



IMFORMATION DEC 2023



WISHING ALL OUR MEMBERS A

MERRY
Christmas



AND A PROSPEROUS NEW YEAR





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IMF DIARY

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You can find details of courses and qualifications on our website- <https://materials-finishing.org/>



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support@aerotechlabs.co.uk



Here we are again at the end of another year with Christmas rapidly approaching, another birthday past and a year disappeared in a flash!

This has been a crazy year with lots of travelling, mostly but not all for business, but with a couple of “crash out” holidays in Tenerife spent reading, eating and drinking! I think I’ve been on 28 planes, from the glorious mega A380 of Emirates to a tiny Bombardier Q300 on an internal flight in New Zealand! It’s actually quite nice to have a couple of months in the UK before the travelling starts again in February 2024.



I’m writing this straight after the AGM, where it was great to catch up with many of you and enjoy the now traditional “first Christmas lunch of the year”.

We received 2 excellent presentations from Dr Violaine Mendez of Indestructible Paints on their development programme on chrome free anti-corrosive primers, and from Messrs Kenzie, Ross and Nicell on the routes to Carbon Reduction and Energy Saving. Both were extremely interesting and thought provoking.

It was most surprising for me to be awarded the W.Canning Bi-Centenary Award for a paper I actually wrote back in 2022 on “Environmental and Legislative Impacts on Anti-Corrosion Primers and Paints”, published in the bulletin section of Transactions. The paper was based on a lecture I gave back in September 2021 to the Japanese conference on Surface Engineering, this of course being delivered through the Zoom platform!

At the AGM we said good-bye to our President for the last 4 years, Professor Karl Ryder, and welcomed our new President David Neal. Unfortunately, Dave could not be with us on the day, as he is recovering from major surgery, but I understand he will be fully “up and running” in the new year.



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It's been a great pleasure working alongside Karl over the past 4 years, although to be fair much of our communication has been through the virtual world on Zoom or Teams!

During November, both Karl and I had the pleasure of attending the Oil & Colour Chemists Association technical conference, SURCON 2023, held this year in the conference centre of Warwick University. This was a lively event held over 2 days with a theme of achieving Carbon Zero by 2050, and managing sustainability, particularly within the coatings industries.

Karl gave an excellent paper on his work on electrochemical and spectroscopic properties of electronically conducting polymers, and we were both invited to sit on the panel for an open discussion on the UK regulatory landscape. This did turn into a bit of a discussion on both EU and UK REACH (probably my fault!) but it certainly was a lively 60 minute debate!

On the subject of REACH, there is currently much confusion over the re-authorisation or otherwise of Chromium Trioxide, with talk of the chemical being taken out of Annex XIV (authorisation) and moved into Annex XVII (restriction) of the EU REACH regulations. It is uncertain if this will be the case, and whether the multiple uses of CrO₃ will be included, or just specific uses particularly aerospace.

Along with colleagues from the IMF and other technical associations, I am monitoring this and as more is learnt I will report to you through IMFormation.

So can I finish by wishing you and your families a very happy Christmas, and a happy, successful, but most importantly a healthy 2024.

Graham Armstrong



AGM 2023 (i)

Report of the President to the AGM, November 2023

My previous reports to our AGM have been dominated by emotive accounts of pestilence, war and sky-high living costs. As I write, I am happy to see that at least the UK rate of inflation is returning to more normal and manageable levels and hope that this will be of some comfort to the economic outlook of the UK and to our members. During the past twelve months the activities of the Institute have continued in full operation and I am delighted to use this opportunity to welcome our new President David Neal of Rolls-Royce. Dave is a global expert on the use of paints and coatings technology for the aerospace industry and will take over the chair of the management board from me at the AGM. Throughout my time as President, I have been supported and guided by the members of the management board but in particular by the Immediate Past President Barry Gay. The Institute is still very much reliant on Barry's involvement in the day-to-day operations of the IMF and in order to retain his services on the board, he has agreed to remain with us in the role of Executive Past President.



