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16.05.2025

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Newsletter 7 (PCIG N7)

Welcome to the seventh edition of our newsletter!

Join Us in Advancing Scientific Research

RSC INTEREST GROUP
PARTICLE
CHARACTERISATION

Newsletter 7 (PCIG N7) - 16.05.2025

PREFACE

This newsletter aims to serve as a means of internal communication of useful information and strengthen the engagement among the group members. This quarter's newsletter with the first edition (February 2025 – May 2025), consists of three main sections:

A. Research highlights, which represent the emerging technologies in particle characterisation.

B. People focus, which reveals the motivation and sharing from different researcher members.

C. Update corner, which summarises new events, collaboration, and other opportunities.

Editorial team: **Anna Anandita, Mel Disher, Merel Bout, Phil Jackson, Stefanos Mourdikoudis, Sayantan Das** and **Tien Quach.**

Graphics team: **Leon Pantelis Xydias** and **Viktoriya Ivasiv**

We would like to express great appreciation to the PCIG Committee for encouraging and advising us to issue the first edition of PCIG Newsletter. Many thanks for the contribution from the people who are willing to co-operate with us. We look forward to your collaboration in the next editions!

Welcome to the PCIG Newsletter,
where we network and work together for better particle technologies.

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A. RESEARCH HIGHLIGHTS

A1. OF2i – An Introduction to New Particle Characterisation Technology

Written by Mel Disher

The field of particle characterisation is an ever-evolving area, with researchers continually looking for new techniques to reveal more pieces of their particle puzzles. At the PCIG we are always looking to advance our knowledge of the newest techniques on the market. This article will look into OptoFluidic Force Induction (OF2i®). OF2i® is a patented technology incorporated into particle characterisation instruments designed by BRAVE Analytics for both laboratory and process analytical technology (PAT) applications.

In the rapidly evolving fields of pharmaceuticals, biotechnology, and environmental analysis, precise and continuous particle monitoring is crucial. OF2i® can be used as a standalone technique for the measurement of size and concentration of particles or coupled with Raman and ICP-MS (inductively coupled plasma–mass spectrometry) [1] to provide real-time, continuous monitoring and analysis of particles.

OF2i® takes the principles of Authur Ashkin's Nobel Prize winning optical tweezers[2] on an evolutionary journey. When using optical tweezers, particles are trapped in a tightly focused laser beam which allows users to control and manipulate individual particles on the nanoscale for example microscopic biological specimens can be held in the beam and probed and stretched to determine properties like elasticity or stiffness which is useful in the study of diseases such as cancer or sickle cell aneamia [3]. Of2i enhances the idea of optical tweezers using a doughnut-shaped Laguerre-Gaussian laser beam to create an optical vortex within the fluidic channel in the instrument, and particles are introduced to the system under a known flow rate [4]. Particles introduced to the system become trapped in the doughnut-shaped beam as they move in the same direction as the optical vortex. Once trapped in the beam, the particles experience velocity changes that are directly proportional to the particle size; for example in a heterogeneous mixture larger particles will be trapped in the laser beam more easily and experience higher changes in velocity as they move through the fluidic channel. The velocity changes are caused by the optical forces acting upon the individual particles. The optical forces applied to these particles are a result of the incoming magnetic and electric fields and scattered magnetic and electric fields. Despite the light from the laser beam not having mass in the traditional sense of the word, Newton's third law of motion still applies to the interaction of the light with the trapped particles.

The data obtained from an OF2i measurement consist of size and concentration of particles. Brave Analytics have developed a suite of instruments allowing for OF2i analysis of particles over an impressive size range from 5 nm to 80 µm. By providing real-time, continuous data, OF2i enables companies to maintain high standards of quality, improve efficiency, and reduce waste. The ability to monitor and adjust processes in real-time is a significant advantage, particularly in industries where precision is paramount.

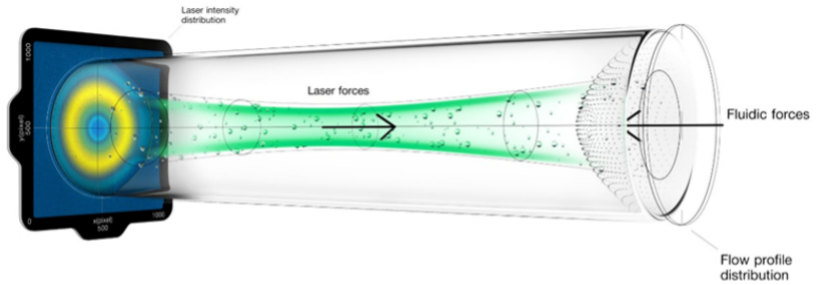

Figure 1: Schematics of the optofluidic force induction (OF2i) scheme. Particles are immersed in a fluid and are pumped through a microfluidic channel. A weakly focused Laguerre-Gaussian laser beam with an orbital angular momentum propagates in the same direction as the particle flow, and exerts optical forces on the nanoparticles.[4]

