WISHING ALL OUR MEMBERS A MERRY Christmas AND A PROSPEROUS NEW YEAR

INSTITUTE OF MATERIALS FINISHING

AGM 2017 - 2018
IMF DIARY

IMF EVENTS

1st FEBRUARY – DISTANCE LEARNING ENROLMENT

KEEP IN TOUCH

PLEASE MAKE SURE WE HAVE YOUR CONTACT DETAILS UP TO DATE. ANY CHANGES PLEASE CONTACT KAREN ON 0121 622 7387 OR EMAIL: KAREN@MATERIALSFINISHING.ORG

NEXT ENROLMENT DATE FOR TRAINING COURSES IS

1st February 2019

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Karen Yates

Tel 0121 622 7387
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Well, here we are, another Christmas close on the horizon, and we’ve no idea where the last year went!!

2018 has been an interesting and eventful year, both for me personally, and with work, but also with the Institute.

This year I have been involved in much foreign travel for Indestructible, and I’m putting this column together in balmy Dubai, with a temperature of 28o! I seem to remember this time last year digging the car our of 18 inches of snow! Can’t say I’m looking forward to getting back to the UK next week!

For the Institute, 2018 has seen some big changes!

In July our long serving Membership and Education manager, David Meacham, took retirement to pursue his many hobbies outside work. He had been with the Institute for over 15 years, and had been responsible for the excellent development of our training offering.

David was replaced by our new team member, Karen Yates, who quickly “clicked in” to our operation, and brought some really fresh ideas to help move the training offering forward.

On behalf of the Institute I have attended meetings of various groups and committees, all looking to promote and protect the materials finishing and surface engineering industries, so vital to the UK economy.

The cross-sector group has strengthened its ties with government departments, particularly DEFRA, with a view to ensuring some form of continuity of chemical management after Brexit, whatever that brings! Meetings and communication will continue into 2019, and I will continue to update our members through IMFormation.

We have discussed in the past the formation of a Surface Engineering Leadership Forum, and over the past 6-9 months this has begun to take shape.

It is planned to officially launch the grouping, under the acronym SELF, at a House of Lords meeting in February 2019. I am convinced this can only do good for our industry!

On a separate note, please look on IMFormation as your house magazine, and as a method of communicating with your fellow Institute members. Helen will always welcome contributions, both from individual members and “company” sustaining members whenever you have news that will be of interest to the material finishing community.

Can I take this opportunity to wish you all the compliments of the season, and a healthy, happy and successful 2019!

Graham Armstrong
The 27th November 2018 saw the AGM 2017 – 2018 for the Institute which was held at The Cobden Hotel, Hagley Road, Birmingham.

After Registration, coffee and biscuits, Barry Gay (President) called to order the meeting with the introduction of Geoff Wilcox and Karl Ryder who stood in for Nick Johnson (Treasurer) and Graham Armstrong (Secretary General).

Paul Lansdell (Master of Ceremonies) opened the proceedings by explaining the fire regulations and the format for the morning meeting which was to be 2 presentations.

Our first presentation was titled “How to save £66 billion” State of the art methods for studying corrosion and coatings.

This was presented by Professor James Sullivan from the University of Swansea who gave an interesting lecture of how corrosion occurred and the steps that are being taken to slow down and inhibit corrosion.

The university has developed methods by which they can now see how corrosion takes place and developed measuring instruments to determine the rates of corrosion formation. Corrosion is one of the most expensive costs to a country being about £7.5m per hour so the work that they are doing is vitally important in helping to reduce these costs.

One interesting by-product that came from the research was that of aid to the forensic world. It was found that fingerprints, which had been left of metals, could be identified even if an attempt had been made to remove them. The level of detail in the fingerprint was high and this research looks as though it will be beneficial in the world of crime prevention.

Our second speaker was Professor Emma Kendrick from Warwick University who gave a talk on “the manufacture of lithium and sodium ion batteries” These types of batteries are now common place in all manner of electronic products and also in the use of electric cars. Emma explained the mechanism by which these batteries are manufactured especially looking into the number of charge/dischARGE cycles that can be achieved in order to retain as much of the battery’s useful life. The goal is to be able to have at least 80 efficiency after some 500 cycles and much work is being carried out to achieve this.

