Wishing you a very

Merry Christmas

And a Prosperous
New Year
From Everyone at the
Institute of Materials Finishing

Institute of Materials Finishing
Due to the current Covid restrictions New Exeter House is closed.
New Exeter House Staff will be working from home during this period.
You can email us on:
helen@materialsfinishing.org or karen@materialsfinishing.org

New Exeter House, Birmingham B46 1HQ
Email— info@materialsfinishing.org
Website— www.materials-finishing.org
IMF DIARY

DISTANCE LEARNING START DATES

21st January 2022

You may enrol from 1st Dec 2021

You may enrol up to 30 days in advance of the start date.

Please note that all course fees must be paid in full before any course materials can be released.

Please contact Karen Yates by email karen@materialsfinishing.org

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

UPCOMING WEBINARS/SEMINARS

Corrosion – a webinar

11th January 2022 at 2.00pm

The Hull Cell – a webinar

8th February 2022 at 2.00pm

Brush Plating – a Zoom seminar

15th February 2022 at 7.00pm

Everyone is invited and if you wish to attend any webinar or seminar please contact John Burgess by email :- JohnB_IMF@btinternet.com
I know I say this every year, but where has the last year gone? Is it purely a sign of getting older, or has time really accelerated?

Thinking back over 2021, so much has happened since January. 11 months ago, we were living under strict COVID lock down rules, having had a non-event Christmas without our usual festivities, and working from home with minimal contact with anyone outside our very limited “bubbles”.

The majority of us are now at least “double vaccinated” with many of us now having received the third “booster” jab. I know this has given me a much better feeling of being able to live a more normal life, and to be able to personally interface with colleagues and customers. It was really great to meet up with IMF colleagues at our recent hybrid AGM, and to enjoy some social activities with fellow board members!

And then, just when we were thinking about Christmas parties, overseas travel, and holidays, along come Omicron and we’re back into days of uncertainty! I know the government have to impose some restrictions whilst the scientists evaluate what, if any, different affects this new variant will bring, but I do hope we will at least be able to celebrate Christmas.

2021 has been a good year for the IMF. Despite all the issues thrown up by COVID restrictions, we have continued to thrive, with continued better than expected education sales, and continued interest in the series of virtual presentations and webinars. An exciting development is the introduction of “Podcasts”, organised by our chair of the M&M committee John Burgess. These are interesting chats with members who have worked in our industries for many years and tell of their experiences. Watch this space, John is trying to get me to take part in one during 2022!

But certainly, the biggest news for the Institute during 2021 has been the move from central Birmingham to new offices in Coleshill. There are more details on this in this
edition of Information, so please have a look. I know Helen and Karen can’t wait to move into these new offices, but this will be tempered to include some continued working from home to follow government guidelines.

2021 has seen no let up with a necessary involvement with REACH, and I continue to monitor the work through the Cross-Sector Group, and their continued discussions with both DEFRA and the HSE.

Of some concern is the possible lack of re-authorisation of both chromium trioxide and chrome salts, after the expiration of the existing authorisations starting in September 2024. A task force under the auspices of ADCR has been established to lobby for an extension, but this will only cover aerospace use, which will exclude possibly larger uses in industrial applications. I will continue to monitor this and report updates as I receive them.

So, we now look forward to 2022, but with what degree of confidence for a better and brighter future. Certainly before the discovery of Omicron, I think everybody had some degree of positivity, but as we stand now, will this carry through? My own personal opinion is that we should take a positive view and I do believe 2022 will be good!

I wish you all a very happy Christmas, and a successful and healthy new year!

Graham Armstrong
December 2021.
Now is the time to act on reducing carbon emissions

Graham Fraser, MD of Fraser Technologies

There has never been a bigger focus on reducing carbon emissions. While net zero is a vital long-term goal for all of us, steep emissions cuts – especially by the largest greenhouse-gas emitters – are crucial in the next 5 to 10 years to keep global warming to no more than 1.5 °C.

When looking to be more sustainable, every element of the business process should be considered, and a good place to start is with cleaning. A very simple switch can have a major impact, especially for those who haven’t recently checked what products they use.

Cleaning solvents were historically guilty of very high global warming potential (GWP) and had seriously detrimental effects on the atmosphere. However, there is a new generation of solvents which have been developed specifically with the environment in mind and are far less harmful than comparable solutions.

GWP is one of the methods for measuring the impact a gas will have on the atmosphere. For companies manufacturing gases, and for those purchasing and using them, it is critical to manage environmental impact by keeping the GWP as low as possible.