Combining with Raman Spectroscopy: OF2i®-Raman: This combination allows for the identification of particles based on their Raman spectra while they are in flow. In the study Optofluidic Force Induction Meets Raman Spectroscopy and Inductively Coupled Plasma-Mass Spectrometry: A New Hyphenated Technique for Comprehensive and Complementary Characterizations of Single Particles, researchers demonstrated how this integration enables real-time molecular characterisation alongside precise particle sizing [1]. The OF2i® technology precisely traps and sizes particles, while Raman spectroscopy enhances this analysis by providing molecular composition and phase differentiation, allowing for non-destructive identification of organic and inorganic materials [1]. The study successfully applied this technique to polystyrene-based microplastics and TiO_2 nanoparticles, with Raman confirming the polymeric structure of microplastics, distinguishing them from environmental contaminants, and identifying distinct crystalline forms of TiO_2 nanoparticles, which are essential for assessing their reactivity, stability, and industrial applications. The ability to analyze up to 60 particles per minute in flow makes this method highly efficient for complex polydisperse systems, microplastic detection, and non-targeted screenings, demonstrating its value in nanomaterial research, environmental studies, and pharmaceutical development [1]. Applications: This method is particularly useful for analysing complex polydisperse systems, detecting microplastics, and conducting non-targeted screenings.

OF2i has been implemented in several academic and industrial applications, from the detection of nanopollutants at low concentrations in surface water as in assistant professor Gregor Marolt's report from the University of Ljubljana[5], to the identification of protein aggregates in biopharmaceuticals. Several interesting application notes on this new technology can be found at https://braveanalytics.eu/en/homepage-2/applications/.

If you have new technology that might benefit the members of the Particle Characterisation Interest Group and would like to feature this in our newsletter, please get in touch with the team!

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A. RESEARCH HIGHLIGHTS

A2. Artificial Intelligence (AI): a powerful tool for particle design and process optimisation

Written by Okba Al Rahal and Anna Anandita

What is a Particle?

A particle can be defined as an object with defined properties such as mass, volume and density. In pharmaceutical and physical sciences, particles are usually defined in terms of their shape and size, with sizes typically ranging from a few nanometres to several millimetres. Particles can exist in different states: solids, fluids and gases, and are crucial for a wide range of applications from everyday life to complex discoveries such as construction, manufacturing, pharmaceuticals, food and beverages, and cooling and refrigeration. Hence, there have been considerable studies to advance our understanding of particle properties which can lead to optimised particles. An optimal process design is crucial for delivering efficient and effective systems. For example, in the construction industry, optimal process design provides control over solid particle handling to develop durable and stronger materials. Optimising particle processes is essential for improving shelf life, enhancing the tastes and safety of products in the food and beverage industries. Optimised process design is cost-effective, and ensures efficient use of resources, all while enhancing the quality. This article discusses the components of particle design and the application of artificial intelligence to enhance the processes.

AI in Particle Design and Synthesis

Artificial Intelligence (AI) has recently evolved as a powerful tool that can be used to advance our understanding in many scientific fields, particularly in the field of pharmaceutical science. In the pharmaceutical industry, the common procedure of particle design with optimised properties for downstream processes includes designing experiments that require key considerations for the choice of solvents, such as availability, cost, diversity of properties and sustainability [1]. This adds up to a significant amount of raw materials, energy and time, making process optimisation expensive and challenging. With the inclusion of AI, researchers can use machine learning for not only the effective design and synthesis of particles with optimal properties but also for risk mitigation, as it can be used to predict the relationship between structure, performance, manufacturing processes and properties. AI in particle technology includes predictive modelling, fault recognition and process control [2]. Generative models are employed to identify the optimum conditions for the synthesis of the particles with specific attributes such as morphological or surface characteristics as well as particle size and particle size distribution; all these features have a significant impact on the performance of the final product [3]. The potential enhancement in process design and optimisation also enables researchers to consider numerous possibilities before confirming one that would be experimentally validated. AI assists the synthesis process by identifying patterns and correlations from historical data and experimental results that the human mind might neglect [4,5].