Emma also explained that they were trying to develop a lower manufacturing cost by replacing expensive Lithium material with a cheaper material such as sodium.

Lithium is expensive to mine and is of limited quantity whereas sodium is in abundance from sea water. As always
this in theory should be relatively easy but is proving to be much more difficult.

After the speakers there was a period of question and answer which was lively and informative followed by the awards ceremony.

Christmas lunch with “The Grace” being said by Reverend Dr Margaret Farr.

Lunch was excellent, and the meeting was resumed at around 14-30.

As President, Barry Gay called for the approval of the minutes of the previous AGM held on 27th November 2017 which were proposed and seconded. Barry then followed this with his report outlining the work that was being carried out by the Institute and future projects that were on going.

The Presidents report was followed by Karl Ryder (on behalf of Graham Armstrong) who gave the Secretary General’s report and the Geoff Wilcox who (on behalf of Nick Johnson) gave the Treasurer’s report.

The President then called for the Ratification of Secretary General and Treasurer for 2018/19 and Karl Ryder announced the names of Officers, Management Board Representatives, together with the Standing Committee, Branch and Group Chairmen to serve for the 2018/19 Institute year. Finally Geoff Wilcox called for the approval of the appointed Auditor for the current session.

There was no “Any other Business” and the meeting closed at around 15-30.
**Gold Medal**
The award is made to any member of the IMF who is deemed to have given extraordinary voluntary service to the IMF.

The award was made to FRANK WALSH

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**Canning Bi-centenary Medal- (Sponsored by MacDermid plc)**
This award is for the best practical papers published in the Bulletin section of Transactions.

The Medal was awarded to - H.Riechmann, M.Muller and A.Meyerovich

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**Connie Sieff memorial Award**
This award is for meritorious service to the surface finishing industry internationally.  **The award was made to Shambhu Gupta.**
AGM AWARDS 2017–18

The Westinghouse Prize (Sponsored by IMF)

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 electro-deposition in particular.

The award was made E.P. Georgiou, T. Van der Donck and J.-P. Celis

Eddie Marlow Memorial Award

This award is for outstanding Contribution to the education and training of people working in surface engineering.

Awarded to South West Metal Finishing

Pexa Organic Award (Sponsored by Pexa)

Awarded to J. Stoulil, V. Nikendey, V. Sykorra, K. Drabkova, J. Svedlena and P. Dvorak

Jim Kape Memorial Medal

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.

The Medal was awarded to G. Bikulcius, M. Valius, A. Rucinskiene, S. Jankauskas and S. J. Asadauskas

Best student

Foundation - SANDRA HARRISON

Best student

Technician - MATHEW SHARP
to increase the level of R&D investment from its current 1.7% of GDP to 2.4% by 2027 and to increase this to 3% at some unspecified time in the future. Whilst this is an applaudable objective, it is noteworthy that whilst the UK would be ahead of the global average (2.3% of GDP), it would still be below the levels enjoyed by some other countries, such as the USA (2.79%), Germany (2.88%), Denmark (3.01%), Japan (3.28%), Republic of Korea (4.23%) and Israel (4.27%).

Research funding by UK Government was a consequence of the First World War, after which, in 1918, the Haldane Report made recommendations that government should be evidence driven and that it should listen to businesses, industry and academics. Perhaps some may comment that it has taken over 100 years and we are still not following these principles! However, since UKRI started, it is endeavouring to follow the principles set out by Haldane.

Furthermore, with Brexit on the horizon, Walport said that the UK will need an industrial strategy that is based on research and innovation and this should include research and innovation activities in both the manufacturing and service industries, so the whole of the UK’s economy is served.

Part of this strategy has been the creation of the Industry Strategy Challenge Fund and the first recipient of this funding has been the Faraday battery challenge, which has identified the need for developments in electrochemistry. This sector, of course, sits extremely well in the lap of surface engineering and the IMF is encouraging and it is one aspect of the UK’s future economy that we need to be a major part of, so we are trying to work with our memberships to help develop relevant novel systems.

