Institute of Materials, Minerals & Mining

The global network for the materials cycle.

2022 END OF YEAR REVIEW

Dr Colin Church FIMMM CEnv CRWM MCIWM IOM3 Chief Executive

In 2022, IOM3 has continued its work to advance and develop all aspects of materials, minerals and mining, including by being the best professional membership body it can be. Supporting professionals in those fields to be champions of the transition to a low-carbon, resilient and resource-efficient society remained central to that work. In order to help showcase this role, we partnered with Content With Purpose to produce the multi-media campaign *Material Change: Resourcing Net Zero*. This uses videos, podcasts, interviews and articles to explain how crucial our sectors are for the future, and how exciting a career in them can be.

A real feature for IOM3 this year has been the continued growth in members, especially at the Member grade, with that passing 5,500 for the first time ever. All in all, over 2,000 new members joined IOM3 in 2022 – again, a record for organic recruitment. Again and again, we hear that members are joining because they see the importance and relevance of IOM3 for their lives, both in terms of the access to technical content and to professional recognition for themselves, and a desire for the voice of professionals in materials, minerals and mining to be heard in the public and policy debates. The extensive range of webinars, podcasts, conferences, training events, articles and policy papers that the IOM3 community has produced this year to support this is hugely impressive.

'As the cost of living crisis continues to bite, it will be more important than ever that IOM3 supports its members in their professional journeys and helps them overcome the barriers and stumbling blocks that may occur.'

Some of the highlights of this activity include:

- 38 IOM3-hosted events with almost 4,000 registrations from 44 countries.
- 16 IOM3 Investigates... podcast episodes, expanding a programme of episodes that has been listened to over 2,100 times.
- 6,946 IOM3 Investigates... podcast plays since launch in 2020.

 Launch of the Materials World facelift, providing a cleaner look that allows clear representation of all our activities and showcases the diversity of multidisciplinary content.

 Materials World and its editorial team being shortlisted for several publishing awards over the year, receiving a highly commended as Best In-house Magazine by Memcom.

• Continued improvement in impact factors for many of our scholarly journals.

 Unveiling of a new platform for online teaching and learning, including updated qualifications in packaging technology.

 Restarting face to face outreach and teacher support activity to help share the importance of a career in materials, minerals, and mining.

 Seeing the UK Government finally produce a (pretty decent) strategy on critical minerals, as IOM3 had been calling for.

 Engagement with BEIS and Defra on a number of other developing policy issues, such as the former's call for evidence on the challenges and opportunities for UK advanced materials and the latter's consultation on legally binding environmental targets.

 In 2022, we also implemented the final phases of the governance modernisation programme.
 This involved the launch of the new structure for our Technical
 Communities in April and revisions to our Bye-laws in September. We now have 22 groups covering the technical interests of IOM3 members, each with its own leadership team of active supporters and volunteers, aided by the IOM3 team. The Technical Communities form one of the four pillars of IOM3 and play an important role in generating and sharing technical content, supporting our influencing work and creating professional networks.

Our Bye-laws, which are approved by the Privy Council Office and form a major part of our constitution, have been updated to reflect things like being able to hold General Meetings online and using gender-neutral language throughout. The main change though was to update the membership grade structure, removing some confusion and unnecessary complexity. We now have five voting grades – Technician, Associate, Member, Fellow and Honorary Fellow – plus Affiliate and Student. This makes the grades easier for everyone to understand and for actual and potential members to see where their career might take them.

As the President says, 2022 also saw the end of an era for both IOM3 and the wider nation with the passing of Her Majesty Queen Elizabeth, our Patron since 1952, and her husband Prince Philip. Both Her Majesty and Prince Philip were great supporters of IOM3 and of the wider engineering and scientific community. I'd like to express the heartfelt appreciation of IOM3 for all their encouragement and assistance over the past 70 years.

More parochially, our thoughts are also with the families and friends of those members of IOM3 who passed away during the year. I would particularly like to mention our former Honorary Treasurer, Dr 'Mick' May, whose long and distinguished service to the Institute was so valuable.

In what has been a pretty consistent theme for the past few years, 2023 looks fit to offer its own challenges and problems for IOM3 and its members. As the cost of living crisis continues to bite, it will be more important than ever that IOM3 supports its members in their professional journeys and helps them overcome the barriers and stumbling blocks that may occur. We've started that by keeping our membership fee increase well below inflation, and will continue it through ongoing provision of the best membership services, technical content, professional development, and networking opportunities we can. We also hope to be able to extend our influencing activity still further and to work with more partners to spread the word about the value of a career in materials, minerals, and mining.