This would also enable the development of efficient methodologies for specific applications. AI also facilitates structure-function relationship analysis, synthetic route planning, automation of synthesis, and proposal of new experiments with the development of self-driving laboratories [6-9]. One noteworthy instance is optimising the conditions for particle formation, such as temperature, pressure and concentration, along with diverse parameters. AI would also assist researchers in tuning these parameters to synthesise particles with superior performance and characteristics [10-12]. Another such example is in the field of metal-organic frameworks (MOFs), in which AI facilitates the analysis of datasets to identify trends, predict properties and optimise the synthesis conditions [3]. Machine learning algorithms, along with mathematical models and simulations, improve the accuracy and efficiency of materials discovery and development with increased training datasets for numerous applications, including gas storage, catalysis and drug delivery.

AI in Particle Characterisation and Optimisation

In order to understand particle behaviour in different environmental conditions, error-free particle characterisation is crucial. Conventional characterisation methods such as dynamic light scattering (DLS), laser diffraction (LD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), and nanoparticle tracking analysis (NTA), are labour-intensive and require sophisticated equipment and skilled operators to reduce handling errors [13-16]. However, AI is transforming particle characterisation by streamlining and automating these processes [18]. Machine learning is used for particle characterisation, data analysis and extraction of meaningful insights for these characterisation techniques, such as microscopy and spectroscopy, across various fields [3]. Techniques such as machine learning can automate data analysis and interpretation in surface analysis, thus improving efficiency and accuracy. AI-based programs can be employed for fast image processing for electron microscopy to establish particle size distribution, shapes and elemental composition analysis. These programs can be trained to recognise and analyse particles using these techniques with high precision. Studies have demonstrated the potential of artificial neural networks (ANNs) and image processing in the classification of shapes and sizes of solid particles in water bodies, with utilisation in the monitoring of fluvial materials and microorganisms. This provides rapid feedback on the designed particles with improved accuracy and reproducibility fields [18].

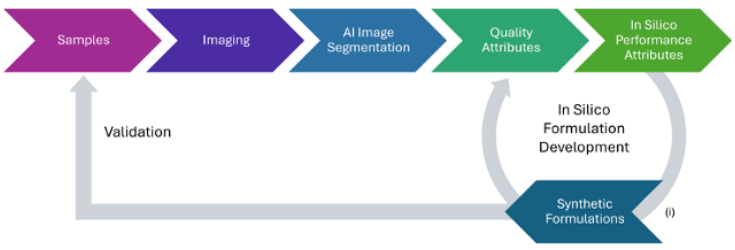

Figure 1: Digital transformation workflow. (i) Synthetic formulations created by the generative AI method. [3]

AI can be employed to identify and address potential issues with particle properties, such as compatibility and stability for certain applications. This would ensure efficient outcomes in the required applications. AI techniques have demonstrated higher capabilities in the prediction of properties of crystalline materials with increased accuracy and efficiency compared to traditional techniques. Generative AI can be integrated into pharmaceutical development to develop digital versions of drugs to aid in silico optimisation of the formulations and particle engineering [19]. The numerous applications of AI in particle technology include various unit operations such as grinding, extrusion and characterisation with potential adoption and productivity gains. AI-driven approaches, including machine learning and Bayesian neural networks, are employed in additive manufacturing for improved prediction of mechanical properties for particle-reinforced resin composites and complement conventional analytical models like the Halpin-Tsai model [19,20]. These findings indicated that the generative AI was able to precisely forecast a percolation threshold of 4.2% weight of microcrystalline cellulose to generate implantation formulations with regulated drug loading and particle size distributions. These developments successfully demonstrate the potential to revolutionise the optimisation of particle properties using AI across industries.

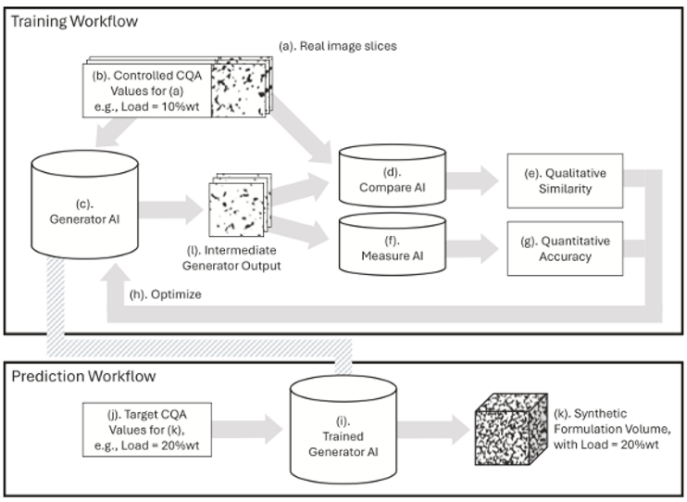

Figure 2: Schematic workflow diagram of the generative AI method for structure synthesis, which is trained from exemplar images and the Critical Quality Attributes (CQAs) extracted in the training workflow, then applied to generate synthetic formulations in the prediction workflow. [3]

