



Representing finishing professionals in  
surface engineering and coatings  
since 1925



## October IMFformation 2005

The Institute of Materials Finishing  
1925 – 2005

**Celebrate 80 years of the Institute of Materials Finishing by  
attending the Christmas Lectures & Luncheon followed  
by the Annual General Meeting**

on

**Wednesday 7 December 2005 at the  
Birmingham Medical Institute  
Edgbaston, Birmingham**

**Aspects surrounding the development of Electrochemical Primary Cells and their use in 19th Century Pipe-organs by J.D.C Hemsley MA, PhD, FIMF**

During the 19th Century, pipe-organs became much larger and considerable manual energy was needed to operate the mechanism transferring the player's key board movements to the valve controlling the air to the pipes.

From 1850 onwards, a few enterprising organ-builders saw the use of powerful magnets operated by primary electrochemical cells as an answer to the challenge of hard to play mechanical organ actions. An electric action also enabled the builder to place the player's console at any distance and location in relation to the organ.

The development of powerful batteries by Bunsen and Poggendorf made electric organ actions feasible, albeit with problems of longevity, hazardous chemicals and maintenance (the Birmingham plating industry experienced similar difficulties)

The presentation reviews the electrochemical aspects and describes an experimental programme designed to evaluate the familiar bichromate (Poggendorf) battery.

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**Direct Measurement of Ionic Diffusion in Organic Coatings by Stuart Lyon DSc, FIM, CEng, FICorr, CSci – President, Institute of Corrosion**

The scientific study of anti-corrosion mechanisms in organic coatings is surprisingly difficult experimentally and there are few techniques available that are able to identify diffusion and migration of ions in coatings.

This presentation provides a brief review of historical data and techniques for measuring ionic movement in paint. Recent research by the author and others, using novel electrochemical and spectroscopic methods, will be presented that will demonstrate unambiguously, ionic migration in organic coatings. The relevance of these studies to industrial coating systems will be discussed

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**Following the Christmas Lunch the Annual General Meeting for the year ending 30 June 2005 will take place. This will be followed by the presentation of the Institute Awards.**

Non-members and guests are welcome to attend this celebratory event. Why not use the occasion to entertain your business colleagues, clients and customers. The cost for nonmembers is £25.00 each (inclusive of VAT) covering coffee on arrival and full Christmas Lunch with wine.

**Contact Exeter House NOW to reserve your place.**

## Health, Safety and Environment

### Personal Protective Equipment at Work

HSE has revised the leaflet detailing the requirements of the Personal Protective Equipment (PPE) at Work Regulations 1992. It is aimed at employers and users of PPE and covers the provision and use of PPE, how to assess suitable equipment, maintenance of equipment and training in how to use it.

A short guide to the Personal Protective Equipment at Work Regulations 1992 leaflet INDG174(rev1) can be obtained from HSE Books ISBN 0 7176 0889 1 (single copy free)

A new edition of the L25 Guidance on these Regulations is also available from HSE Books - ISBN 0 7076 6139 3 priced £8.95

### HSE publishes data on work-related ill health

The report has been published detailing information on the extent of work-related ill health for 2003/04. It shows that 29.8 million working days were lost to work-related illness, with an estimated 2.2 million people in Great Britain who believed they suffered from an illness that was caused or made worse by their current or past work.

Musculoskeletal disorders followed by stress, depression or anxiety were by far the most commonly reported types of work-related illness. On average, each person who was suffering took an estimated 22 days off work during a 12-month period, which when averaged across the working population represents an annual loss of 1.3 days per worker.

### Where to start with Health and Safety

If you're a new business or just looking for help for the first time it may seem a bit overwhelming. That's why HSE has produced a Health and Safety Starter pack – to provide a comprehensive, low cost introduction to health and safety for new and small businesses.

The pack contains most of the basic advice you need to help your business to comply with the law and protect your employees. It includes copies of the Health and Safety Law Poster, which MUST be displayed in your premises by law, and also the HSE Accident Book.

The cost of the pack is £30.00 and can be obtained by post from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA, or Tel: 01787 881165 or Fax: 01787 313995

### The future of risk communication

Besides legislation there are various efforts to raise awareness of hazards for those working in particular industries. A study investigated the possibility of presenting information in the form of 'advanced risk messaging' - this term coined to mean interactive computer-based methods to deliver risk messages to people potentially exposed to harm.

The study examined both the characteristics of the receivers in their response to risk communication and the effectiveness of providing messages using this medium.

Enhancing chemical risk control for reducing exposure in the workplace through advanced risk messaging techniques RR354 ISBN 0 7176 6128 8 is available from HSE Books.

