

Materials & Devices

Volume 1 Issue 3
17th August 2022

Hello everyone and welcome to the 3rd issue of Materials and Devices newsletter!

I hope everyone is enjoying the summer months, and taking advantage of the slower pace around the university before the new term starts.

Suggestions and ideas are always welcome. If you have any ideas for the next newsletter please send them in.

Please email items for the next newsletter to [Ellie White](mailto:Ellie.White@bristol.ac.uk) (zl21970@bristol.ac.uk)

Thesis Submittals

Congratulations are in order for the following thesis submittals; [David Kumar](#) (IAC) , [Ian Ang](#) (IAC) and [Sam White](#) (IAC) .

New M&D Doctorates

Congratulations are in order for the following:

[Dr. Alicja Szczepanska](#) (Surf Phys) passed her viva with minor corrections and has taken a PDRA position with Prof Jonathan Reid at the Bristol Aerosol Research Centre in the School of Chemistry.

[Dr. Paul Forna Kreutzer](#) (EMAM) passed his viva with minor corrections & is continuing his work on oxide-oxide ceramic matrix composites as a PDRA in EMAM.

[Dr. Angus Siberry](#) (IAC) passed his viva and is now finishing his work at his spin out company, Science Software Development Ltd, before then moving onto to being a software developer for Accenture.

[Dr. Taylor Moule](#) (CDTR) passed his viva and has taken a role as a PDRA at the Ferdinand-Braun Institute, Germany.

[Dr. Filip Wach](#) (CDTR) passed his viva and has taken a role as a senior engineer at Infineon.

Farewells

A fond farewell to [Dr. Abishek Mishra](#) (CDTR) who will be leaving us in October to join the Institute of Materials Research and Engineering (IMRE) Agency for Science, Technology and Research (A*STAR) in Singapore.

Recent Publications

[Yuke Cao](#), [Dr. James W Pomeroy](#), [Prof. Michael J. Uren](#), [Feiyuan Yang](#) and [Prof. Martin Kuball](#) (CDTR) have a paper published in Applied Physics Letter titled “Edge termination in vertical GaN diode: Electric Field Distribution probed by second harmonic generation”, a link to the publication can be found [here](#).

A full list of papers that were submitted to CS Mantech as part of the CS Mantech ‘22 conference can be found below:

[Dr. Hyun-Seop Kim](#), [Prof. Michael Uren](#) and [Prof. Martin Kuball](#) (CDTR) submitted a paper to CS Mantech titled “Dynamic R_{on} in AlGaIn/GaN Structure with Different Layer Thickness”, a link to the publication can be found [here](#).

[Dr. Zeina Abdallah](#), [Dr. Nathawat Poopakdee](#), [Dr. James W. Pomeroy](#) and [Prof. Martin Kuball](#) (CDTR) submitted a paper to CS Mantech titled “A Novel Thermoreflectance-based Method for in-situ Die Attach Thermal Conductivity Assessment of Packaged Devices”, a link to the publication can be found [here](#).

[Yuke Cao](#), [Prof. Michael Uren](#), [Dr. James W. Pomeroy](#) and [Prof. Martin Kuball](#) (CDTR) submitted a paper to CS Mantech titled “Design and Manufacture of Edge Termination in Vertical GaN Diodes: Electric Field Distribution Probed by Second Harmonic Generation”, a link to the publication can be found [here](#).

[Dr. Daniel E. Field](#), [Dr. Filip Wach](#), [Dr. James W. Pomeroy](#) and [Prof. Martin Kuball](#) (CDTR) submitted a paper to CS Mantech titled “Differences in SiC Wafer Thermal Conductivity from Face-to-Face Dependent on Polishing”, with the publication linked [here](#).

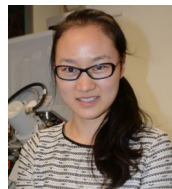
[Dr. Matthew Smith](#) and [Prof. Martin Kuball](#) (CDTR) submitted a paper to CS Mantech titled “GaN-on-Si Membranes for Power Device Applications: Stress Evolution Throughout Fabrication”, a link to the publication can be found [here](#).

Promotions

After the annual promotions round within the school, congratulations are in order for the following academics from our theme have received the following academic promotions:

[Annela Seddon](#) (below left) who has recently been promoted to Professor.

[Dong Liu](#) (below right) (EMAM) who has been recently promoted to Associate Professor.



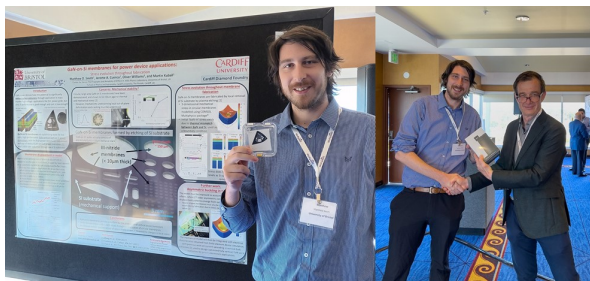
Conferences

[Prof. Martin Kuball](#), [Dr. Zeina Abdallah](#), [Dr. Daniel E. Field](#), [Dr. Matthew D. Smith](#), [Dr. Hyun-seop Kim](#) (pictured right), and [Yuke Cao](#) (CDTR) attended the CS Mantech '22 conference in Monterey, USA on 9th—12th May.