At Fraser Technologies, we work hard to ensure we only offer the most sustainable products on the market. For example, Opteon™ SF80 from Chemours has an ultralow GWP of less than 2.5, compared to common F-gas solvents that can have a GWP of up to 11,000. The impact that this simple switch can have is incredible – especially as it is just as effective, and in some cases more efficient, than competitor products. So, not only does it help meet lower carbon goals, but it can also improve the cleaning process and save money.

How much carbon can I save by switching solvents?

We work with many businesses who are looking to reduce their carbon emissions, and our speciality fluids can help them meet their goals. We recently worked with a world-renowned aerospace manufacturer to find an alternative to the high-GWP solvent they were using. We switched their solvent to SF80 and assisted in optimising their processes to reduce solvent consumption. This reduced their overall usage of solvent by 28%; saving them around £30,000 per year, and significantly reducing their carbon emissions. With a GWP of 990, the CO² emissions created by the customer were previously equal to the emissions of driving 143 times around the world (or 7.5 times to the moon and back!). With the switch to SF80, the customer’s new emissions are the equivalent of driving from Edinburgh to Moscow!

Climate change can be almost exclusively attributed to harmful gases in the atmosphere, and we can fix much of this by making small changes in all that we do. When it comes to cleaning processes, the solution is already available, with more environmentally friendly solvents that yield the same results.

For more information on how we can help your business meet net zero goals, contact us today.

For more information please contact us:
Tel: 01506 443058 | E-mail: sales@frasertech.co.uk | www.frasertech.co.uk
# 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, 22, & 23); or **Aerospace Finishing** (19, 21, 23, 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**.

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* 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.
**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**.

For more comprehensive details of all modules offered please refer to the IMF website [www.materialsfinishing.org](http://www.materialsfinishing.org) where you find the full syllabus for each module.
The Annual General meeting of the Institute of Materials Finishing was held on the 7th December 2021 at Windmill Village Hotel, Golf Club & Spa Birmingham Road, Allesley, Coventry, CV5 9AL.

After the general meet & greet Barry Gay opened the proceedings to introduce the morning speakers the first of whom was Steven Norgrove (Principal Engineer, Warwick manufacturing Group) to talk about the UK being “Ready for Electrification”

Steven spoke about where the UK is presently with electrification and what will be needed to accomplish the governments requirements. He described about how the car industry is tackling the design of cars especially with the concern of ‘range’ and he went on to describe how battery packs were made from many ‘single cell’ batteries connected together in some cases up to 7000.

He went on to discuss other vehicles, lorries, coaches & buses and larger transport such as airplanes and ships. Although not all of these would be powered by batteries the use of hydrogen for fuel cell electrification was described.

Going forward Steven’s presentation was extremely interesting and left a lot of food for thought.
Our second speaker Martin Goosey presented “The Recovery of Gallium from LED Lamps”

This year saw a feasibility study carried out by Martin and his team into seeing if the metal Gallium could be recovered from LED lamps.

LED lamps contain metals such as Gallium and Indium and as these elements are not in abundance naturally. The study was to see if (by using electrolysis) Gallium could be deposited and therefore be reclaimed.

Martin introduced the other members of the group including the IMF and described the procedure that was adopted to try and recover the Gallium.

LED lamps were supplied, the LED’s removed and the material ground in a ball mill.

It was known that the use of water as a solvent would not work so an organic based solvent was used. An inert anode was used, and the cathode was a polished copper strip so that if there was a deposit then it could be easily visible. The electrolysis was carried out at an electro-platers in the Midlands on a small beaker scale and after many trials gallium was deposited.

The study was only for a short term, but in principle the goal was achieved.

Much more work will be required to turn it into a viable production project.

If you would like to read and understand more please visit www.gallium-recycling.co.uk

After lunch our president Karl Ryder called for the approval of the minutes of the AGM 2020 and gave his report for the year 2020/21.
This was followed by the secretary general Graham Armstrong who gave the Report of the Management Board for the year 2020/21 and also talked about the move of premises to Coleshill to the “New Exeter House”.

In thanks to Helen for her excellent work in planning and executing the move Graham was pleased to present her with a bouquet.

With the sad news of losing our Treasurer Nick Johnson the treasurer’s report was given by Barry Gay who gave an overall summary as to the financial position.

The conclusion of this section was given by Graham Armstrong who announced the names of Officers, Management Board Representatives, Standing Committee, Branch and Group Chairmen to serve for the 2021/22 Institute. This was followed by calling for the approval of the appointed Auditor for the current session.