With the inclusion of AI, various limitations also arise, which interestingly can also be addressed with AI. Major challenges in effective AI use would include data quality, model interpretability and the need for diverse datasets. The employment of robust data management and improved, transparent algorithms can address these challenges and ensure efficient models by training with high-quality, unbiased datasets. For example, AI and machine learning tools demonstrate possibilities to reduce computational costs of lattice quantum chromodynamics (QCD) calculations and analysis of large datasets from particle accelerators in theoretical particle physics [18,20]. AI algorithms are being developed for enhanced treatment planning, adaptive therapy and dose verification in particle radiotherapy by leveraging the physical properties of particle therapy [21,22,23]. With these advancements, the potential of AI as a tool to mitigate challenges is apparent.

Integrating AI has transformed the field of particle design and characterisation and extends opportunities for optimisation and innovation. AI can enable researchers to streamline methodologies, improve accuracy and optimise the particle performance for a wide range of applications. The impact of AI in particle science will be phenomenal for discoveries and advances.

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B. PEOPLE FOCUS

WHY JOIN US?

- We love to understand your technical and social experiences, especially your untold stories throughout the learning and working journey.
- We would like to motivate more students - researchers to follow their passion and careers in particle science.
- We believe a single effort and contribution to help make our world better should be recognised and spread out.

HOW?

If you are interested in participating, please contact us for more details!

B.1 Get to know

Collected by Tien Thuy Quach

We can learn from the research interest and career pathways from our PCIG members. We will start with an overview of two of the Committee members, but please contact us to share your background and experience in future newsletters.

Merel Bout, MSc, AMRSC

I am an enthusiastic pharmacist who graduated in 2017. Since then I have started working in my first real job at a pharmaceutical company (CDMO) named Tiofarma in the Netherlands. The company needed analysts at that time so I started as a development analyst in the lab. This was a great way for me to get to know the company and a good learning experience in the field of analysis. After eight months, I moved into the R&D department and in 2019 I was given the opportunity to start my PhD. In my research, I focus on the physical and chemical changes that can occur in active ingredients in the presence of excipients.
The goal of this research is to improve the stability of dosage forms by gaining more insight into the instability issues that emerge. I think I ended up in a great situation where I can focus on the best parts of a perfect combination between the pharmaceutical and chemistry side of things. So far, I am hoping to finish my PhD in 2025.

My first contact with the PCIG was in 2020, in the Covid times, where I joined the Forge digitally. The members saw some potential in me for some reason and asked me if I wanted to join the PCIG. In 2021/22 I helped with organising the Forge. To me, the PCIG is a great group of people with different backgrounds but so willing to teach/learn from each other. I am a strong believer that knowledge should be shared and the PCIG-group feels like a good opportunity to achieve that goal.

Linkedin profile: https://www.linkedin.com/in/merel-bout-942a1887/

Researchgate: https://www.researchgate.net/profile/Merel-Bout-2?ev=hdr_xprf

Google Scholar: https://scholar.google.com/citations?user=NGELsjYAAAAJ&hl=nl&oi=ao

Stefanos Mourdikoudis, PhD

Dr Stefanos Mourdikoudis is a chemical engineer who obtained his PhD degree in the Department of Physics, Aristotle University of Thessaloniki in Greece in 2009. Apart from his native country, he also worked in post-doctoral projects in France, Spain, the UK, the Czech Republic and Belgium.

Currently he is working at the University of Vigo, Spain. His research interests include the colloidal synthesis and characterization of nanoscale particles of diverse compositions. Depending on their type, these particles are employed in a range of applications such as catalysis, electrocatalysis, environment and 'bio'-fields.

Linkedin profile: https://www.linkedin.com/in/stefanos-mourdikoudis-88615810/

Researchgate: https://www.researchgate.net/profile/Stefanos-Mourdikoudis?ev=hdr_xprf

Google Scholar: https://scholar.google.es/citations?user=0IylipcAAAAJ&hl=es

B.2 Our inspirer: Ethan Ellis

FORGE 2024: A perspective from a young researcher attending their first conference

PCIG committee member Phil Jackson caught up with Ethan Ellis, an apprentice from the Applied Materials Research Innovation & Commercialisation Centre (AMRICC), to ask how he found Forge 2024.