### Sickness absence and return to work

Developed in partnership the TUC, HSE has published a leaflet aimed at safety representatives. It contains information and practical advice for dealing with long-term sickness absence and return to work issues. It suggests ways that safety representatives can work in partnership with employers and the workers they represent to help prevent illness, injury and disability leading to prolonged sickness, absence and job loss.

Working together to prevent sickness absence becoming job loss: Practical advice for safety and other trade union representatives is available online at: [www.hse.gov.uk/pubns/web02pdf](http://www.hse.gov.uk/pubns/web02pdf)

### Environment Agency

A new 'report card' for the environment shows there is plenty of room for improvement

**AIR** - Continued improvement but effects of climate change and traffic pollution in cities still a problem.

**WATER** – Rivers and coasts cleanest on record. Ageing sewerage system, poor drainage and run-off from roads and field needs attention.

**WILDLIFE** – Still losing parts of the complex web of life – causes include pollution, climate change,

spread of alien species and man-made damage to habitats.

**WASTE & RESOURCES** – Still producing far too much waste. Recycling rates are slowly increasing and business is less wasteful – but a long way to go.

**LAND** – We undervalue resources that land and soil provide. Poor soil management and careless use of land is damaging to environment.

**CLIMATE CHANGE** – Although the UK remains on course to meet its Kyoto Protocol targets, action to tackle climate change and prepare for its impact is too slow.

**FLOODING** – Flood defence and work to manage risks prevent £3.4 billion damage a year. But heavier rainfall, more storms and rising sea levels are increasing flood risks.

### **Chromic Acid & COMAH**

The reclassification of **Chromium trioxide** from toxic to very toxic by amendment to The Chemical [Hazard Information and Packaging Regulation] 2002 (CHIP3) is due to be implemented on **31 OCTOBER 2005**. As the CHIP3 hazard classification system is used to define COMAH 'dangerous substances', this change will move chromium trioxide from the COMAH generic hazard category of toxic into very toxic, subsequently reducing its COMAH qualifying threshold from 50 tonnes to 5 tonnes.

To assist companies, the HSE has produced a 'write-up' which sets out information of what this means, with examples and calculations, to electroplating and other surface treatments. It is some four A4 pages and too long to publish here. A copy can be obtained, on request, by post or e-mail from IMF at Exeter House.

### **WEEE Directive postponed**

The Government has postponed the implementation of the WEEE Directive until **JUNE 2006**. DTI Minister, Malcolm Wicks said, " This directive is about dealing effectively with electrical waste which can be damaging to the environment. It is challenging and has required a lot of planning and preparation but our priority is to get it right." Said Jeff Cooper EA's Manager for Waste Producer Responsibility "The EA will work closely with Government Departments and the devolved administrations to implement the forthcoming WEEE Regulations. We expect to be able to announce arrangements for registration of producers in the early autumn with registration starting in **JANUARY 2006**. Full details can be viewed on line at: [www.dti.gov.uk/sustainability/weee/index.htm](http://www.dti.gov.uk/sustainability/weee/index.htm)

## **Company News and Products**

### **Henkel Loctite Ltd**

Henkel announce a big breakthrough in surface treatment – Bonderite NT – a more efficient, less complicated and more cost-effective than conventional iron phosphating. Used prior to painting on metals, the nanotechnology-based conversion coating is free of phosphate and toxic heavy metals. It is ultra-thin and uniform and makes production processes significantly more economical.

Bonderite NT is suitable for surface pretreatment for all conventional powders and wet paint coatings and can be applied by immersion or spraying to create a cohesive, inorganic, high-density layer incorporating nanoparticles.

Advantages claimed include:

- Room temperature operation – energy saving
  - Faster – parts treated in 20 seconds
  - Passivation not required
  - More environment friendly – less sludge
- Further information tel: 01442 278000

### **Wheelabrator Group**



International Surface Preparation Corporation has given seven brands the name 'Wheelabrator Group'. The new title gives the brands – whose titles will continue being used to identify particular product ranges – a united identity as a total service provider for all customers' surface preparation needs. Within the new-look family are:

**Impact Finishers:** shot peening sub-contract providers;

Vacu-Blast: specialist air blast cabinets/blast rooms;

**Spencer Halstead and Tilghman Wheelabrator** – wheel blast solutions

**Walther Trowal** – mass finishing and effluent treatment equipment and

**Clean-Tek** – washing, degreasing and ultrasonic systems.

The group has sites in the UK in Altrincham, Birmingham, Coventry, Ossett near Wakefield and Slough.