UKRI has also identified other future challenges, such as manufacturing and future materials, healthcare and early diagnoses, energy, space, construction and quantum

About 100 people attended, including academics, industrialists, politicians, members of scientific organisations and individual members. By attending PSC meetings and functions, we are able to raise the IMF’s profile and promote the surface engineering industry in general, as well as help shepherd Government in its policies regarding industrial and investment strategies.

Government is concerned about education and we took the opportunity to explain to other guests and politicians, that the IMF runs the only dedicated surface coatings course in the UK, using both tutored and distance learning teaching methods.

Although the UK’s economy is primarily based on the service sector, with 80% of GDP, surface engineering facilitates the manufacture of 50 of the UK’s GDP that is derived from manufacturing – and this represents the remaining 20% of our GDP. On top of this, without the ability to modify surfaces, much of the service sector could not operate in its present format, as it is reliant, in part, on electronics and medical equipment and parts, all of which are, in turn, reliant on surface engineering technologies... Nevertheless, it remains quite worrying how few people appreciate the importance of the surface engineering industry to the UK’s economy! This importance was stressed during our conversations.

In his address, Walport said that it is now Government policy to increase the level of R&D investment from its current 1.7% of GDP to 2.4% by 2027 and to increase this to 3% at some unspecified time in the future. Whilst this is an applaudable objective, it is noteworthy that whilst the UK would be ahead of the global average (2.3% of GDP), it would still be below the levels enjoyed by some other countries, such as the USA (2.79%), Germany (2.88%), Denmark (3.01%), Japan (3.28%), Republic of Korea (4.23%) and Israel (4.27%).

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UKRI has also identified other future challenges, such as manufacturing and future materials, healthcare and early diagnoses, energy, space, construction and quantum
The IMF lobbys the Parliamentary and Scientific Committee

technologies, all of which the surface engineering industry will need to play a significant role. Despite UKRI having a broad interest base, it is still seeking new opportunities to help develop the UK’s economy and is keen to receive suggestions from any interested parties.

The UKRI is also planning to set up industrial clusters of partners who have similar ideas and potential developments, but are in need of investment to develop their expertise in developing and commercialising new technologies that will benefit the UK’s economy.

However, Walport stressed that these clusters should be of similar minded companies in the same locality, as some previous attempts at setting up clusters had failed due their partners being geographically remote from each other.

Since the West Midlands is the cradle of surface engineering and it is still home to many companies associated with such technologies, maybe a surface engineering cluster could be set up here?

As part of the PSC’s recognition of the IMF, we have been invited to submit possible topics for discussion by them. We are currently considering the following suggestions:

a) The dependency of the UK’s economy on surface engineering;
b) The importance of SMEs in the UK, and:
c) The future sustainability of materials and remanufacturing.

If anyone has any suggestions of broad topics, please let me know.

Dr Trevor Crichton
Energy Efficient Opportunity
Within the Surface Engineering and Coating Industry

Energy efficiency measures have become a top priority for energy consuming companies because of the increasing energy prices and implemented energy policies. Many companies also receive demands from their customers to reduce their environmental impact.

The purpose of Aston University Low Carbon SMEs Project is to identify advantageous, both economically and environmentally, energy efficiency improvements in surface engineering technologies. The first part of the project is to perform an energy review and map the energy consumption in the business. Once the distribution of the energy consumption has been determined we focus on the profitability of the identified energy saving possibilities and evaluate the environmental benefits, dramatically reducing your carbon footprint, energy use and production costs.

The project is aimed at SMEs in Greater Birmingham, Solihull and Black Country regions.

The advice and support you receive is at no charge as the project is part funded by the European Regional Development Fund.

The project will deliver:

- Energy audit support to measure process improvements lasting two-five days.
- Grant of up to £12,250, the value of which SMEs will be required to match.
- Workshops looking at some of the challenges SMEs face.
- University collaborations to gain access to cutting-edge expertise and techniques.

Energy reviews can be arranged at a time to suit your business and depending on your companies’ requirements can be planned for varying levels of detail.

