

information

Southern Branch - Meeting 4th October 2017

The Southern Branch of the IMF held a mini symposium entitled "Sparks will Fly" on Wednesday 4th October at Lloyds Register Global Technology Centre based in Southampton.

The meeting was in conjunction with The Welding Institute and was a first in terms of a joint venture.

THE SUBJECTS CHOSEN FOR THE EVENING WERE:

- A History of Diving Helmets
- The chemical cleaning of weld scale prior to Surface Finishing
- Determining the Thickness of TSA Coatings on Stainless Steel
- The importance of Surface Inspection for crack detection in welded materials

The first speaker was John Bevan, chairman of the Historical Diving Society



The museum based at Gosport in Hampshire is claimed to be best diving museum in the world together with the best collection of diving equipment ranging from recreational to commercial/professional to military.

The talk was aimed at the development of

the diving helmet which began in 1823 and was originally targeted at being a smoke helmet. Charles Dean from Deptford was a caulker in the shipbuilding yard and he was concerned about entering rooms and ships which were full of smoke to risk rescuing people and property and he invented a smoke helmet. The patent was for a copper helmet attached to a leather dress fed with air from a wooden bellows with the exhaust being fed from a pipe which ran down his leg in the hope that it would keep the smoke out of the dress. The process did not really work and the fire brigades were not interested and they did not think it would carry on,

His brother John Dean thought that it might be more beneficial being used under water as the only method originally was the use of a diving bell.

One of the original experimental helmets was on show and it was likened to wearing a bucket upside down on the head. Air was pumped in keeping the head free of water but a problem was that if the diver leaned over, water would rush in from the back of the helmet and risk possible drowning.

The dress material was substituted by a waterproof

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IMF Events

1st & 2nd November 2017
Advanced Engineering NEC

28th November 2017
AGM

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Helen@materialsfinishing.org
for more details.

9th Feb 2018
Education Enrolment Date

19th - 20th September 2018
Surface World NEC



Southern Branch Events

3rd November
AGM & Skittles Evening
The Northbrook Arms,
East Stratton, Hampshire.

Keep in Touch

Please make sure we have your contact details up to date. Any changes please contact David on 0121 622 7387 or email: david@materialsfinishing.org

material invented by a Mr Macintosh and this gave a degree of dryness to the diver but did not stop the water from still rushing in if the diver bent over.

They experimented with many different alternatives allowing the air to leak out through special rivets but these also led to problems with the diver not being able to see due to the stream of bubbles.

John went on to talk about how the glass was sealed against the helmet to prevent water ingress and also how the glass was protected from damage with copper bars being placed in front.

The supply of air was always constant with pipes supplying the input and exhaust from the helmet, the exhaust being led down through the leg.

There were further refinements and variations on the helmet and by 1839 the two brothers were successfully using a working helmet and other people were expressing an interest and the helmet was now being sold.

There was still the issue of air leaking if the diver bent over and this was still a big drawback with the "open diving helmet".

Further refinement by a man called George Edwards led to a sealing of the "dress" to the helmet. This was known as the "closed dress" and it left the diver completely dry and sealed off from the water allowing him to bend over and move more freely.

From 1840 this helmet became the principle system for diving helmets and remained the same until 1985 in this country.

In 1985 the Health & Safety executive outlawed the use of this type of diving equipment as unsafe even though it had worked well for the last 150 years with a high safety record; the reason being was that it did not have a secondary emergency air supply. This was corrected by the use of

the diver carrying an emergency small tank of air in case the main supply failed.

Modern day helmets (Kirby Morgan) are now made using fibre glass materials as compared to copper and are capable of being used in "deep diving" (>50m in depth) compared with "shallow diving" (<50m in depth).

Deep Diving requires a gas supply of oxygen/helium compared to air for shallow diving, the reason being that air is narcotic at depths greater than 50m.

The one disadvantage of the modern helmet is that because of the design, the helmet sits on the head with a neck seal to prevent water ingress. The older style had a collar allowing the helmet to sit on the shoulders and therefore distributes the weight better.

Often modern day divers have to give up diving after a time because of the weight (which can be around 20+Kgs) causing a strain to the neck muscles.

Contrary to this it does allow the helmet to turn with the head allowing for full vision whereas the older style remains stationary and the head swivels inside the helmet allowing the need for more than one window.

Our second speaker was John Burgess



who gave a talk on how to pretreat ferrous materials that had been welded.