Last but by no means least, my huge thanks to the hundreds of active supporters and volunteers in different roles such as assessors, Technical Community Leadership Group members and Trustees, who enable IOM3 to carry out its work on behalf of its members. And thank you to the wonderful team here at IOM3 for another year of high quality delivery.

New appointments for 2022

Community Chairs (also get a place on Advisory Council)

- Colin Comberbach CEng CEnv MIMMM IOM3 Mining Technology Group
- Prof Bin Xu CEng FIMMM IOM3 Materials Characterisation & Properties Group
- Prof Judith Driscoll CEng FIMMM IOM3 Energy Materials Group
- Prof Mark Jolly CEng CEnv FIMMM IOM3 Materials Processing & Manufacturing Group
- Ajay Kapadia MIMMM Ethnic Minorities in Materials, Minerals & Mining (EMM3)

Advisory Council

- Dr Darron Dixon-Hardy CEng FIMMM North East Regional Representative
- Peter Saxby CEng MIMMM South West Regional Representative
- Sam Burdett AIMMM Student Grade
- Jason Webb CEng MIMMM Member Grade
- Dr Emily Radley AIMMM IOM3Pride
- Dr Margaret Wegrzyn MIMMM- Women in Materials, Minerals & Mining (WIM3)
- Dr Aimee Goodall MIMMM Student & Early Career (SEC)

Executive Board

- Dr Aimee Goodall CSci MIMMM Student & Early Career Committee (SECC)
- Martyn Jones CEng FIMMM Members' Board
- Martin Cox CEng FIMMM International Affairs Committee
- Dr Maurizio Carano REnvP MIMMM co-opted but full Trustee
- Judith Allan MIMMM Elected representative of Advisory Council
- Dr David Stewart CEng FIMMM Professional Standards & Development Board (PSDB)

Neil Glover FREng CEng FIMMM IOM3 President

'Thanks to the commitment of our staff, hard-working volunteers and members we have been able to continue to adapt to our changing world and deliver on many of our strategic priorities supporting professionals in materials, minerals and mining to play their part in the transition to a more sustainable, net-zero society.'

As I come to the end of my time as President of IOM3, I look back on another busy and productive year for the Institute with many successes to celebrate across the breadth of our activity and member interests.

In a turbulent world, the work of our members across all sectors is more important than ever. The interrelated issues of the cost-of-living crisis, energy security, geo-political instability and the urgent need for climate action continue to affect us all to a greater or lesser degree. But they also highlight the key relevance of materials, minerals and mining, in meeting these global challenges. Thanks to the commitment of our staff, hard-working volunteers and members we have been able to continue to adapt to our changing world and deliver on many of our strategic priorities supporting professionals in materials, minerals and mining to play their part in the transition to a more sustainable, net-zero society.

In that light it has been particularly pleasing to see the sustained growth in our membership and the increasing influence of IOM3 in representing our sectors in national and international policy. 2022 saw new members across all grades exceed 2,000 for the first time ever in one year, supported by a successful programme of membership and registration workshops and the simplified grade structure agreed in 2021.

We welcomed new members from across our communities to both Executive Board and Advisory Council, increasing our diversity, and saw student members exceed 3,000 for the first time - a great success, especially after two years of restricted engagement with universities through the pandemic. This was supported by the excellent work of our Student and Early Career Committee, culminating in the newly launched Student and Apprentice Awards, which it was my pleasure to present at the Education and new Fellows' dinner.

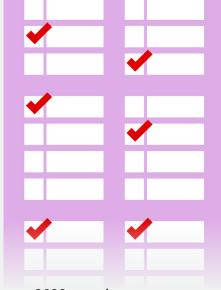
A further personal highlight was the final of the Young Persons' World Lecture Competition. This year saw competitors from six nations compete and was won by Rathosivan Gopal from Malaysia. Yet again the judges were dazzled by the quality of the presentations and left confident that the future of our profession is in good hands.

The growth in our external influence has seen us contribute to policy development in areas as diverse as UK advanced materials, green steel, and critical materials. Through this activity we are able to represent the strength, breadth and expertise of our membership and the key importance of the whole materials cycle.