Further information, Colin Ward, Wheelabrator Group tel: 01924 276303 or 07711 100147

### Product Finishing Handbook

A welcome return – the Product Finishing Directory and Handbook is an invaluable source of information with it's A – Z guide to finishing products, processes and services. This book has been revised and updated as a slim-line version. A MUST for anyone involved in surface finishing. Priced @ £50 (UK) £60 (rest of world) including p&p from Hill Media Limited. Order your copy now - Tel: +44 (0) 1442 826826 or Fax: +44(0) 01442 823400

### Premier Sodablasting

Sodablasting technology was invented and developed in the USA some 20 years ago and is now in use worldwide. The technology uses compressed air to propel sodium bicarbonate to a surface to be stripped or cleaned and can remove paint, oil, grime, graffiti etc from many different substrates. The soda crystals explode upon impact with the work surface creating a gentle cleaning effect.

For further information or to arrange a demonstration contact Harry Sharp – tel: 0121 472 3695, Fax 0121 471 2807 or mobile: 07900917532

### 3M Abrasive Systems

3M has developed a new approach to abrasive belt design which offers improved life, better surface finish and a consistent cut throughout the life of the belt. The 3M Trizact CF Abrasive Belt System uses 'macro replication' technology to deposit large 3-D structures of abrasive material (7mm x 1mm) uniformly across the surface of the belt. Trizact CF abrasive has a semi-flexible X weight backing and suitable on a wide variety of contact wheels. It is available in five grades: from A300 (P80) to A45 (P400).

Further details from the Customer Information Team tel: 0870 6080090, e-mail: [abrasives.uk@mmm.com](mailto:abrasives.uk@mmm.com)

### Cytec Surface Specialities

Cytec announced it has introduced a new family of stabilisers – under the ADDITOL® brand name – which offer outstanding performance in a wide range of UV-cured coatings, inks and pigment pastes.

The new products are:

ADDITOL S 100 stabiliser – a yellow paste for white and light colour pigmented systems;

ADDITOL S 110 stabiliser – a dark brown semicrystalline paste for a wide range of pigmented systems and

ADDITOL S 120 stabiliser – a pale coloured liquid for use in virtually any pigmented system and clear coat.

Further information contact Michael Scharf, Tel: ++32 (0) 2 559 9143

### News in Brief

Water company fined £60,000 plus £4,350 costs for sewage incident. The company admitted failing to deal with an escape of sewage into a brook with the consequential death of 12,000 fish including hundreds of large roach and pike. The occurrence took place in the hot summer of 2003 when water flows in the brook were low leaving fish especially vulnerable.

Building supplies retailer fined £40,000 plus £6,181 costs after admitting storing and treating controlled wastes without a waste management licence. Officers from the Environment Agency found that a storage compound contained waste, including soil, subsoil, concrete, metal and asbestos cement, the latter included fragments of both brown and white asbestos that could have posed a



potential risk to human health as the site was surrounded by housing on three sides.

The poor performance of the waste sector is a continuing concern to the Environment Agency. More than half of the big fines imposed by the courts were for illegal waste activity. In particular there was an unacceptably high incidents of repeat offenders and those acting as waste management business without a waste management licence. **Editors Comment – It is your responsibility to ensure that wherever you send your waste that they are licensed to deal with it and also that whoever you employ to transport the waste is licensed to do so.**

Water company fined £2,500 with £849 costs for discharging sewage effluent into controlled waters. A 'large flow' of grey liquid was coming from a manhole cover at a pumping station. Because of damage to the pumps the pumping capacity had been severely reduced, so the pumping station was unable to pass on the flows and overflowed.

The owners of a pub in Devon were fined £6,000 with £853 costs for polluting a river estuary with sewage. An EA officer visited the pub to be greeted by the stench of sewage and rotting food. Effluent was running across the car park into a surface water drain that went into the river estuary via a stream.

## IMF News

### New members and transfers

**Student:** Zhang Y - Loughborough

**Licentiate:** Lewis O.D \* - Bakewell

**Member:** Austin P \*\* Middlesex, Colwell D\*\* - Fleet, Goodyer M # - Leamington Spa

**Fellow:** Critchlow G ## - Loughborough, Tolliday J - Weston-Super-Mare

\*transfer from Student

\*\* transfer from Affiliate

# transfer from TechIMF

## transfer from Member

### Automotive Academy approves more IMF Education & Training Syllabi

The Automotive Academy has recently approved the syllabi leading to the certification, by examination, of the following:

Foundation Certificate

MF1 Module – General Principles

MF2 Module – Plating Practice

MF2 Module – Paint, Lacquer & Varnish

MF2 Module – Powder Coating

Further syllabi for the Technician Certificate, Advanced Technician Certificate and Advanced Technician Diplomas are currently being assessed.