Welded materials can leave detrimental fluxes thermal gradients after manufacture and it the removal of these that is necessary to ensure good adhesion for either electroplating or painting.

The theory behind how the heat gradient and the formation of flux residues was shown.

John outlined the different stages of cleaning cycles that are required. The use of alkali materials and surfactants in cleaning metals was demonstrated followed by the importance of acid cleaning to remove any weld scale that could be present.

One area that particular attention was paid to was to the treatment of high tensile materials. These can be very susceptible to ingress of hydrogen which can result in hydrogen embrittlement leading to cracking of the material. This was also demonstrated using schematic drawings.

Of course most of the talk was how to treat small to medium sized parts but the treatment of very large areas (eg ships, aircraft) required a different technique and this was touched upon at the end of the discussion.

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Our third speaker was Peter Ho, General Manager from Fischer Instrumentation



who spoke about the measuring of thermal sprayed aluminium (TSA) on stainless steel using non-destructive instrumentation. Peter described how thermal spraying was carried out using a wire or powder material together with a gas to spray it onto a substrate to form a coating primarily for corrosion protection.

He described the different types of spraying and equipment used. Prior to this process, painting was used but the discovery of TSA has led to a better protection coating especially where the application is used in the North Sea.

Peter gave an example of the wind turbines which were failing in the supports due to corrosion of the painted metal under the water leading to water ingress and corrosion. Sending people out to maintain this was very costly so by using TSA at thicknesses of around 200 microns would give protection of up to 30 years.

He then went on to describe the different types of measuring devices from simple magnetic induction on carbon steels (up to 100mms depending upon the probe) to a phase sensitive eddy on stainless steels since most stainless steel is non-magnetic.

Typical thickness using these instruments is up to around 700 microns.

Peter described the importance of the substrate and the effects it can have on the probe to its sensitivity. The conductivity and porosity of the coating also have a major effect. He described the preparation of calibration standards using similar spraying equipment to that used on the actual job. who is a specialist NDT (Non destructive testing) at Lloyds Register.

Our final speaker was Phil Lever



Phil has worked mainly in the ship industry and his main role is to advise & train surveyors in the field on NDT appreciation and how it is applied.

He described the difference between penetrant and magnetic particle inspection. (MPI)

MPI will only work on magnetic type material and works by inducing a magnetic field into the material and anywhere there is a surface indication it creates a leakage field. By the application of a coloured iron filing type material, the iron filings are attracted to the leakage field and show up the defect. The process is quick, cheap and inexpensive to examine welds, castings and all manner of things that are ferrous. Equipment used was explained and he emphasised that it was mainly for surface defects.

The method by which examination is carried out was explained and this starts with visual inspection using a high powered lamp followed (if required) by equipment testing.

When MPI is used then it is important that any paint is removed as anything



>50 microns will have an effect upon the sensitivity and may lead to false readings.

Penetrant is more flexible. It can be used on any material that is not porous and widely used on non-ferrous materials. One important part in its use is that the surface must be clean, no presence of paint, as the requirement is for the penetrant to go into the crack and highlight the defect.

Typically red in colour and any defect will suck the penetrant in by capillary action. It is usually allowed to stay on around 20 minutes when the excess is wiped off with a solvent. A developer is then applied which draws out the penetrant out of the crack and spreads it over the surface. The developer is white in colour and highlights the red colour. The size of the indication is measured and reported. Cleanliness is all important.

Eddy current testing is used but is a slow technique although it can be used with coatings of paint up to 2mms thick. The process is very flexible and the probes can be made to any shape. They can be used in threaded holes, gear wheels, slots in the wheels of a plane as examples so it is a very adaptable process.

Phil presented videos describing how various eddy current processes are used and these described the process very well

At the end of each presentation, questions were taken by the speakers, which led to a good constructive discussion amongst the audience.

The committee of the Southern Branch felt that the evening was very successful and would like to thank John Bevan, John Burgess, Peter Ho and Phil Lever for their time in giving the presentations and to Lloyd Register for hosting the evening.

If you would like any further information regarding the IMF please contact Helen at helen@materialsfinishing.org

Plating Line Advice

Peace of Mind through Confidence

A new technical advice service is being offered to assist businesses considering investment in new surface treatment equipment or indeed upgrading or resolving engineering problems with existing facilities.

The person behind the concept is Will Green who has spent over 40 years on the engineering supply side of the industry realising capital projects for all industries worldwide.