LinkedIn: https://www.linkedin.com/in/ethan-ellis42/

This was the first conference you had attended. What were your initial impressions?

It was an enjoyable experience and the exposure to new ideas has completely broadened my view on how chemistry can be applied in industry.

Apart from delivering a talk, did you go to the conference with any specific goals?

I wanted to make new connections with people and gather inspiration for what areas of work my apprenticeship can take me to.

Did the conference highlight any new analytical techniques for you? (techniques that you might consider using in your future research)

For me, the presentations on SEM inspired me to investigate and use microscopic techniques in general to support my research into novel battery systems.

Can you think of any initiatives that PCIG could employ in the future to help first time attendees get more out of their conferences?

Perhaps making networking easier by including specific sessions where less experienced people get the opportunity to speak to more experienced chemists. This could be an open Q&A forum or maybe the ability to pre-book 1:1 sessions with experts where I could discuss R&D challenges I am facing or perhaps how a given analytical technique could support my R&D .

What were the take-home messages for you:

(i) In general?

That the wealth of science and chemistry can take your research work in so many directions.

(ii) Important industrial needs to be addressed?

Although far removed from the battery / energy sector I am working in, agriculture stood out to me as being important in terms of supporting sustainable energy and ensuring the world population has good access to food.

Did you make any useful contacts at the conference?

I made a few contacts with people and, encouragingly, they were strongly related to my area of research.

Can you give us your thoughts on the amount of time young speakers were given for their presentations?

I thought 10-12 minutes plus 3-5 minutes for questions worked well as people who have just started their work may not have many results to share. Also, I found that a 10 minute slot forced me to work with my supervisors to condense the work I have done down into a few key findings / messages. I also think that having a poster session would allow very new students (who perhaps lack the confidence of giving an oral presentation at that stage of their career) to have some visibility. The 3 minute flash presentations were good although better use of microphones would have helped me to hear the content.

Can you name up to three things that you thought were great about the conference? ……..

I found the presentations where people presented how their career had progressed very inspiring.

The student presentations highlighted to me just how broad the range of industrial challenges being addressed is.

The awards were a good way of encouraging people to fully commit to give high quality presentations.

…….. **and then up to three things that could have been done better**

I think more could be done to make the environment more “cozy”, to make it easier to approach people. I think it’s easy to forget how intimidating a conference can be for young researchers.

Linked to the point above, could it be possible to increase the amount of fun social sessions to encourage people to approach other delegates that they would not normally talk to?

As stated earlier, I would have liked to have seen a poster session with an allotted time to view posters and engage with the author.

Inspiring stories

Do not hesitate to share your stories to motivate other researchers and students. You can write about the people, the events that motivated you throughout your learning, working and research (either the good or the bad things happened). We look forward to hearing from you.

B.3 RSC Cambridge Site Visit (May 2025)

Written by Dr. Tien Thuy Quach

I have had a meaningful reunion with my buddies from RSC Broadening Horizon in Chemistry Sciences, especially since it has been so long to meet with the first cohort of colleagues again. It is also my pleasure to meet the second and third cohort, as well as catch up with the other lovely colleagues in RSC Cambridge.

One of the take-away quotes is "If they are not ready for you, it does not mean you are not ready" from my inspirer Dr Rehana Sidat.

Many thanks to @Royal Society of Chemistry for organising this event. I look forward to more opportunities and news from RSC BHiCS. Stay safe and keep in touch!!!

More details: https://www.rsc.org/policy-evidence-campaigns/inclusion-diversity/activities/horizons-programme/

Photo: Group photo taken by RSC Staff

#ProfessionalDevelopment
#MeaningfulReunion

B.4 A special trip to Vietnam (April 2025)

Written by Dr. Tien Thuy Quach

I am happy to lead and progress the discussion and work with several strategic representatives and partners to build and enhance the connection between Vietnam and the UK. Stay tuned for new opportunities for collaboration and development of advanced technologies, particularly in pharmacy - pharmaceutical sciences!

Photo: Dr. Tien organised the seminar to promote postgraduate courses for Vietnamese students in HUTECH

I want to express my great appreciation to all managers, lecturers/researchers and other colleagues who have facilitated and helped make it happen, so my projects for enabling more young students and early-career staff would become feasible and affordable. Especially, great appreciation to Ms. Bhavisha Koner from Aston University that kindly sponsored my trip, Dr. Daniel Kirby from Aston Pharmacy School that kindly supported my proposal as well as other Senior Staff from different Vietnamese universities and pharmaceutical factories that gently welcomed me and facilitated my short visit.

