



IMFormation December 2006

Have you booked your place for the Christmas Lectures, Traditional Christmas Luncheon followed by the Annual General Meeting ?

Wednesday 6 December 2006 at the Birmingham Medical Institute 36 Harborne Road, Edgbaston, Birmingham B15 3AF

Commencing at 11.00:

Hothersall Memorial Lecture by J.I. Onate Ind.Eng, MSc, PhD, FIMF entitled: Lubricant coatings produced by PVD technologies

The need for tribology improvements in mechanisms and tooling in general, under conditions where liquid lubrication has not been either feasible or recommended due to environmental constraints, has been the driving force of many attempts to produce low friction coatings to provide a durable solid lubrication.

Diamond Like Coatings (DLC) are among the coating materials that have been investigated by a variety of methods including PVD, but mainly Plasma Assisted CVD or hybrid technologies. This coating material has found applications for automotive components and is reported also for biomedical applications, owing to its inertness and hence corrosion resistance under body fluids. One of the more stringent requirements in terms of low friction torque is that of space mechanisms, where low friction coefficients are necessary. Vacuum deposited MoS₂ thin films found early use in mechanisms where solid lubrication was mandatory to avoid risk of contamination of optics and nearby scientific instruments. Recent developments in PVD technology with magnetron sputtering with high levels of ionisation have allowed the development of a new family of alloyed MoS₂ thin films with more compact structures at no expense of low friction behaviour and with enhanced resistance to wear and reduced degradation by humidity. Additionally, the technology allows the selection of coating parameters that promote the deposition of nano-structured coatings that can have better wear and tribological properties.

The author will provide an overview of some recent developments in dry lubrication by PVD. Examples will be given of a DLC coating that has found use for biomedical applications, a way of rendering a low friction surface by ion beams and how alloyed MoS₂ coatings produced by magnetron sputtering can outperform conventional unalloyed MoS₂ not only under vacuum but also under atmospheric high humidity conditions.

Christmas Lecture by G.D. Wilcox BSc, MPhil, MICorr, AIMMM, FIMF entitled: Electrodeposition – a versatile tool for the surface engineer

Electrodeposition (electroplating) is one of the oldest coating technologies known to man. As a mature industrial process, it is responsible for producing a wide range of metallic finishes from simple single metals to high value alloys. Its virtues can often be defined as relative simplicity of operation and flexibility in terms of the spectrum of finishes that can be achieved. However, in today's environmentally conscious world, it is frequently portrayed as an old-fashioned and outmoded technique.

This presentation suggests a different view where electrodeposition can be seen as a powerful technique which may, in some areas, still have a few surprises up its sleeve!

To substantiate this counter-claim the author will explore some of the developments in electrodeposition that have occurred in recent years – particularly some that have been investigated at Loughborough University. These include compositionally modulated multilayers, composite electrodeposits, non-aqueous ionic liquid electrolytes and the strange saga of the spontaneous whisker producing electrodeposited alloy!

At the conclusion of the lecture there will follow the traditional Christmas lunch with wine. Members are welcomed to bring along guests for which a charge of £25 is payable – why not book a table and entertain your business colleagues.



Health, Safety and Environment

European Parliament backs substitution principle for PFOS (part of official communication with respect to surface finishing)

The European Parliament adopted a report seeking to limit the use of PFOS previously present in everyday consumer goods such as carpets and textiles as well as some industrial products. The vote confirms a first-reading agreement between Parliament and Council.

The directive will ban the placing of PFOS on the market and their use as a substance or constituent of preparation in a concentration equal to or higher 0.005% by mass.