The delivery of a successful project that meets all the client's expectations on cost, timing and performance requires a multi-disciplined approach. The specialised nature of surface treatment equipment along with the necessary supporting ancillary items such as water treatment and fume extraction systems means there has previously been a lack of independent specialist technical advice available. This can result in excessive reliance on potential suppliers to fulfil their obligations, which often works but can also put the client at a disadvantage.

The new service offered by Will is to provide impartial technical advice and support throughout the whole project process from concept to completion, including review of technical submissions, quality inspections, performance testing and verification. The most important aspect as far as the purchaser is concerned is having peace of mind and confidence that their purchasing decision will prove to be well founded.

The expertise, knowledge and technical advice offered by Will Green is intended to save the client valuable time and assets and ease successful project realisation.

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Secretary General's Column, October 2017

As per usual I am up against the publishing deadline to get some thoughts and information on paper, with Helen chasing me whilst I'm supposed to be relaxing in Cyprus!

The holiday is much needed as I seem to have been totally involved with both work and Institute matters for the last 3 months!

September was a very busy month for us all at the IMF! Those of you who haven't visited Exeter House recently won't be aware that we have had to replace the old creaking heating system which dates back to the opening of the building. We now have a much more modern system with an up to date boiler that is far more efficient and therefore cost effective! It also means Helen and David can work in a more pleasant environment.

My activities for the Institute over the last 6-8 weeks have centred around developing a higher profile for our industry and looking into better and more up to date overall industry training.

I mentioned last time that in conjunction with other institutes and trade bodies concerned with materials finishing, we are looking to form a Leadership Forum, with a view to promoting the benefits and necessities of surface engineering to government and industry in general. An initial meeting was held at Exeter House in August, and a follow up meeting has been arranged in November. This will include senior executives and representatives from the main industry bodies, including IOM3; The British Coatings Federation (BCF); the Welding Institute (TWI); the Vitreous Enamellers Association; the SEA and ourselves.

Our next meeting is to formulate an ongoing strategy to promote materials finishing and surface engineering to all interested bodies to sustain growth and activity in our industry.

Following on from the meeting in June at Cranfield University, a first meeting of a "Trailblazer Group" has been held. The focus of such a group is to work to produce a "specification" for technicians and senior players in defined industry sectors, and to put together a universal apprentice scheme that covers the needs of all sectors of the concerned industry sector. Such a group needs to

be formed from at least ten companies involved in the relevant industry, with a preference for SME involvement. Institutes and trade bodies can contribute to the group but are not involved in the actual management.

Two co-chairs have been appointed; Andy Williams, the group technical director of Chromalloy, and a Gary Ridgeway, the training manager at Poeton. Gary is well known to the IMF, sitting on our E&TC committee and tutoring our training courses at Poeton. I am sure both he and Andy will be great co-chairs and drive the Trailblazer Group forward to the benefit of our industry and our members!

On a sadder note, I have to advise you all of the loss of two stalwarts of the Institute. Our long serving treasurer, Alan Koch passed away early September, and your President, Barry Gay and I attended his funeral at the Chilterns Crematorium. Additionally we heard that Ken Hoare, for many years the Business Development Manager of the Institute, lost his long battle with cancer and passed away in August. Tributes to both these good friends will follow.

I look forward to meeting you all at the Annual General Meeting, which takes place on Tuesday 28th November at the Cobden Hotel on the Hagley Road in Birmingham. If you haven't already done so, please let Helen know you are coming, and most importantly, your choice for lunch!



Graham Armstrong
October 2017

Obituary- Alan John Koch



It is with great regret we heard that dear Alan had passed away on the 12th September.

He was an active and thorough Treasurer for the IMF until his retirement last year and was highly valued as the Board Member who kept us all on the straight and narrow. To reflect on his contribution he was awarded the IMF's Gold Medal at the AGM last year.

Many members of the Management Board will remember his oft used phrase, "you can't do that!" Without his withering stare, quick wit and robust humour Board meetings would have been quite boring events.

Both Graham and I attended the Humanist celebration at the Amersham Crematorium together with his wife Sue, family, friends and neighbours; the Humanist Celebrant, Ray Owen, gave a well-researched eulogy.

Alan was born in August 1943 in Greenford, Middlesex, where he grew up in a family of two children with his elder sister Margaret.

It was when he was a boy that Alan first got into what would become the great hobby of his life, fishing.