### Foundation Course

The first tutored course for the Foundation Certificate comprising a mixture of electroplating and anodising units, together with some of the newly written and approved units for organic finishing plus some mandatory units – Appreciation of surface finishing technologies, H&S, environment and maintenance of solutions and product quality, has commenced.

The course is being tutored on-site, one-day per week over four weeks.

To ascertain how the Institute can assist in the training of your employees, with topics specific to your needs contact Exeter House on 0121 622 7387

### New Sustaining Member Companies

Amphenol Ltd

Thanetway, Whitstable



Kent CT5 3JF

Tel: 01227 773200, Fax: 01227 276571

Amphenol are electroplaters of cadmium, gold, nickel, silver, tin and zinc cobalt alloy primarily for Aerospace and Defence applications.

Johnson Matthey plc  
Orchard Road, Royston  
Herts SG8 5HE

Tel: 01763 253000, Fax: 01763 253492

A leading FTSE 100 company in the Chemistry of Precious Metals Salts and Metal Powders used by Platers and Coaters in Industry. Metal recovery is also offered.

Bristol Bending Services Limited

203 Burcott Road, Bristol

Avonmouth BS11 8AP

Tel: 0117 982 4511, Fax: 0117 982 1802

Bristol Bending are an approved surface finishing coater for Honda, Nissan and Toyota. Process carried out include zinc and zinc-nickel electroplating and electrophoretic painting.

## Examination Results

### Technician

#### Automotive Surface Finishing Certificate BMW, Oxford – July 2005

- Adkins M #
- Allen R \*
- Butt M #
- Crook N #
- Mayhew S \*
- McCabe G \*
- Muir A #
- Parkin P #
- Parsons A
- Reynolds M \*
- Saunders L #

\* Pass with Merit

\*\* Pass with Distinction

### Stainless Plating Limited

Stainless Plating Limited, a Sustaining Member Company of the Institute, is an electroplating company with aerospace approval who undertake work for Rolls-Royce and Airbus. Whilst accredited to ISO 9001 and AS9100, the company did not have the resources to undertake the work necessary to meet the demands of environmental legislation, in particular ISO 14001, and ultimately secure the IPPC permit.

Using funding secured by NAMTEC, the company was able to bring in industrial consultants, E9 Ltd at a fraction of the normal charge. Brenda Grove, Managing Director of the company said "Without the funding and support from NAMTEC and E9 Ltd we would not have been able to afford the expert help we need to secure ISO 14001. We are now in a position to apply for our IPPC permit, less than six months after we started working with NAMTEC"

## British Standards

### BS EN Publications

BS EN 1274:2004 Thermal Spraying. Powders.

Composition, technical supply conditions



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Supersedes BS EN 1274:1997  
ISBN 0 580 46162 9

**BS EN 10318:2005**

Determination of thickness and chemical composition of zinc- and aluminium-based metallic coatings.  
Routine method  
No current standard superseded  
ISBN 0 580 46158 0

**BS EN 12981:2005 Coating plants.**

Spray booths for application of organic powder coating materials. Safety requirements  
No current standard superseded  
ISBN 0 580 45680 3

## Out and About

**IMF Midland Branch, FREE one-day symposium**

'What's new in the competitive and legislative world of Surface Finishing'.

18 October at the Birmingham Medical Institute

SEE BROCHURE INCLUDED WITH THIS MAIL SHOT FOR PROGRAMME AND REGISTRATION FORM.

**EUROFINISH 2005**

October 19 – 21, Gent, Belgium

Details: [www.eurofinish.be](http://www.eurofinish.be)

**Surface World 2005**

8 – 10 November, Pavilion 1, NEC, Birmingham

Information – Visitors +44 (0) 1442 230431

Exhibitor +44 (0) 1442 826 826

**SEA Surface World Seminar (in association with Surface World 2005)**

8 – 9 November, Crowne Plaza Hotel, NEC, Birmingham. Brochure detailing programme from the Surface Engineering Association

Tel: 0121 237 1123, Fax 0121 237 1124

**Wales & South West Manufacturing 2005**

16-17 November, CIA Cardiff

For information pack call 01784 880890

**British Stainless Steel Association**

17 November, Stratford upon Avon. One day conference to highlight market issues and development opportunities.

Details - Tel: 0114 267 1263. [www.bssa.org.uk](http://www.bssa.org.uk)