering, Physical and Materials Sciences to honour her contributions to the development of machine learning based approaches for the high-resolution 3D characterisation of biomineralizing systems and Xiangli Zhong will be awarded the Vice President's Award for her contributions to the wider microscopy community.

X-ray FIG - Members of the EPMS committee are active in the X-ray Focused Interest Group (FIG) created in 2021 led by Liz Duke and Charlie Wood jointly with EPMS section member Julia Parker. This FIG has regularly met and grown in the last years discussing the promotion of X-ray based characterisation techniques and organising events such as an mmc session to reach out to the general RMS community and to encourage them to use these methods across the disciplines and complimentary to tools like electron and light microscopy. It is suggested that the X-ray FIG should transform into an RMS Section.

FIB-SEM preparation meeting - This event took place in November 2022 with Xiangli Zhong as chief organiser and with almost 200 participants, which shows the strong resonance of this now regular RMS event, which we suggest should become a regular event in the RMS calendar probably taking place every other non-mmc year.

In situ Microscopy and Spectroscopy workshop - This workshop discusses cutting-edge techniques for in situ studies of materials across the physical/life sciences using electron microscopy and synchrotron techniques and is organized by Julia Parker, Manfred Schuster and Roland Kröger to take place in September at the Diamond Light source.

Faraday Discussion - Fabio Nudelman and Roland Kröger will organise jointly with the Royal Society of Chemistry a Faraday Discussion on Multiscale-Imaging of Biomineralisation to take place in 2025 in Edinburgh. This is a cross-disciplinary event including characterisation techniques bridging the length-scales. It will address key questions regarding the mechanism of different biomineralising systems relevant for a variety of fields such as biomedicine, geochemistry and archaeology.

Outreach - With Anna Baldycheva our Section has a highly active member on the Outreach and Education Committee, which is so important to promote the RMS and inspire the next generation's curiosity in microscopy.

New roles and new members - I will be stepping down from the Chair's position and as a member of the RMS Council and become Vice-Chair of the EPMS committee in the coming year with Anna Baldycheva taking over as Chair and Julia Parker becoming Deputy Chair. Some changes to the makeup of our committee have taken place with Duncan Muir, Beverley Inkson and Nyree Manoukian leaving our Section. We are delighted to welcome new members: Xiaohui (Helen) Chen (University of Manchester), Leonardo Lari (University of York), Matthew Bilton (University of Liverpool), Sean Collins (University of Leeds) and Sergio Bartazzo (University College London). I wish to thank all outgoing members for their invaluable contributions and warmly welcome the new members in anticipation of many more exciting microscopy events organised by the EPMS section.

Last not least, I would like to thank the fantastic RMS staff who have shown such an impressive level of dedication, creativity and positivity (and resilience...) in the last year. I want to express my gratitude to Allison Winton for her unrelenting support over all those years and Jade Sturdy for her immaculate assistance to record keeping and meeting preparations, without whom I would have been lost."

5. Election of Officers

There being no other nominations, the following Officers were duly elected:

Chair: Anna Baldycheva, University of Exeter
Vice Chair: Roland Kröger, University of York
Deputy-Chair: Julia Parker, Diamond Light Source

6. Election of Ordinary Members (8)

There being no other nominations, the following Ordinary Members were duly elected:

Trevor Almeida, University of Glasgow
Sergio Bartazzo, University College London
Xiaohui Chen, University of Manchester
Dan Haspel, Oxford Instruments
Igor Meglinski, Aston University
Fabio Nudelman, University of Edinburgh
Manfred Schuster, Johnson Matthey
Jane Woolrich, Rolls Royce

In addition to the nominated Committee Members, Matthew Bilton, Sean Collins, Leonardo Lari and Xiangli Zhong have been co-opted onto the Committee and Marcus Yio has been co-opted as the Early Career Representative.

Paul Gunning and Dogan Ozkaya will also be invited to attend meetings to represent the RMS Council.

7. Any Other Business

There was no other business.

***Non-members present:** Xiaohui Chen and Simon Fairclough