Having been introduced to the activity by his Grandfather, Alan immediately took to the sport, and came to simply love being on a river bank.

Alan was a member of The Gerrards Cross and Uxbridge Angling Society.

Alan attended Southall Tech Senior School and on leaving there went to Brunel, then a College of Technology, where he took a degree equivalent in Chemistry; a qualification that would lead him into his long career as an industrial chemist.

As a young man, Alan was an accomplished ice skater, and he would spend a few nights a week at the well-known Richmond ice rink, where, as a steward, he was both paid, and got lots of free skating time.

Alan had begun his career as an industrial chemist at the Pyrene Company, and through many takeovers and name changes, he would stay at the same company for 47 years, officially retiring from Chemetall, as Technical Director, at the age of 63.

There then followed a period of semi-retirement, as Alan continued to be involved with the Institute of Materials Finishing.

Alan's work had taken him away from home a lot on trips abroad. At one time he was Head of the Aerospace Division and his duties took him to the USA, all over Europe and also to South Africa, Australia and The Far East, trips which left very little time for sight-seeing, though Alan did do some in Thailand and on a South Africa trip managed to fit in a short safari.

Alan and his wife Sue had a passion for motor sports; they had a very "sporty" Mini in which they competed for many years, road rallying, and Alan was at one time Chairman of the Hampton and District Motor Club.

Alan liked to be eco-friendly if possible, and was fond of the natural world. At the family home he had a pair of binoculars and a bird book placed strategically by the window looking out into the garden.

Since he died on 12th September, Alan is now mourned by all who knew and loved him.

Barry Gay
10th October 2017

Questionnaire for members on their views on membership of the IMF.

Help us develop our Institute for the 21st Century. This is your chance to have your say on the running of your Institute. We do need your views.

1 How were you first aware of the IMF?

2 Please give your reason for joining.

3 For how long have you been a member?

4 Do you ever attend seminars/branch meetings?

5 Which of these IMF functions are important to you? We would like your opinions as to how they affect you as an individual, not on their importance to the Industry.

- | | |
|--|---|
| ☐ Education | ☐ IMF representation on other committees |
| ☐ Qualifications | ☐ Support for the Finishing Industry |
| ☐ Publications | ☐ Representing and raising the profile of the Industry |
| ☐ Enhancing personal CV | ☐ Other |

6 Which areas do you feel could most do with alteration/improvement? Using a 1 (low value) to 5 (high value) please rate your personal valuation of:

Transactions	1	2	3	4	5
Information	1	2	3	4	5
Website	1	2	3	4	5
Overall value for subscription	1	2	3	4	5

Please suggest ways in which you think your Institute could be improved.

Return to Helen at helen@materialsfinishing.org

Cyanide Free Silver



Article by Phil Alexander

It all seems a long time ago now, but back then, bringing up a small family and paying a mortgage on an industrial salary wasn't easy; it still isn't. I needed a

second income for the extras but my only marketable skills involved electroplating.

After doing market research amongst the local antique and bric-a-brac trades I decided on re-silvering from home. I could strip old silver and I could re-polish items in my garage but the normal cyanide silver solution wasn't an option on domestic premises.

Some years previous I had anticipated this venture and had investigated cyanide free alternatives which came down to a choice of three different solutions.

a) The Succinimide process.

This process with added brightener, gives an attractive fine grained fully bright deposit which I believe is in use in the electronics industries today. Despite its attractions I dismissed this solution largely on the grounds of sourcing the materials.

b) The Iodide process.

This is an ancient formulation, which seems to be rediscovered by every generation. At school, children were taught that silver iodide was insoluble in water but it does however dissolve readily in concentrated potassium or sodium iodide making it an almost idiot proof and trouble free solution.

It has a lot of merits:-

- i) It needs no strike bath to give fully adherent deposits,
- ii) The deposit is soft and ductile and does not crack,
- iii) Effluent control is easy as one simply rinses the plated item in a static drag out tank. The iodide is diluted making the silver iodide revert to being insoluble and, as a salt of two heavy elements goes straight to the bottom of the tank where it could be recovered and re-used.

It is not without problems:-

- i) Despite numerous recipes suggesting brighteners, none appear to work. The deposit looks like white-wash though very easily buffed to a shine;
- ii) More importantly is the cost of the iodide, which is expensive and might cost more than the silver itself.

c) The Thiosulphate process.

This is the process that I decided to use which is essentially spent photographic fixer but deliberately made.