2022 has also seen a continued strengthening of our digital content with an active programme of podcasts, webinars, virtual and hybrid events and the creation of our new digital training platform. In addition we launched our multimedia series *Materials Change: Resourcing Net Zero* in partnership with Content With Purpose, to spotlight the importance of materials, minerals and mining. All of this enabled by our enhanced digital capability established through 2019/20's Project Optimus.

This year has been the end of an era for our country and the Institute with the passing of Her Majesty Queen Elizabeth, our patron of many years. I would like to take this opportunity to express my appreciation for her long support, and that of her late husband Prince Philip to our Institute and the wider UK science and engineering community. It has been a real privilege to be President of our Institute for the last two years and, now I come to hand-over that honour, I would like to offer my successor Kate Thornton CEng CSci FIMMM all my best wishes for her time in office. I would also like to express my sincere thanks to my fellow Trustees and to all of the volunteers and IOM3 staff who make everything we do possible. I would also like to particularly mention my predecessor Prof Serena Best CBE FREng CEng FIMMM who is now stepping down as past President and Chair of Trustees after many years of dedicated service to the Institute; her advice and wisdom will be very much missed.

I-M3



- 2022 member survey launched
- Launched Materials World redesign

January

Policy & Influence IOM3 SUBMISSION

I-M3

- IOM3 submitted evidence as part of call on UK Advanced Materials
- IOM3 submitted evidence to the Environmental Audit Committee inquiry into green steel

March



YPLC UK final returned to The Armourers' Hall, London, UK

May



London building closed for repairs and refurbishment

July



- New IOM3 membership grade structure launched
- New Bye-laws came into effect
- 297 refurbishment completed
- IOM3 highly commended in Memcom Excellence Awards for Best In-House Magazine

September



ONLINE

- Rathosivan Gopal of Malaysia won online YPWLC 2022
- EFRA committee published plastic waste report as part of its inquiry, informed by oral evidence given by Chair of the IOM3 Packaging Group

November

February

 Member toolkit added to IOM3 website



April

- New IOM3 Technical Community structure launched
- IOM3 shortlisted for two Professional Publishers Association Awards



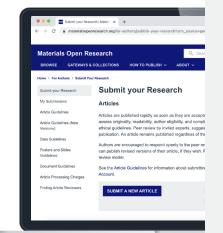
June

- Celebrated 20 years of IOM3
- IOM3 responded to the consultation on legally binding environmental targets and contributed to a joint Environmental Policy Forum submission



August

Materials Open Research published first articles and welcomes submissions



October

- Digital series champions materials, minerals, and mining in driving net-zero
- IOM3 submitted a response to the net-zero review call for evidence



December

- IOM3 launched new route for IEng to progress to CEng
- IOM3 celebrated 2022 Awards & Prizes winners



Membership in 2022

- 160 new Fellows (FIMMM)
- 820 new Members (MIMMM)
- 158 new Associates (AIMMM) and Technicians (TIMMM)
- 155 new Engineering Council registrants (CEng, IEng and EngTech)
- 26 new Science Council registrants (CSci, RSci and RSciTech)
- 12 new Society for the Environment registrants (CEnv and REnvP)
- 60 membership and registration workshops held virtually in 2022, attended by
 515 members
- Recruited more than 2,100 new members giving an increase of 33% on 2021
- Income derived from membership fees surpassed £1.5m for the first time due in the main to the increased number of new members
- Member (MIMMM) membership grade group surpassed 5,500 for the first time
- Student membership exceeded 3,000 for the first time
- Following the positive vote by members approving changes in the Bye-laws at the 2021 AGM, amendments to the IOM3 grade structure were agreed.

CEnv & REnvP

CSci, RSci & RSciTech

CEng, IEng & EngTech

AIMMM & TIMMM

MIMMM

'I'm immensely proud to be accepting this award for Outstanding Contribution to Equality, Diversity & Inclusion, it is amazing to be able to do this so early into my career. I am excited to keep up this important work and I hope this goes a little way in making diverse people in materials, minerals and mining like myself feel more comfortable to bring their whole selves to what we do.'