Sadly, during the year, we lost one of our most long-serving members and a former president, Peter Farr. Peter was known and greatly respected by many in the IMF and in the academic community. His funeral was well attended by representatives of the IMF and his former colleagues and students. In honour of his contributions, we have inaugurated a prize in Peter's name to be awarded to the authors of the best publication in electrochemistry appearing in *Trans IMF*.

We have been active, as always, in representing the interests of the IMF in political and policy engagement and continue to sit on the Parliamentary and Scientific Committee where we contribute both to the discussion of current issues and to the agenda setting. The IMF was also a partner in an Innovate UK bid for a £1 m project to develop a recycling pathway for gallium (from





AGM 2023 (ii)

waste lighting), but unfortunately this was unsuccessful. We will continue to look into other ways of involving the IMF in research, development and innovation projects. This has been coordinated through the Science committee and largely by the efforts of its chairman Trevor Crichton. At the AGM Trevor will step down from that role and so I take this opportunity to thank him for his many years of service and forbearance. Fortunately, Trevor will remain as a member of the Science Committee and I will take over as chair. I also will thank Eddy Cotton (chair of the Education and Training Committee) and Phil Alexander (Chair of Southern Branch) who have stepped down this year, for their long and dedicated service.

During the year the IMF contributed to several external events and took a large stand at the *Surface World 2023* exhibition (Birmingham NEC). We had a central area attended by many of the IMF management and staff where we helped to raise awareness of the training and industry support that the IMF provides to its members. The two days were quite busy, and vibrant. Also, both myself and Graham (Secretary General) have represented the IMF at the *SURCON* conference (University of Warwick) of the *Oil and Colour Chemists' Association* (OCCA) and were panel members at its strategy discussion session. This is a strategic sector for the IMF now as the core interests of many of our members (including the new President) lie in the organic coatings and paint industries.

This is my last year as President of the IMF and it has been my honour and privilege to serve. I believe that the IMF continues to do well as a charitable Institute, and this is entirely due to the willing and generous voluntary contributions from its groups, sections, officers, and members as well as the dedicated staff. So, I will take this opportunity once again to thank you for all your efforts throughout this year. Finally, as we look forward to another exciting and challenging year, I wish you all a very merry Christmas and a happy and productive 2024.

Prof. Karl S. Ryder

November 2023



2023 Award Winners

Jim Kape Memorial Award

(Sponsored by the IMF). This is presented from time to time for a paper of significance in the field of aluminium or other light metal finishing and published in Transactions.

V.Klimas, A.Naujokaitis, S.Jankauskas and A.Jagminas

'Anodising of aluminium in formate solutions with formation of porous alumina arrays'.

p 333

CANNING BI-CENTENARY AWARD

This award is for the best practical paper published in the Bulletin section of Transactions.

Graham Armstrong

'Environmental and legislative impacts on anti-corrosion primers and paints: the use of anti-corrosive primers and coatings in aerospace applications'.

p 178

The Peter Farr Memorial Award

This award is for the best paper published in Transactions, that has shown the most valuable development in the science and practice of electrochemistry in general and electrodeposition in particular.

Atiqah Binti Jasni, Sachio Yoshihara, Fumio Aiki and Hideki Watanabe

'Pyrimidine derivative-based cyanide-free silver electroplating bath'.

p 193



Joe Edwards Memorial Award

This award is presented for the best surface finishing review type paper published in Transactions.

N.Ariharan, C.G.Sriram, N.Radhika, S.Aswin and S.Haridas

'A comprehensive review of vapour deposited coatings for cutting tools: properties and recent advances'.

p 262

Best Student at Foundation Level –

Rosemary Newick

Best Student at Technician Level –

Mackenzie Hayes



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 Choice & Value





AGM Presentations

Anti Corrosive Primers for Aluminium Alloys

Dr. Violaine Mendez, Indestructible Paints Ltd.



Routes to Carbon Reduction and Energy Saving

Bryan Glendinning – CEO Engenera Renewables Group

Martin Kenzie – Sales Manager 2-G Energy Ltd

Gaige Ross – Sales Director Smart Ease Finance

Gerry Nicell – National sales Manager Engenera Renewables Ltd

THE INSTITUTE OF MATERIALS FINISHING

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We are a leading provider of technical training and skills development for employers and individuals. IMF courses lead to recognised qualifications and cover a wide range of materials finishing and surface engineering applications. IMF tutored courses, distance learning and corporate training underpin business performance and enable profitability.