If you would like to apply for our low carbon business support or book your place at our forthcoming workshops in March 2019, please email smelowcarbon@aston.ac.uk or call 0121 204 4610 and visit www.smelowcarbon.co.uk.
## EXAM RESULTS

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INDESTRUCTIBLE PAINT HIGHLIGHTS ‘ENGINEERED COATINGS AND COATINGS FOR ENGINEERING’

Performance coating specialist, Indestructible Paint Ltd. is presenting its growing range of services for the ninth time at this year’s Advanced Engineering Show – with its largest ever stand presence.

The company’s commitment to research and development continues to produce advanced coating technology solutions, often enhanced by close customer collaboration. Its leading role in creating chrome-free alternatives is a prime example with product developments that have now moved beyond the laboratory into detailed industry trials at the heart of the company’s stand.

Indestructible Paint is also highlighting its developing global distributorship network and its commitment to optimising environmental performance. The company’s belief in developing and growing its own workforce skills – helping it to remain at the leading edge of this specialist sector – is also in the spotlight.

Full details of Indestructible Paint’s track record, range of services and belief in working closely with each customer to meet niche requirements in some of the most challenging applications in industry, are available on stand number Q28.

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www.manufacturingevent.com

The event will be divided into a number of bespoke categories. A selection of the events is listed below:

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- Food & Drink
- Chemicals & Pharmaceuticals
- Life Sciences
- Rubber, plastics & non-metallic minerals
- Metals
- Electronics
- Electrical Equipment
- Precision Engineering
- 3D Printing
- Machinery
- Transport

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- Process Engineering
- Control & Automation
- Information Technology
- Inspection Equipment
- Project Management
- Energy & Power
- Materials Handling
- Packaging Equipment & Materials
- Supply Chain Solutions
- Warehouse Management
- Lean Systems
- Quality Systems & Standards
- Facilities Management
- Robotics

www.manufacturingevent.com
AUTOMOTIVE SURFACE FINISHING

- Surface finishing techniques
- Chemical symbols and chemical equations
- How coatings can prevent corrosion
- Calculating thickness, area & volumes
- Adhesion
- Introduction to paints, basecoats, clear coats & powder coating
- Aspects of formulations of organic coatings
- The nature of automotive finishes
- Substrates and their cleaning
- Pretreatment with chemical conversion coatings
- Working with paints, basecoats, clear coats & powder coating

ELECTROPLATING PRACTISE

- Why surface finishing
- Introduction to electroplating
- Properties of electrodeposited metals
- Care & maintenance of solutions & product quality
- Introduction to corrosion
- Anodising
- Services
- Health, safety & environmental issues

ELECTROFORMING

- Surface finishing techniques
- Electrode reactions in electroforming
- Selection and use of mandrels for electroforming
- Electroforming electrolytes
- Control of the physical and mechanical properties of electroforms
- Plant & equipment for electroforming
- Case studies in electroforming
- Health, safety & environmental issues

MATERIALS SCIENCE

- Properties of materials
- Manufacture of materials
- Mechanical properties and their evaluation
- Corrosion & protection
- Architecture of solids
- Examination of materials
- Phase composition

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- Introduction to electroplating
- Properties of electrodeposited metals
- Care & maintenance of solutions & product quality
- Introduction to corrosion
- Anodising
- Services
- Health, safety & environmental issues

POWDER COATING

- Why surface finishing
- Introduction to corrosion
- Basic science for coatings
- Introduction to powder coating
- Cleaning & pretreatment
- Application methods
- Plant & equipment
- Services
- Controlling the product and the process
- Health, safety & environmental issues

PAINTS, LACQUERS & VARNISHES

- Why surface finishing
- Basic science for coatings
- Introduction to paints, lacquers & varnishes
- Preparation for painting
- Application of paints, lacquers & varnishes
- Plant & equipment
- Services
- Controlling the product and the process
- Health, safety & environmental issues

ENVIRONMENTAL, HEALTH & SAFETY

- Why surface finishing
- Waste
- Treatment & disposal of waste
- Legal and other aspects
- Protection from health, safety & environmental hazards
- Managing health, safety & environmental impacts
- Surface finishing & the environment

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