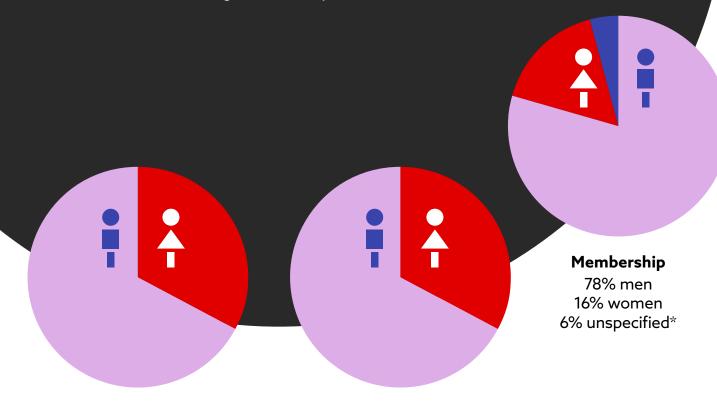
Avery Cunningham GradIMMM, IOM3 2022 Award Winner

Awards & competitions

- Judging panels scored over 150 nominations for the 2022 IOM3 Awards & Prizes. The
 winners were presented with their medals, prizes and certificates at the Special Awards
 & Publications Lunch Reception and Premier Awards Christmas Dinner on 8 December
 at the IOM3 London headquarters
- The Education & Outreach Fund reviewed the former Education Awards and launched the Student & Apprentice Awards to recognise excellence in IOM3 members who have recently completed a qualification or apprenticeship in a materials, minerals or mining related field. The winners were presented with their prizes at the Education & New Fellows' Dinner at IOM3 headquarters in London
- The reviewed IOM3 Funding Scheme was launched and among the applicants, 20 received Grants to Support Knowledge Exchange and Bursaries to Support Learning
- The 2022 round of the Young Persons' Lecture Competition saw over 80 entrants competing in the local and regional heats. The UK final was held at The Armourers' Hall and was won by Lauren Eggleton, the North East finalist. The event was once again supported by the Worshipful Company of Armourers & Brasiers, the Henry Royce Institute and IOM3 Affiliated Local Societies
- 30 entrants took part in the international and regional Young Persons' Lecture Competition heats and competed in the online Young Persons' World Lecture Competition, which was won by Rathosivan Gopal of Malaysia.

Diversity & inclusion

- Five member network groups (ADM3, EMM3, PRIDE, SECC and WIM3) promoted diversity within the fields of materials, minerals and mining
- IOM3 continued to avoid single-gender speaker panels at its conferences, which is something that will be continued into 2023 and beyond
- The Institute celebrated several calendar awareness days throughout 2022, including Pride Month, UK Recycling Week and Women in Engineering Day among others
- The IOM3 team and Trustees received training in inclusion, diversity and equity as well as unconscious bias
- Across digital news, podcasts and Materials World articles, IOM3 has featured conversations on equality, diversity and inclusion, LGBTQ+, women in mining and minority communities.



Executive board

33% women 67% men

Advisory Council (Officers)

33% women 67% men

* Data taken from name prefix where available.

Student & Early Career (SEC)

- The committee welcomed Dr Aimee Goodall CSci MIMMM and Dr Ilija Rasovic MIMMM as their new Chair and Vice-Chair for 2022-23
- Over 100 student and early career members and non-members joined the online events
- Dr Kyle Marshall CEng MIMMM (Rolls-Royce plc), Dr Tannaz Pak CEng MIMMM (Teesside University) and Mrs Sarah Boad CEng CSci FIMMM featured in the 2022 'Road to Chartership' event on professional qualifications
- Professor MariaPia Pedeferri of Politecnico di Milano delivered the annual Art Lecture 'Interference Colours on Titanium: From Science to Art'
- Former Chairs of the Committee gave a presentation on their career progression and useful advice they received
- Committee members published two collective pieces on networking tips and how they got into materials science
- Dr Aimee Goodall started her Chartership journey and is sharing her experience and progression in a blog
- IOM3 offers multiple opportunities to update knowledge, skills and understanding and in 2022 we launched the 'Student & Early Career Professional Development resources' page with features, resources, news items, podcasts and events for student and early career members and non-members
- Two SECC members were featured in the *Materials World* Professional Development section on careers in product compliance and materials failures and more members contributed to articles published throughout the year.

'I didn't see it coming. I thought the other presentations were incredible and I just feel honoured the judges felt mine was worthy of winning compared to everybody else as the standard was so high.'

Lauren Eggleton, Young Persons' Lecture Competition UK Final Winner



International

- The partnership between IOM3 and ASM International continued in 2022 with two more webinars in June and November on aluminium and nickel respectively, with over 700 registrations
- Martin Cox CEng FIMMM was confirmed as the Chair of the IOM3 International Affairs Committee
- IOM3 continues to establish international links in India, Ireland, and Argentina as part of its international strategy.