Foundation Module Basic Surface Finishing

Develops fundamental understanding from 29 Units of which a student studies 15, including 7 mandatory units. One of three core technology blocks are chosen, either **Electroplating** (8, 9, 10 & 18); **Organic Coating** (19, 20, 21, & 23); or **Aerospace Finishing** (19, 21, 24 & 25), each comprising 5 units plus 3 optional units relevant to the student or their employer – all units are listed below.

Two pieces of marked coursework are required and on passing an examination a student is awarded the **Foundation Certificate**.

Unit 1 *	Surface Finishing
Unit 2 *	Corrosion
Unit 3 *	The Environment & Surface Finishing
Unit 4 *	Health and Safety
Unit 5 *	Cleaning and Pre-treatment
Unit 6 *	Sacrificial Coatings
Unit 7 *	Services
Unit 8	Surface Improvement
Unit 9	Principles & use of Electroplating (Double unit)
Unit 10	Plant and Equipment
Unit 11	Copper, Silver and Gold Plating
Unit 12	Nickel Plating
Unit 13	Chromium Plating
Unit 14	Zinc & Cadmium Plating & Passivation
Unit 15	Electroless Plating

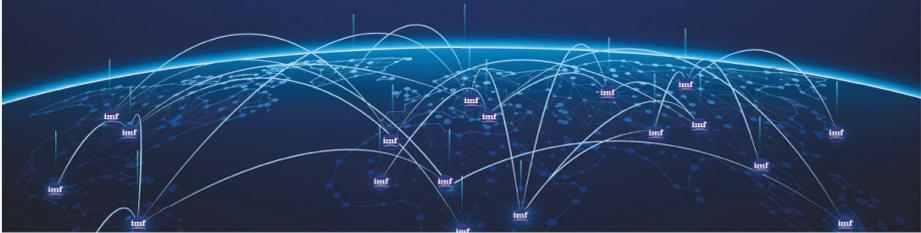
Unit 16	Alloy Plating & Composites
Unit 17	Printed Circuit Board Processes
Unit 18	Electroplating - Care & Maintenance of Solutions & Product Quality
Unit 19	Conventional Paint Processes (Double unit)
Unit 20	Electrophoretic Paint Processes
Unit 21	Paint Application Methods
Unit 22	Coating Powders & Application
Unit 23	Testing Paint & Powder & Coatings
Unit 24	Chemical Conversion Coatings and Sol Gel Coatings
Unit 25	Anodising of Aluminium & Alloys
Unit 26	Vacuum Coating Processes
Unit 27	Duplex Coatings of Galvanising plus Paint
Unit 28	Electroforming
Unit 29	Nanotechnology

* Mandatory units

On achievement of the **Foundation Certificate** candidates may wish to progress to the **Technician level modules**, please see over the page for details.

EDUCATION AND TRAINING (ii)

For more comprehensive details of all modules offered please refer to our website www.materials-finishing.org where you find the full syllabus for each module.



Technician Modules

Develops in-depth knowledge for key finishing technologies and their application and best practice methods.

Principles of Electroplating	Broad introduction to electroplating technology
Electroplating Practice	Industrial application of major metals and supporting pre-treatments for electroplating and electroless deposition
Paints, Lacquers & Varnishes**	Application methods, equipment, curing, drying and testing of solvent and water based industrial finishing processes
Powder Coating	Application methods, testing, environmental, health & safety topics
Environment, Health & Safety	Legislation information on environmental, health & safety topics
Materials Science	Manufacture, properties and examination of materials which require various forms of coating or treatment to meet service life needs
Automotive Surface Finishing**	Applications specific to the automotive industry
Electroforming	How electroforming can be used to manufacture components and tooling

On successful completion of four marked assignments and passing an examination, a student is awarded a **Technician Module** certificate.

Passing two Technician modules leads to the award of **Technician Certificate**.

Passing four Technician modules leads to the award of **Advanced Technician Certificate**.