[Prof. Martin Kuball](#) is the technical programme chair of the above international conference, and will be the president of this conference next year.



[Dr. Matthew Smith](#) (CDTR) won the best poster at the CS Mantech '22 conference that was held on 9th-12th May in Monterey, USA (far right) and [Prof. Martin Kuball](#) presenting the award (near right).



[Alice Sheppard](#) (Prof Fox) attended a couple of conferences presenting their work on the PEEM analysis of a thin film solar absorber $\text{Cu}_2\text{ZnSn}(\text{S},\text{Se})_4$. [Alice](#) gave a talk at the virtual Spring Meeting of the European Materials Research Society (E-RMS) Conference, that was held from 30th May—3rd June. [Alice](#) also presented a poster at the emerging inorganic materials in thin-film photovoltaics Faraday discussion in Bath, UK on 4th—6th July.

Congratulations to [Sabrina Waters](#) (Surf Phys, CDT-CMP), pictured left, won a prize for her talk 'Electrodeposition of Pt onto lipid-templated Au via Surface Limited Redox Replacement' at the postgraduate 'Great Western Electrochemistry Meeting' held at the University of Bath on June 13th, 2022. At this one-day meeting, the postgraduate students from Bristol, Oxford, Bath, Reading, Exeter, Swansea, and Cardiff presented their PhD work. Industry exhibitors (Alvatek, Integrated Graphene, and Metrohm) contributed with prizes.



Group Photos

These summer months are often the perfect time for groups to host visiting work experience students or spend time together in the sun and enjoy teambuilding days out, over the last couple of months;



The CDTR group organized an away day at the University of Bristol Botanical Gardens.

The IAC (and a very happy puppy) had a successful away day at Mojo Active!



The EMAM group hosted a work experience student for a week, working on silver diamond composites (packaging material for electronic devices).

Members from Prof Fox's group met over the summer and took a group photo.



Research Shout outs

Dr. Zeina Abdallah (CDTR) won a prize for best photography (right) at the CS Mantech '22 conference, USA, for 'Ocean and Wildlife theme Picture Contest'. The picture was taken at Lover's Point Park, Monterey.



Hyun-Seop Kim (left) and **Indraneel Sanyal** (right) (both CDTR), participated in the workshop, "Pathways to Professorship – Inclusive Strategies for Building a Career in STEM" organized by **Jennifer McManus**, with numerous speakers from Bristol including **Michele Barbour**, the wider UK, Europe and the US.

Dr. Paul Forna Kreutzer (EMAM) visited the ALS facilities in Berkley, USA to complete high-temperature three-point bend tests with in situ synchrotron X-Ray tomography on notched oxide-oxide ceramic matrix composites, as well as some C-ring compression tests on Cr-Zr cladding. Right is a picture he took of San Francisco and the Golden Gate Bridge.



Sophie Osbourne (IAC) has paused her studies to take an internship at the International Atomic Agency Energy Agency in Austria, where she will be working at their Incident and Emergency Centre for Nuclear Safety and Security. You can follow her experiences (and sightings of small Austrian dogs) on Instagram (@365ish.days.in.vienna)

The IAC thin Films group had a successful inaugural writing retreat; back row: **Beckie Nicholls**, **Dr Lottie Harding**, **Jarrold Lewis**; front row: **Florence Legg**, **Syed Akbar Hussain**, **Phil Smith**.



Rewards & Recognitions Scheme—Winner’s Announcement Update

Thank you to everyone who submitted a recommendation for the award. After reviewing the recommendations received, the winners of the first [Materials and Devices Extra-Curricular Recognition Award](#) will be announced in our [October issue](#) of the newsletter.

Nominations for the next round of the scheme will also be opening in the new academic year, so please send your nominations via email to [Ellie White \(zl21970@bristol.ac.uk\)](mailto:Ellie.White@bristol.ac.uk).

PhD Opportunity: Role Opening for Seminar Organiser(s)

The theme is looking for the next seminar organiser, as Jarrod is nearing the end of his studies.

Preferably his replacement would be a student nearing the end of their 1st year, or in their 2nd year currently.

The role primarily involves emailing potential speakers, advertising the seminar to the theme, and arranging suitable rooms or Zoom/MS Teams meetings.

Organising the theme seminar is a great way to network with academics both within the department and beyond, and allows you to influence the topics discussed.

In total this amounts to no more than 2 hours of admin work per month.

If you are interested, please email Lilly Liu (dong.liu@bristol.ac.uk), and for informal questions about the role feel free to contact Jarrod (jarrod.lewis@bristol.ac.uk).

Job Adverts

The University of Wisconsin Ion Beam Laboratory have the following positions open for applications:

Research Scientist, more information on the role can be found [here](#).

Instrumentation Tech, more information on the role can be found [here](#).

Pets of M&D!

This issue, introducing one of the cats from Prof Fox’s group, [Tyoma](#).

He enjoys destroying plant, tulips are his favorite, and while he isn’t necessarily a lap cat, he still enjoys his daily moments of attention seeking.

If you would like any of your furry friends to be featured in future issues, please don’t hesitate to send your pictures into [Ellie](#).