Events

- 2022 saw IOM3 Events return to staging face-to face events with solid levels of delegate interest. IOM3 hosted: 23 webinars, 3 virtual events, 12 in-person or hybrid events
- As of November 2022, IOM3 events attracted over 3,700 registrations from 44 countries, with nine more yet to take place before the end of the year
- Building on the success of our contract work for the European Collaborative Creep Committee, the team has secured a second contract to support their 2023 conference
- IOM3 successfully won the bid to host the International Congress on Ceramics (ICC12) in Birmingham in 2029
- We narrowly missed out on the bid to host the European Federation of Corrosion EuroCorr conference in Dublin 2025. However, the Federation was impressed by our proposal and we have been strongly urged to resubmit the bid to host in Dublin for 2026.

Education & training

- In September the IOM3 Business Partner Programme was reimagined to deliver more benefits to subscribers. Organisations confirming subscriptions during 2022 included Netzsch Instruments, University of Hertfordshire and Industrial Chemicals Group
- IOM3 supported the first UK Metals Expo event, contributing to the seminar schedule as well as exhibiting
- IOM3 ran five INFORM webinars on topics including extensometry, exoskeletons, battery technologies and sustainable polymers, attracting over 600 registrations. These webinars allow organisations to deliver technical or educational content while increasing their profile and that of their product or service
- A restructure of the IOM3 Training Academy took place, including appointing a new Training Co-ordinator to support our learners from registration to completion and a dedicated Programme Development Executive to scope out new opportunities for us to support upskilling in our sphere of influence
- Classroom courses have made a welcome return with learners keen to engage in face-to-face teaching
- IOM3 Training Academy developed and launched a new online learning platform in conjunction with the launch of the new PIABC Level 3 Certificate and Level 5 Diploma in Packaging qualifications. The new platform will be used to extend our offering in the online/distance learning training market
- We conducted 22 End Point Assessments for the Level 3 Composites Technician apprenticeship standard and look forward to starting EPAs for the Level 6 Materials Science Technologist and Level 7 Materials Process Engineer standards in 2023
- The Polymer Study Tours relaunched post-Covid with successful courses for secondary school design & technology teachers held in Victrex, Lancashire, UK and Bericap, East Yorkshire, UK.

Total learners

Classroom courses

Virtual course

Blended/online/distance learning

Bespoke courses

9



Communications & policy

- IOM3 continued to use our integrated emailing system which produces monthly updates and allows members and non-members to opt-in to communications by material, sector, and community
- IOM3 responded to relevant government consultations, calls for evidence and
 parliamentary inquiries to inform and influence policy-making. Examples include
 the BEIS consultation on the design of a new climate compatibility checkpoint for
 oil and gas licensing; BEIS call for evidence on the challenges and opportunities for
 UK advanced materials; Environmental Audit Committee inquiry into green steel;
 and Defra consultation on legally binding targets to reduce river pollution from
 abandoned metal mines, half residual waste and the future possibility of a resource
 productivity target
- IOM3 helped to shape important policy decisions and share knowledge through a range of fora and mechanisms such as President Neil Glover representing IOM3 on the Critical Minerals Expert Committee, which played a pivotal role in shaping the UK Critical Minerals Strategy
- Partnership working continued including work on sector skills as part of the Environmental Policy Forum, providing joint evidence to the House of Lords Science and Technology Committee inquiry into people and skills in UK STEM with the National Engineering Policy Centre; and contributing to the development of the Science Council Climate Conference.

Library & journals

- The IOM3 library saw an increase in visitors over 2021
- We continued to enhance our digital catalogue, ICON, available via the IOM3 website, with more personal papers and collections being added
- A plan has been developed to display heritage items at the Grantham office
- IOM3 library further developed its partnership with other engineering libraries
- Impact factors have been improved for many IOM3 journals
- IOM3 saw the first publications released on the Materials Open Research platform through Taylor & Francis (T&F).