** These modules together cannot rate towards the award of a Technician Certificate





Congratulations to all our students who passed exams taken in October 2023!

Foundation Certificate – Distance Learning - 3 passes, 4 Merits and 3 Distinctions

Technician Modules – Distance Learning – 1 Pass and 2 Distinctions

Technician Certificate Awarded – 1

Our next start date for all Distance learning courses is **19th January 2024**

Anyone interested in a course please contact me for further details and costs Karen Yates -

karen@materialsfinishing.org

Or telephone 0121 622 7387

Soldering Symphony: Fraser Unveils The Perfect Pairing Of Paste And Wire For Seamless Precision



In the intricate world of electronics manufacturing, where precision is paramount and efficiency is key, Fraser Technologies emerges as a beacon of innovation, addressing two critical challenges facing the industry today: solder tip erosion and the quest for halogen-free soldering paste.

Are Your Solder Tip Erosion Rates Far Too High?

Solving solder wire challenges with Koki's 72M series

Electronics manufacturers perpetually seek cost-effective solutions to enhance their production methods. A pressing concern has been the aggressive nature of standard un-leaded solder alloys used in hand soldering wires, causing a voracious appetite for soldering iron tips. As components shrink in size, soldering iron tips become more sophisticated and expensive, intensifying the need for a breakthrough.

Enter Koki's 72M series of solder wires, a game-changer in the battle against tip erosion. These special un-leaded alloys form a protective barrier during the soldering process, extending the life of the iron tip up to four times. The powerful wetting flux core allows operators to run the iron tip at lower temperatures, not only improving tip longevity but also enhancing the overall manufacturing economy.

Beyond addressing tip erosion, the 72M series tackles other common challenges, such as improved wettability. The introduction of new activators and a novel resin

composition grants superior flux coverage, doubling soldering speed and saving precious time. This improved wettability extends to difficult-to-wet metals like nickel and brass, preventing bridging even in challenging conditions.

The 72M series doesn't stop there; it boasts low residue, minimal spattering, and emits low fumes, ensuring a clean and operator-friendly environment. With high electrical reliability categorized as ROL0, it inhibits electro-migration, securing high surface insulation resistance.

Why choose Koki's 72M series? It not only solves key hand-soldering challenges but also offers a versatile and high-quality product suitable for applications in the automotive and aerospace industries. A resounding 98% of customers have made the switch - the question remains, are you ready for the change too?

Halogen-Free Solder Paste: Koki's S3x58-Hf1100

Pushing ahead with environmental and sustainability commitments

In a world increasingly attuned to environmental concerns, Fraser Technologies, in collaboration with Koki, unveils the S3X58-HF1100 solder paste - a halogen-free marvel that harmonises superior quality and performance with environmental responsibility.

Certified as halogen-free, this paste reflects a commitment to sustainability without compromising on performance. Halogen removal from

the formula enhances the product's environmental profile, aligning with Fraser Technologies' forward-looking pledge to protect the planet.

The S3X58-HF1100 Koki solder paste stands out with its powerful wetting technique, performing on par with halogen-containing paste types regardless of surface finish. Expertly adapted flux formulation ensures effective solder meltability under various conditions, accompanied by a stable oxidation prevention layer that protects solder particles from oxidation.

The paste's flux formulation excels in flux coagulation, enhancing solder performance by minimising voiding and splattering. Fast flux coagulation not only improves efficiency but also ensures smooth solder wetting, a critical factor in achieving high-quality solder joints.

This halogen-free solder paste promises excellent printing, idle time, and tack time, coupled with strong electrical reliability and compatibility with conformal coatings. Fraser Technologies invites businesses to explore product trials and personalised customer service to ensure that the S3X58-HF1100 Koki solder paste aligns perfectly with their business and performance requirements.

Fraser Technologies and Koki present a symphony of solutions here, and the time is now to embrace these innovations and orchestrate a future of seamless, sustainable electronic manufacturing.

For more information, please contact us:
Tel: 01506 443058 | E-mail: sales@frasertech.co.uk | www.frasertech.co.uk

I'm Laura Godwin, Recruiter and Director of Godwin Recruitment, an Independent Recruitment Consultancy.