If you wish to see the 2021 AGM reports please log onto www.materials-finishing.org /About the IMF/AGM/2021 AGM Management Board Reports

The meeting was concluded with the Awards being given as follows on the next page:
Awards for 2021

Gold Medal – J Burgess

Hothersall Medal – A C Hart

Canning Bi-Centenary Medal
‘Electrodeposition : three steps towards sustainability’
A.Mulone, J.Hildenbrand and U.Klement

The Westinghouse Prize
‘Comparison of effects of simulated electric field interference and presence of a barrier in the nickel electroplating process to experimental data’
S.M.J.S.Shourije and M.E.Bahrololoom
98(6), 303-313.

Jim Kape Memorial Medal
‘Effect of tantalum film on corrosion behaviour of AA6061 aluminium alloy in hydrochloric acid- and chloride-containing solutions.
98(5), 243-249.

Organic Award
Electrostatic powder coating process optimisation by implementing design of experiments
By
A D Karaoglan and E Ozden
dept of industrial engineering, Balikesir, Turkey
Transactions January 2021volume 99 number 1

Best Foundation Student - George Harris
Best Technician Student - Jodie Harris
The IMF Have Moved!

Since 1981, the Institute have worked out of an office building close to the centre of Birmingham. Known as Exeter House (after the street that ran alongside).

When first new, this was quite a prestigious facility, and was not a difficult building to access. As time passed, however, being in the centre of Birmingham became more of a disadvantage rather than a benefit.

Commuting into the office, either by road or rail became a chore, and unfortunately the general area around Exeter House became troublesome.

Those of you who knew Exeter House will be aware that the offices were built over a petrol station. The IMF owned the whole site, although the patrol station was on a no cost lease, which had been set up when we bought the site 40 years ago.

So, we were surprised but not unhappy to receive an approach from the petrol station owner to purchase the complete site, at a valuation probably better than could have been expected.

This initiated a search for suitable new premises, and Helen came across a detached office unit, in a dedicated courtyard on the edge of the Coleshill industrial estate in Warwickshire. Not only were these premises of exceptional quality, with better laid out facilities, but were priced at over 25% cheaper than we had been offered for our old site!
The proposal was put to the management board, and it was unanimously agreed that we should proceed.

So we agreed an offer on the new office, and accepted the offer on our old site. Then the “fun” started.

I know from personal experience that selling/buying property can seem to go on for ages, but please take both Helen’s and my words that commercial dealings are far worse. Its only now, 6 months later, that both the sale and the purchase have been completed, and we moved into the new premises on the 1st December.

Helen and Karen now have the “fun” of unpacking all the files we need to retain, so I’m sure that will keep them busy into 2022. There were multiple trips “to the tip” throughout the clear out of the old offices, which only goes to show how much unnecessary stuff all offices retain.

The new address is:

New Exeter House
2, The Courtyard
Roman Way
Coleshill
Warwickshire B46 1HQ

The telephone number remains the same, (0121 622 7387) as we moved away from BT as the service provider earlier in 2021.

We now have the benefit of an excellent Board room, plus an “education room” which will be used for both tutoring, training courses and examinations. In addition there is a smaller conference room, which can be used for committee
meetings, the facility for a properly accessible library and an IMF “museum” detailing our past!

The whole offices are double glazed and air-conditioned, thus providing a far better working environment.

We are planning to invest some of the “profits” from the sale of Exeter House, in advanced electronic presentation and communication equipment, really bringing the Institute into the 21st century!

So we look forward, once the recently imposed COVID restrictions are lifted, to putting together an “open day”, and welcoming all of our members to this new facility!

Graham Armstrong
December 2021
Have you heard the latest news?

www.surfaceworld.com

SURFACE WORLD LIVE

Sponsored by The Institute of Materials Finishing
Proud supporters of the British surface finishing industry

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- Discuss business with new and existing suppliers
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- Get advice from experts in the industry
- Your industry under one roof over two days
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SURFACE WORLD LIVE
NEC, BIRMINGHAM
2nd & 3rd MARCH 2022

Why not beat the queues and register online. Visit www.surfaceworld.com, just click on the registration banner and enter your details.

REVISED DATES:
2nd & 3rd MARCH 2022
OTHER EXHIBITIONS

THE Advanced Materials SHOW
29th & 30th June 2022  NEC, Birmingham, UK
Co-located with

MACH
4-8 April 2022
NEC Birmingham UK
machexhibition.com

SURFEX
EXHIBITION INDUSTRY INSIGHT SURFACING SCIENCE TECHFOCUS THE CUTTING EDGE
7-8 June 2022
Ricoh Arena, Coventry, UK

14th INTERNATIONAL WORKSHOP ON ELECTRODEPOSITED NANOSTRUCTURES
June 9-11, 2022 – Kraków, Poland