Besides, I could celebrate HUTECH's 30th birthday on April 26 and respond to the atmosphere of the 50th Anniversary of the Liberation of the South and National Reunification of Vietnam on April 30. Many thanks to Assoc. Prof. Dr. Nguyen Vo - HUTECH University who kindly introduced me to other seniors and staff colleagues there. I forgot to mention that I had a lovely reunion with some of my first undergraduate students at the HUTECH Alumni Celebration. To everyone (and especially for those I haven't met), good luck with your current jobs and future plans!

Photo: Fruitful discussion with Senior Staff from UMP about new programmes for pharmacy-pharmaceutical students across UK and Vietnam.

Photo: New workshop to enhance the partnership between Aston, HUTECH, and CTUMP to facilitate new educational and research projects for Vietnamese students

I wish everyone a memorable holiday, and I pray for our family and friends to have good health and prosperity to stay with us for a very long time. I hope in the future I will be able to continue to come to Vietnam for education-research work and be able to meet more relatives and friends...

This month, I also took the opportunity to prepare and support some online events of several organisations/associations such as IYCN and VIS. I will continue to advise-guide and invigilate-assess the students in the coming time. I look forward to more news from everyone, so feel free to share them. See you soon!

C. UPDATE CORNER

C.1 Our two PCIG websites

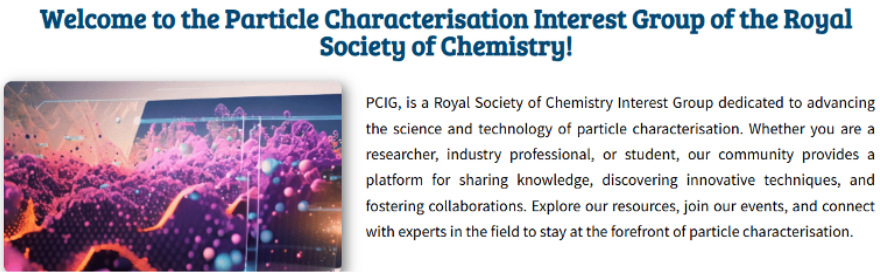
Written by Merel Bout

Our Particle Characterisation Interest Group (PCIG) is a part of the Royal Society of Chemistry (RSC). Within the RSC, we are a focused group looking for ways to advance the fields of science and technology around particle characterisation. As we are a part of the RSC, we have an official webpage hosted by the RSC platform itself, which provides key information about our group and activities. Available here:

https://www.rsc.org/membership-and-community/connect-with-others/through-interests/interest-groups/particle-characterisation/

However, in addition, as of last year we also have a separate website managed by our committee! It holds mostly the same core information, but here we offer greater flexibility in sharing updates, resources, and event details. Available here:

https://pcig.co.uk/



What type of information can you find on the website?

Our websites serve as a central hub for anyone interested in particle characterisation, whether you are a researcher, industry professional, or student. You can find:

Information about PCIG – Our mission, committee members, and how to get involved.
Upcoming Events & Conferences – Stay informed about workshops, webinars, and networking opportunities. Connect through our events such as The Forge and explore potential partnerships.
Latest News & Updates – Insights into advancements in the field and group activities including our newsletters under News.
World map – Explore where all members are from.

We encourage you to explore both sites to stay up to date with the latest developments within our community of particle characterisation.

C.2 Other upcoming events of interest

UK-based events

UK and Ireland based events starting in May 2025 the earliest that may interest our readers include:

1) Chemical Biology Symposium, May 12, 2025, London
https://www.rsc.org/events/detail/80402/chemical-biology-symposium-2025

2) Advanced imaging techniques in biomineralisation research, May 14-16 2025, Edinburgh
https://www.rsc.org/events/detail/77784/advanced-imaging-techniques-in-biomineralisation-research-faraday-discussion

3) Global Congress on Nanotechnology and Materials Science (GCNMS2025): May 19-21, 2025, London
https://optimumresearchmeetings.com/nanoconf2025/

CHEMUK2025, May 21-22 2025, Birmingham
https://www.chemicalukexpo.com/

4) 8th Annual UK Porous Materials Conference (UKPorMat), June 3-4, 2025, University of Birmingham
https://www.ukpormat.com/

5) Drugs Research Network Scotland Annual Conference, June 5 2025, University of Dundee, Scotland,
https://drns.ac.uk/event-calendar/