Content & magazines

- The *Materials World* rebrand has delivered a cleaner look that allows clear representation of all our activities and showcases the diversity of multidisciplinary content
- Editorial, design and journalistic capabilities have been recognised with one of the team's Staff Writers nominated for a Newcomer Award by the Professional Publishers Association, and the magazine was highly commended as Best In-house Magazine by Memcom focusing on member value
- The magazines team continued to build strong relationships with the TCs following their restructure, encouraging synergies between them by working with them to expand on content areas as identified in our reader survey last year
- The unwrapped copies of *Materials World* continue to be received well. The initiative rolled out in July 2021 was shortlisted for the Professional Publishers Association 2022 Sustainability Award and has saved around 680kg, so far, in single-use polywrap.
- We noted good daily interaction with the online industry news these are some of the most popular pages of the website in terms of regular engagement
- Released 16 'IOM3 Investigates...' podcast episodes focused on issues relevant to professionals working in materials, minerals and mining sectors.





Technical Communities

- April 2022 saw the launch of the new Technical Community (TC) structure after nearly two years of extensive review and consultation across the membership.
 The new structure has 22 groups including two new groups covering Materials Characterisation & Properties and Materials Processing & Manufacturing
- Each group has a clear identity linked to that for the Institute, consistent naming, structure and operation to optimise the benefit to members, and enhance the opportunities for increasing the awareness and influence of the Institute externally.
 During the year Chairs and Leadership Teams (former boards/committees) were appointed such that all 22 groups were active by the late summer
- 2022 also saw a review of how the Technology Communities Board (TCB) operates with recommendations for changes with the Trustees late in the year. Changes to TCB included a change to the responsibility for the Strategic Advisers (SA) to become responsible for one of nine overarching technical themes which will underpin all Institute technical activity and further encourage TC collaboration. Each SA will look after two to three TC groups along with a dedicated IOM3 team member to foster good communication, consistency of working and working together towards the broader objectives of the Institute
- The end of 2022 saw the TC Forum which provided a fantastic networking opportunity for TC chairs, Strategic Advisers and IOM3 team members to share best practice and foster strong working relationships, building on the positive changes made during the year.

Digital transformation

- Our digital systems have continued to develop and be enhanced during 2022 in order to support IOM3 activities in all areas
- One of the main digital projects in 2022 was the Technical Communities restructure, which involved a significant data mapping exercise for our member interests and setting up a full set of new web pages for all of the new Technical Communities, with new logos and branding
- Another restructuring exercise took place with the IOM3 Grades review, where significant work was required to ensure that the new grades structure was implemented smoothly on our database and was also reflected in the website content
- Some changes were introduced to the design of the website to make navigation less confusing and make tagging by category more obvious, to assist users in finding content of interest
- The restructured Business Partner programme involved some work on our website to allow for the new Business Partner benefits set up and also resulted in an attractive new style of landing page with icons to signpost users to information. This will be replicated in some of our other landing pages in future for clearer and easier navigation
- Advertising on the website was extended to news pages to increase the attraction to advertisers and provide additional income from digital advertising
- An email marketing tracking system has been established across all of our activities
 to ensure that email campaigns are co-ordinated and customised as far as possible
 to people's interests. Our regular newsletters are now well established with good
 open rates. We have been measuring the effectiveness of our various marketing
 campaigns in order to optimise future promotion of our activities to members and
 non-members
- The Preside website software was upgraded to a newer version, providing improved functionality and performance, and the move to cloud hosting for the website is imminent
- In 2023 we will start to implement engagement scoring on our customer-facing systems to be able to track engagement of members and non-members and understand where this can be improved. The aim is also to develop a membership benefits statement in future.

IOM3 team & building

- IOM3 further increased its recycling rate during 2022 to 69% at our London site
- A review of the IOM3 estates portfolio in 2021 resulted in Trustees investing
 in the London site to provide improved working and meetings facilities. These
 improvements included the installation of a new air sourced heating and cooling
 system, providing a resource efficient low carbon way to heat and cool the building,
 and completely removing any reliance on natural gas
- Additional works included moving to motion sensor lighting to further improve energy use and costs
- The team continued to perform well in difficult circumstances, with our *Materials World* staff receiving a highly commended award from Memcom for best in-house magazine
- IOM3 has been fortunate to have access to an online learning platform during 2022 and this has enabled the team to access a wide range of training courses.

'Great location, tube stop right next door and a 15 min walk from St Pancras. Good technical facilities eg screen, laptop, speaker, camera etc all worked well.'

Becky

'Room was set up just as we needed. Dilyana was so helpful and provided everything we needed.'

Mandy Sangha

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the importance of reducing energy demand

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their practical applications, professional qualifications & recognition.

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