The usual source of silver is as the nitrate but this is an oxidising agent.

Sodium thiosulphate dissolved in water acts as a reducing agent and when added to the silver nitrate solution, even with fast mixing, results in some reduction of the silver salt. The addition of bicarbonate to the silver nitrate solution, produces pale yellow silver carbonate, which when fresh will redissolve in thiosulphate to give a clear solution.

This solution was being marketed commercially at the time together with a brightener but required a low cyanide silver strike to make it work which somewhat negated the point.

I spent hours of lab work, trying to find an alternative. All the strike baths using different complexing agents failed and gave poor adhesion but via some pure serendipity, I tried a solution and lo and behold, the deposit adhered. The strike deposit was an immersion type requiring no electricity and disproved the belief that all immersion deposits are non-adherent.

It worked best on copper, which gave the most trouble for other strike options, it was adequate on brass and slightly suspect on nickel silver. To overcome this I flash plated everything in acid copper.

The difference with this strike was that it was acidic and all the failures due to adhesion were alkaline.

Using this solution I spent every evening polishing and plating claret jugs, epergnes, cake dishes, gallery trays and endless cutlery.

It was a useful addition to my salary but not the basis of a full time business and when I finally set up a business on my own it was as an industrial plater but that's another story.

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Nickel Institute - Participation of relevant Downstream users in OEL impact assessment

The Nickel Institute (NI) has launched a project to prepare industry to contribute meaningfully to an upcoming Impact Assessment that will be conducted by the European Commission. This is in the context of the forthcoming setting of binding Occupational Exposure Limits (OELs) for nickel compounds in the EU. The NI, therefore, encourages relevant Consortia member companies to participate.

Background

EU authorities launched the process of deriving binding OELs for nickel compounds. Therefore, the Risk Assessment Committee (RAC) of the European Chemicals Agency (ECHA) was mandated to scientifically derive a recommendation for OELs for nickel and nickel compounds. This work shall be concluded by the end of March 2018. While RAC recommendation must cover both nickel metal and nickel compounds, the only process that will certainly be launched in 2018 is the setting of a binding OEL for nickel compounds. This is because the European Commission committed to include nickel compounds in the 4th wave of substances in the Carcinogens and Mutagens Directive (CMD), which is currently under review. The setting of an indicative OEL for nickel metal may also be expected in the coming years (this process may start in 2018, although the process of setting indicative OELs does not include an Impact Assessment).

Impact Assessment

Preparing nickel compounds producers and the value chains will therefore be of key importance to ensure that appropriate input to the Authorities is delivered in time. Several consultants have been approached and, after serious consideration, EBRC Consulting GmbH has been chosen to conduct this project. A cost impact model

will be created, which aims to facilitate stakeholders to provide information on costs triggered by different OEL values that are under regulatory consideration. For establishing the model, EBRC will need to gather information about costs and effectiveness of relevant Risk Management Measures.

Industry Involvement

We strongly recommend that all relevant companies, especially those located in the EU, participate in this project, as this will be important to steer the future OEL not only in the EU but possibly also outside of the EU. Therefore try to convince your members and ask if they wish to contribute to the early phase of the project, where the model will be established. A questionnaire will be sent to your designated contact person by 10th October for completion by 14th November.

More information:

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Science, Innovation and Brexit

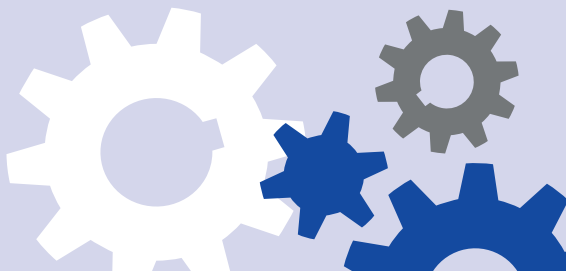
In October 2017, almost 100 people attended a meeting of the Parliamentary and Science Committee discussed “Science, Innovation and Brexit”. The crux of the meeting was to identify how the UK Government will ensure that science and innovation within the UK will not be adversely affected by our withdrawal from the EU in March 2019. Overall, the meeting was positive, albeit aspirational, but there remained a high degree of scepticism about our ability to deliver a resolution that will meet any exit agreement, yet ensure the UK remains at the forefront of innovation and its commercialisation.