6) Analytical Research Forum 2025 (ARF25), 17 June 2025, London
https://www.rsc.org/events/detail/80490/analytical-research-forum-2025-arf25

7) London Biotechnology Show June 18-19 2025, London
https://www.eventbrite.co.uk/e/london-biotechnology-show-tickets-959283933067?aff=ebdssbcategorybrowse&keep_tld=1

8) International Symposium on Nanoparticles and Nanomaterials (ISNN 2025): June 24-26, 2025, Edinburgh

9) UCL Technical Staff Showcase 2025, June 25-26, 2025
https://www.ucl.ac.uk/events/

10) 17th International Conference on Materials Chemistry (MC17): July 7-10, 2025, Edinburgh
https://www.rsc.org/events/detail/77989/17th-international-conference-on-materials-chemistry-mc17

11) International Conference on Industrial Chemistry and Engineering (ICICE-2025), July 17 2025, London
https://allconferencealert.net/eventdetails.php?id=2997217

C.2 Other upcoming events of interest

UK-based events

12) International Conference on Nanoscience, Nanotechnology and Advanced Materials, July 18, 2025, Manchester, https://www.allconferencealert.com/event/1293252

13) PASCOS 2025, the 30th International Symposium on Particles, Strings and Cosmology: July 21-25, 2025, Durham https://conference.ippp.dur.ac.uk/event/1371/

14) Precision Global Forum on Nanotechnology and Nanomaterials (PGNANO2025): August 11-13, 2025, London https://www.reoozveltforum.org/pnano-2025

15) International Conference on Particle Science and Technology (ICPST 2025): August 12-14, 2025, London

16) 5th International solar fuels conference, 1-5 September, 2025, Newcastle https://www.rsc.org/events/detail/78693/5th-international-solar-fuels-conference?utm_campaign=unknown&utm_source=shortlink_various&utm_medium=mixed&utm_content=tgroup_all

17) 39th ECIS UK Colloids 2025 Conference, September 7-12, 2025, Bristol https://www.soci.org/events/colloid-and-surface-chemistry-group/2025/39th-ecis-uk-colloids-2025-conference#:~:text=Its%2039th%20edition%20will%20beon%207th%2D12th%20September%202025

18) Frontiers in physical chemistry for lignin valorisation Faraday Discussion, September 10-12, 2025, London https://www.rsc.org/events/detail/78245/frontiers-in-physical-chemistry-for-lignin-valorisation-faraday-discussion

19) International Conference on Nanomedicine and Nanobiotechnology (ICNB 2025): September 23-25, 2025, Cambridge

20) Particle Science and Technology Symposium 2025: October 5-7, 2025, Edinburgh

21) 42nd Global Summit on Nanoscience and Technology, October 21-22, 2025 London. https://nanosummit.conferenceseries.com/

22) Global Nanotechnology Summit 2025: October 20-22, 2025, Manchester

C.2 Other upcoming events of interest

UK-based events

23) Chemical Science symposium 2025: Chemistry of imaging, biosensing and diagnostics. November 18-19, 2025, London.
https://www.rsc.org/events/detail/81053/chemical-science-symposium-2025

24) International Conference on Environmental Biotechnology and Sustainability: December 30, 2025, Edinburgh

Non – UK and Ireland events our readers may be interested in include:

1) EMRS (European Materials Research Society) - 2025 Spring Meeting, 26 - 30 May 2025, Strasbourg, France
https://www.european-mrs.com/meetings/2025-spring-meeting

2) The World Conference on Carbon June 29 - July 4, 2025, Saint-Malo, France
https://premc.org/carbon2025/

3) XL Biennial Meeting of the Royal Spanish Society of Chemistry, June 30 - July 3, 2025, Bilbao, Spain
https://brseq2025.com/en/

4) 7th International Conference on Nanomaterials Science and Mechanical Engineering, July 8-11 2025 Aveiro, Portugal.
https://www.rsc.org/events/detail/80583/7th-international-conference-on-nanomaterials-science-and-mechanical-engineering

5) 22th International Conference on Nanosciences & Nanotechnologies (NN ‘25), 8-11 July, 2025, Thessaloniki, Greece
https://www.nanotexnology.com/index.php/nn

6) 8th Annual Meeting CINBIO (Center for research in Nanomaterials and Biomedicine), 10-11 July, 2025, Vigo, Spain
https://cinbio.es/8am

7) 11th International Conference on Bioengineering and Biosciences: August 21-23, 2025, Paris, France.

