

Welcome to the Institute's first edition of IMFormation since the introduction of a whole panoply of lockdowns / self isolations / home working.

We have had to discover much dormant Desk Top Publishing skills to produce this copy as our normal printer is closed. Please also learn some new skills yourself in tolerating the odd typo and blurry graphics!

BUT

Your Institute is more active than ever to provide all the services you expect and some more new ideas.

See the new approach to enrolling for our courses as some flexibility is currently needed.....sign up while you have time on your hands!

Also see new webinars booked for April and May plus an invitation to join the Southern Branch in a Zoom session on aluminium anodising.



IMFORMATION APRIL 2020





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NEXT ENROLEMENT DATE FOR TRAINING COURSES IS:-

5TH JUNE 2020

Contact Karen Yates 01216227387 karen@materialsfinishing.org



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Revised dates: 24th & 25th February 2021, NEC, Birminaham

CLICK HERE TO REGISTER FOR FREE ENTRY TODAY

IMF DIARY

5th JUNE 2020

Distance Learning Enrolment

Surface World

UPCOMING WEBINARS

21st April 2020

Care and Maintenance of Electroplating Baths

19th May 2020

Anodising of Aluminium and its Alloys

For Salt Spray Corrosion Testing & Chemical Analysis by UKAS and Nadcap Accredited Laboratory





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SECRETARY GENERAL'S COLUMN APRIL 2020

In these uncertain and dangerous times, the way the world is now working has changed dramatically, and it is un-nerving to view the once active towns and cities throughout the globe being empty! The effect this will have on the global economy will take a long time to put right for us all to return to how we were just a few months ago but be put right it will!

As I write this is early April, we are already seeing on our television screens, the start of a recovery in China, where the virus first developed about 6 months ago. I am aware, through my employer, that Chinese businesses are up and running again, with orders for coatings being place for immediate delivery, and I've again started to see the usual unsolicited sales e-mails starting up again!

So, as IMF members, we have several thoughts to occupy our minds during these long periods of isolation.

Firstly, we must stay safe and well, and follow the Government restrictions and guidelines on our new way of life. I have to say it has pleased me immensely to see how communities have acted to support and look after each other, and how the majority of "us Brits" are playing by the rules.

We must help and support the heroes of the NHS in whatever ways we can, even if this is only to clap them, and other workers in key support areas, every Thursday evening. I cannot imagine the trauma our Doctors and Nurses go through every day they are working.

As paint people we do have a role to play. I am aware that companies that you, our members, work for, have key roles to play in producing coatings that support many of our key industries. From specialist coatings for power generation equipment to aircraft; from coatings for medical equipment to, more soberly, paints for mortuary equipment the coatings produced by the UK paint industry are necessary products to help the country through these difficult times.

The IMF and its members needs to consider their role in keeping the country safe. Several events we were to be involved in, including Surface World and MACH, both due to be held at the NEC have been postponed until next year.

Following the Government announcement on the 23rd March, all IMF meetings and events have been cancelled until further notice, unless they can be held online.

Like a lot of other organisations, Institutes and companies we had to find other ways to communicate. For several years I have been using electronic communication methods like Facetime and What's App, for simple individual meetings, usually to "check in" with my wife while travelling in the Far East! I, along with the rest of the Board were introduced to "Zoom" (before 20th March I hadn't heard of it!), and, through the excellent offices of John Burgess, now have full access to this excellent communications tool, and have the ability to organise electronic meetings for up to 100 attendees. We have now used this for a full Board meeting, and several committee meetings, and in my opinion, it's almost better than meeting face to face!

I am sure that we in the IMF, along with our friends in our industry, fellow Institutes and Associations, will come through this crisis. I am sure, however, that in some ways it will have changed us, and the ways we will work in the future. I feel really sorry for all those who have lost loved ones due to this vicious virus and offer my deepest sympathy.

However, if we continue to "follow the rules" from the Government and their scientists I am sure we will soon see an end to this strange and abnormal situation.

Graham Armstrong





Time on your hands?

The IMF would like to invite you to study for one of our qualifications.

You may enrol <u>any time</u> between now and up to 5th June and pay just £150 deposit, with the balance due by 30th September 2020.

Email: karen@materialsfinishing.org for further details.

Congratulations to all our students who passed their exams recently!

A total of 24 people achieved the **Foundation Certificate**, 10 with **Merit** and 6 with **Distinction**.

At technician Level we had 5 module passes, 2 with **Merit** and 3 with **Distinc-tion**.

In addition 3 people were awarded the **Technician Certificate** on achieving

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their second module, 2 with Merit and 1 with Distinction.

Our next enrolment is <u>5th June 2020</u>, if you are interested please contact me by email

karen@materialsfinishing.org you can also see details about the distance learning courses we offer on our website http://www.materialsfinishing.org/education.htm



Come and join us for our first seminar to be held in the virtual world.

As you may or may not know, the Southern Branch of the IMF hold 2 seminars every year and in order to attempt to maintain this tradition, we have decided to hold a "Virtual" Seminar on Tuesday May 19th starting at 19-30.

As this is our first offering in the "Virtual World", we will have 2 speakers who will present talks on anodising Aluminium.

The first speaker will be John Burgess (FIMF) who will present the basics of how anodising actually works, equipment used, pre-treatment, anodising solutions, colouring & sealing. This paper will be the same as presented earlier in the day as a webinar to all IMF students taking the Foundation Course.

Our second speaker will be Phil Alexander who, with his vast experience & knowledge in all aspects of electro-finishing, will talk about some of the pitfalls that can occur during the process.

Unfortunately, in the "virtual world" the IMF will be unable to provide refreshments so I am afraid that this will have to be left to yourselves, but on the flip side of the coin there will be no charge for this event.