The first speaker, Stephen Metcalfe, MP for South Basildon, commented that the ramifications of Brexit will probably not be fully known for many decades, but the future of the UK depends on its ability to innovate and commercialise its research. If Brexit goes well, it could be very beneficial to science and innovation in the UK, but if it goes wrong, it will be catastrophic. He also stated that there is a cross party agreement for innovation investment in the UK to rise from the current 1.7% of GDP to, in principle, 3%; it is currently due to increase to 2.4% by 2027. As with all other speakers, Dr Sarah Main of the Campaign for Science and Engineering supported this aspiration but questioned how the 2.4% level will be achieved and whether the private sector can meet the 0.7% increased investment. The ambitious increase to 3% of GDP will add a further £20bn to the public sector and £10bn to the private sectors investment in innovation. She also commented on the importance of the investment being spent wisely and focussed on exploitation and commercialisation.

Sir Venki Ramakrishnan, President of the Royal Society and Nobel Laureate,

supported the Government’s paper on science, but stressed it was an aspiration and needed delivery. About 50% of the UK’s innovation output is based on international collaboration and this reliance is increasing and that collaboration is a two way street. The UK is currently the second most popular country with which to be in collaborative research, behind the USA, but Brexit has left the UK in a very unhelpful position with regard to EU funded collaborative research calls such as H2020 and FP9, as our plans lack clarity. He suggested that to secure future collaborative work, the UK should commit to contributing to future H2020 and other programs.

Tom Thackrary, Director of Innovation at the CBI, strongly supported the campaign to raise innovation investment to 3% of GDP, as innovation is the answer to growth in the UK’s economy. As with all speakers, he supported the Government’s paper on Science and Innovation and supported maintaining links with the EU, as collaborating with innovations is only second in importance to the UK economy to exporting. This collaboration is especially important to SME’s, but there will be a need to share both current and future legislations as the UK needs to be aligned with the EU countries if it wishes to continue trading with them.



Science, Innovation and Brexit cont...

Professor Julia Buckingham of Universities UK stressed the need for measureable commitments and a reduction in uncertainty through increased funding stability; this could be demonstrated by a continued support of H2020 and FP9, as well as positive encouragement for non-UK resident staff to remain in the UK. The current uncertainty about post Brexit funding is jeopardising research funding, as it can easily take 18 months for a grant application to be realised and this will now be post-Brexit. The UK currently tops the chart for EU funding for early career research funding and collaboration is essential for progress with H2020 and future programs, so funding has to be underwritten after exit. She recommended that the UK Government must seek continued participation in H2020 and that it should be underwritten by the UK Government; the UK must also continue to engage with other EU partners in the FP9 program. Post-Brexit, the UK needs to have, as a minimum, associated country status or its equivalent to ensure funding; if it does not, the UK Government must be prepared to match the funds above the 3% of GDP target figure. She also commented that many current PG courses in UK Universities are only viable because of the income from foreign students and since the Brexit vote, there has been a decline in foreign student applications. This puts the future of UK University research under threat as it will reduce both the number of suitable applicants and any derived income.

Trevor Crichton of the IMF commented that whilst the UK is a global leader in surface engineering, the UK's industry is heavily reliant on the global and EU markets so maintaining easy access to both is of paramount importance to its development and survival.



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News from the Southern Branch

Wednesday 4th Oct 2017 saw our seminar "Sparks Will Fly" being held at Lloyds Register, Southampton. (See full article in this issue)

The seminar was a joint venture with The Welding Institute and about 20 people attended the seminar. I must thank the caterers at Lloyds Register for laying on an excellent buffet and allowing us to use their excellent facilities.

Friday 3rd November 2017 will see our AGM & Skittles evening being held at The Northbrook Arms, East Stratton, Hampshire.

Again this is a very good evening and is well worth attending.

The seating is limited to 35 people so early registration is recommended.

Please contact
Helen@materialsfinishing.org
or clivearnold@lr.org

Moving into 2018 we look as though we are already sorted with regards to the seminars which, as it stands, will be on "All matters Water" and our first venture into the world of Circuit Boards and microchips.

If any member would be interested in any particular aspect of these subjects OR would even like to present a paper then please contact me at JohnB_IMF@btinternet.com

If anyone is on Facebook, then please visit the IMF Facebook page and "like" us.

Also if you have any comments that you may feel beneficial to the page please comment.

The Facebook page has not had too many entries and it is one the IMF's targets that we get more of a social media following.

John Burgess
(Publicity Officer Southern Branch)



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