8) Joint European Magnetic Symposium (JEMS 2025), 24-29 August, 2025, Frankfurt am Main, Germany
https://magnetism.eu/264-jems2025.htm

9) The 38th European Conference on Surface Science (ECOSS38), 24-29 August, 2025, Braga, Portugal
https://ecoss38.pt/

C.2 Other upcoming events of interest

Non – UK and Ireland events our readers may be interested in include:

10) 12th International Workshop on Functional Nanocomposites (Nanoworkshop 2025), 7-10 September, 2025, La Rabida, Huelva, Spain
https://wp.icmm.csic.es/nanoworkshop2025/

11) 3rd International Conference on Nanotechnologies & Bionanoscience (Nano Bio 2025), 8-12 September, 2025, Heraklion, Crete, Greece
https://nanobioconf.com/

12) 14th International Conference on Instrumental Methods of Analysis: Modern Trends and Applications (IMA 2025), 14-17 September, 2025, Argostoli, Kefalonia island, Greece
https://ima2025.gr/

13) 39th Panhellenic Conference on Solid State Physics & Materials Science, 14-17 September, 2025, Paphos, Cyprus
https://fsk2025.cut.ac.cy

14) FEMS 2025 - EUROMAT, 18th European Congress and Exhibition on Advanced Materials and Processes, 14 - 18 September 2025, Granada, Spain
https://euromat2025.com

15) EMRS 2025 Fall Meeting, September 15-18, 2025, Warsaw, Poland
https://www.european-mrs.com/meetings/2025-fall-meeting

16) NANOCON (17th International Conference on Nanomaterials), 15-17 October 2025, Brno, Czech Republic
https://www.nanocon.eu/en/

17) International Conference on Particle-Based Methods (PARTICLES 2025) October 20-22 2025, Barcelona, Spain.
https://particles2025.cimne.com/objectives

18) International Conference on Environmental Biotechnology and Food Security: December 30, 2025, Geneva, Switzerland.

19) 7th International Caparica Symposium on Nanoparticles/Nanomaterials & Applications (7th ISN2A-2026), January 25-29, 2026, Caparica (Lisbon area), Portugal

https://isn2a2026.com/

C.2 Other upcoming events of interest

Some more events of interest are below and dates are to be confirmed.

UK Particle Technology Forum 2025: Dates to be confirmed, Manchester, UK. This forum will cover various aspects of particle technology and characterisation

PARTICLES 2025, International Conference on Particle-Based Methods: Dates to be confirmed, UK. This conference will address the fundamental basis and applicability of state-of-the-art particle-based computational methods

Crystallisation Science and Engineering: Dates to be confirmed, UK

And something more!! :

Although not directly related to powders, the fact that:

(i) powder processing is critical to advanced ceramic production and

(ii) the powder processes used in ceramics tend to be used by many other industries

..... means the offering is likely to be of interest to many industrial sectors

AMRICC (Applied Materials Research Innovation and Commercialisation Centre) is looking to offer training in ceramics.

AMRICC is perhaps better known as a facility in Stone, Staffordshire where clients can access state of the art processing and analytical equipment to assist their production or research projects.

However, it has become clear from conversations with ceramic companies that there is real concern over the lack of courses and hands-on training available to assist new starters to the industry, especially new graduates. The AMRICC academy therefore intends to build a portfolio of courses that meet the ceramic industry needs. This will be a long process, with courses added over time based on feedback. Since ceramics relies heavily on powder analysis and powder processing, there is likely to be a broader appeal to other industries.

The attachment gives you some initial information, but we'd love individuals from companies and universities to register their interest and flag up the kind of courses they'd like to see. You can register interest using the link below. If you or colleagues do complete the form, please could you add the code "PJ1" where it asks for a referral code? The code simply helps the AMRICC marketing department understand the extent to which interest is being generated from contacts who have technical, sales, marketing, management etc. job roles.

More info: https://www.amricc.com/education/training-expression-of-interest?source=email-footer

The PCIG is always happy to hear about up-and-coming events that our members are interested in. If you have any suggestions for events to be included in our newsletters, please contact us and we will include these in our next edition.

CONTACT US

Visit our own website for further information: https://pcig.co.uk/ or go to our official RSC-website:

https://www.rsc.org/membership-and-community/connect-with-others/through-interests/interest-groups/particle-characterisation/

Do you have any questions, feedback or are you willing to contribute as a collaborative writer? Please email the RSC-PCIG Particle Newsletter Team via: **Particlenewsletter@gmail.com** and we will get back to you.