The meeting will be held through the "ZOOM" application and those who wish to come & join us please contact John Burgess at <u>JohnB IMF@btinternet.com</u> who will then send you an invite to join the meeting 30 minutes before the start, so please keep an eye on your "inbox".

I hope that you will be able to join us on this unique adventure and we look forward to seeing you there.



Following on from my previous article, density that the solution is running at. (IMFormation Feb 2020) I said that I would share with you about an experience I had with As the company did not have a laboratory problematic nickel bath.

(as it was known), and I was sent to a custom- mometer I set about assessing the concener who was experiencing issues with rough- tration of the Watts nickel bath. ness on settling surfaces.

The customer was nickel/chromium plating brassware for bathroom fittings and on all the settling surface there was roughness as bad as sandpaper.

Now one of the problems with plating brass sand castings, especially where there were The bath volume was around 1000 litres so, hollowed sections as in bath and wash basin taking the hydrometer and lowering it into taps is that the current density is so low up in the solution I carefully let it go only to see it the tubular part of the tap that plating does disappear at a vast speed into the bottom not take place but because of the acidity of of the tank. the solution there is a chemical attack on the inner surface of the brass. This attack will cause the sand from the casting to leach out into the plating solution and subsequently contaminate the solution with sand. As plating continues the sand in the plating solution will settle upon horizontal surfaces leading to roughness.

Other factors have to be taken into consideration when looking at roughness and that it to ensure that the make up of the plating solution is correct. Weak solutions can cause roughness through the fact that there is insufficient metal content to support the current

as such and technical representatives were only equipped with a set of 3 off Twadell At the time I was working for M & T Chemicals Hydrometers, a set of pH papers and a ther-

> Now some of you may not have heard of a Twadell hydrometer but it was a scale that 1 Tw^o was equivalent to about 1 oz per gallon therefore a nickel plating solution should be about 48 ozs/gal (300 g/l) and require a No. 2 Twadell hydrometer.

Hmm, I thought, that wasn't a clever move, so carefully I lowered the No 1 Twadell hydrometer in which gave me a result of about 22 Tw° which was about 22 ozs/gal (140 g/l).

Obviously the bath was weak in fact about half strength, so chemicals had to be added. I decided that 3 bags of nickel sulphate, 1 bag nickel chloride and 0.5 bag of boric acid should be added. At least this would bring the solution up to somewhere full strength, enough to get it going and follow up later with a full analysis

.Now back in the good old days Nickel Sulphate and Nickel Chloride were supplied in 50Kg hessian bags which were lined on the inside with polythene and labelled "INCO MOND Nickel Sulphate or Chloride 50Kgs. INCO supplied nearly all the nickel-based products.

Boric acid, like now, was put into paper bags so the operator at time said to leave it to him and I could follow it up the following day.

The following day arrived, and I rushed to the nickel tank in the hope that I might see my No 2 Twadell bobbing up and down in the solution but alas it was not to be, so I ruled that out as a lost cause.

It was decided to put a job round to see if there was an improvement and after about 2 hours it came off the line in a worse state than when I arrived the previous day. The roughness had now developed into elongated whiskers and completely useless with a technician that was lost for words.

We decided to drain the tank and see what might be in the tank. I was guessing that the original roughness was due to the sand from the castings which was not being filtered out but, as the solution slowly emptied out of the tank the words "INCO MOND Nickel Sulphate and Nickel Chloride came into view together with a paper sack with the words Boric acid. Now I understood where the problem lay. It is always useful when wanting to increase the strength of a plating solution to open the bag and pour the contents in but because the operation was being carried out close to going home time (and it was a lovely day) it was decided to drop the bags in and hope that somehow the contents would find their way into the solution. Unfortunately, the inner polythene lining is not soluble, but the hessian bag certainly did decide to break up and cause untold problems.

Obviously this was a one off experience in my career but it goes to show that when trouble shooting a problem you do sometimes have to think outside the box.

The problem got resolved by passing the solution through very fine filtration and the Twadell Hydrometer....it was lying behind one of the anodes still intact considering the ordeal it had been through.

John Burgess FIMF



INDESTRUCTIBLE PAINT Ltd

Indestructible Paint Ltd., which has a global reputation for the development and manufacture of protective paints and coatings, has now highlighted its innovative work in developing a totally chrome free Ipcote product for aerospace and gas turbines at one of the industry's leading events. The company was asked to



present a key-note address at the Materials Research Exchange (MRE) 2020 in London, jointly organised by Innovate UK and the Knowledge Transfer Network which showcases ground breaking new materials and their manufacturing processes.

"We were delighted to have been given the highly prestigious opportunity for our Laboratory and Technical Manager, Richard Banks, to highlight key areas that we are developing in this continually changing field," says Brian Norton, Indestructible Paint's Managing Director. "The focus of the event was to draw attention to the route from production innovation to commercial opportunity which closely reflects our own philosophies and capabilities in some of the most challenging sectors such as aerospace."

The event was well attended by representatives from the research and manufacturing sector, end users and associated bodies with some 800 delegates joining the two day programme at The Design Centre.

Richard Banks' address – 'Commercialising Breakthrough Materials – an Industry Case Study – drew attention to Indestructible Paint's belief in combining new and existing technologies to achieve specialist coatings advances which are designed to meet high performance demand.

"We have long held the belief that ongoing research and development is central to our own success and that of our customers both in the UK and worldwide," comments Richard Banks. "This is often inspired by customer feedback and produces specific solutions that become available across industry. The opportunity to highlight this capability, at such a highly regarded event, was greatly appreciated and, I believe, we were able to convey a number of key factors, and open up further innovative thinking for the assembled guests."



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