I am very proud to partner with IMF Member, Indestructible Paint Ltd. to support their recruitment plans. To date, I have recruited many technical and administrative employees across the business, to include Sales Administrators, Quality, Health & Safety Manager, Application Specialists, Technical Laboratory Manager, and IT Manager. I have also recruited a Development Manager for the IMF.



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IMF GOLF DAY
2024

If you are interest in joining us
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Please email

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For
More information.



JOIN US!

Fischer Hands-on! Workshop Measuring with XRF



Date: Wednesday 13th March 2024

Time: 10-3 pm

Location: Fischer office, Pershore, WR10 2JL

Agenda details:

- The Fundamentals of XRF
- Developing an application (DefMA structure) and influences affecting readings
- The Importance of Calibration
- Getting Hands-on!
- Interpreting Data – making measuring meaningful!
- Question and Answer Session

To join us for this event please register by contacting

Georgina McWhirter

Email: gmcwhirter@fischergb.co.uk

Phone: 01386 577370

www.fischerinstrumentation.co.uk

JOIN US!

Fischer Hands-on! Workshop Measuring with Handheld Gauges



Date: Wednesday 10th April 2024

Time: 10-3 pm

Location: Fischer office, Pershore, WR10 2JL

Agenda details:

- The Fundamentals / Avoiding the Common Mistakes
- Probing the Best Practice Approaches that Work!
- The Importance of Calibration
- Getting Hands-on! Instrument Set-Up & Tackling Applications
- Interpreting Data – making measuring meaningful!
- Process Control and Optimisation
- Question and Answer Session

To join us for this event please register by contacting

Georgina McWhirter

Email: gmcwhirter@fischergb.co.uk

Phone: 01386 577370

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NEW EXETER HOUSE



We are looking at trying something new in 2024.

Prior to COVID, the Southern Branch of the IMF used to hold seminars at varying venues around the Southampton/Portsmouth area and invite people to attend and listen to speakers talking about interesting subjects. Since COVID and also due to the lack of time available for attendees, these seminars have been conducted via ZOOM or the use of alternative platforms.

Now we would like to revisit the idea of face to face seminars but utilise New Exeter House (based in Coleshill) as the venue. What we are proposing is that we open up New Exeter House for an evening seminar which could then either be attended in person OR via a ZOOM link. This would give the opportunity of allowing people from all over the country to come and see us in person at Exeter House or if distance is too much then watch the seminar via the ZOOM link.



Face to Face meetings give people much more opportunity to open up discussions and also to see what New Exeter House has to offer.

If you think that this is something that you may be interested in then please let us know by emailing:

helen@materialsfinishing.org OR
Johnburgess@materialsfinishing.org

This is “YOUR IMF” so why not come and join us and be a part of it.



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Aluminium Surface Engineering has an exciting opportunity to join our management team. We are based in Coventry with over 75 years' experience as leading specialists in aluminium hard anodising.

It is essential that you have hands-on experience of anodising or the metal surface finishing sector. You are likely to be a trained anodising or electroplating chemist familiar with problem solving in an industrial environment.

You will:

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- Work independently as well as part of a team using your strong communication skills with both expert and non-technical groups.
- Be comfortable managing change and implementing processes, including training of staff, documentation, and representing the company in technical expertise.

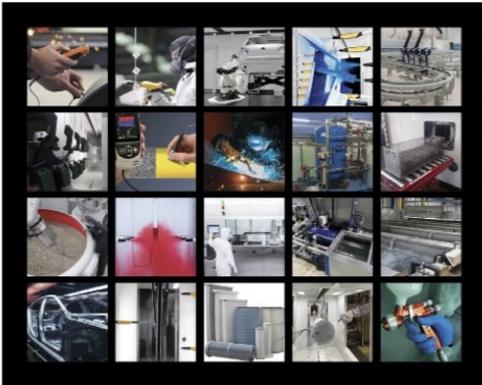
Professional qualifications, such as IMF are advantageous. Further training and development will be tailored to the successful candidate to assure success in this essential role.

For job description and application form email: accounts@ase4anodising.co.uk

EXHIBITIONS



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