Under the directive, substances and preparations needed to produce photoresists or anti-reflective coatings for photolithography processes, photographic coatings applied to films, papers, or printing plates may contain PFOS in larger quantities. The same applies to suppressants for non-decorative hard chromium (VI) plating and wetting agents for use in controlled electroplating systems as well as hydraulic fluids for aviation. Member States must compile and send to the Commission an inventory listing the processes for chromium plating subject to derogation, the amount of PFOS used in and released into the environment. Member States will have 18 months to enact the directive in national law, i.e. up to mid-2008

Defra

The Government, in collaboration with the Welsh Assembly Government and the Environment Agency have published a consultative paper seeking views on proposals to create a streamlined environmental compliance and permitting system in England and Wales. The existing system is felt to be excessively complex and imposes unnecessary administration burdens. This view has found support from the 'Better Regulation Taskforce' and the National Audit Office. Copy of the consultation document is available at: www.defra.gov.uk/environment/epp

Environmental Forensics

Environmental forensics could now make it easier to prove, to the satisfaction of a court of law, who is responsible for instances of pollution and the future of brownfield sites. The EU Environmental Liability Directive due to come into force in 2007 will make it necessary to determine who is responsible for such pollution so that they can be required to meet the cost of remediation (known as the polluter-pays principle)

Defra – 2007-8 Fees & Charges

Defra have issued a consultative document on the proposed increases for affected industries related to LAPC, LAPPCC and LA-IPPC. These are:

- All PPC subsistence charges should be increased by between 2.37 and 2.86%
- All other charges including application fees should be increased by 2.11%

Defra proposes that all standard process application fees are increased by £1058 and reduced application fees increased by £201 for application made after the due date – i.e. in relation to installations operating without a permit.

The consultation document can be obtained on request by telephoning: 020 7238 6575 or by e-mailing: defra.library@defra.qsi.gov.uk

Another WEEE update

The European Commission has launched a review of the WEEE Directive under which the commission is required to submit a report to the European Parliament by February 2008 on member states' application of the directive accompanied by proposed revisions to the directive.

The aim of the review is to examine possibilities to increase the efficiency of the directive in achieving its environmental goals and to eliminate any unnecessary costs resulting from implementation of the directive. The review will focus on four different areas:

- Revision of targets
- Scope of the Directive
- Operation of Producer Responsibility Provisions
- Treatment Requirements

The review will also assess the option of including new types of equipment in the scope of the directive. A stakeholder consultation has been launched to provide input into the review.

HSE – First Aid at Work

The leaflet Basic advice on first aid at work shows basic first-aid procedures. It is aimed primarily at



first-aiders and intended for use in first-aid boxes. It gives guidance on what to do in an emergency and lists the priorities to consider: how to check for response, how to check the airway, breathing and circulation, and what to do if there is a problem with these. It also discusses severe bleeding, broken bones and spinal injuries, burns, eye injuries and record keeping. Two posters have also been published which show Basic advice on first-aid at works and Electric shock: First-aid procedures gives basic advice on what to do. Both posters are aimed primarily at employees. Copies of Basic advice on first aid at work Leaflet INDG347(rev1) single copy free or online at: www.hse.gov.uk/pubns/indg347.pdf

The posters Basic advice on first aid at work ISBN 0 7176 6195 4 and Electric shock:First aid procedures ISBN 0 7176 6203 9 priced at £7.23 each. Both of the leaflet and posters available from HSE Books.

HSE – Up and coming legislation

Effective 1 October 2006

Respirable Crystalline Silica – Workplace Exposure Limit (WEL)

This changes the WEL for respirable silica from 0.3 mg/m³ to 0.1 mg/m³.

The change will be implemented by an amendment to HSE's booklet EH40.2005 Workplace exposure limits

Effective 6 April 2007

Chemicals (Hazard Information and Packaging for Supply) (Amendment) Regulations

(CHIP3.2) Implements the European Commission's Directive 2006/8/EC. This amends the Dangerous Preparation Directive (1999/45/EC) making minor changes to some of the rules and procedures used to classify and label preparations (mixtures of chemicals).

Biocidal Products (Amendment) Regulations.

Will make adjustments called for by three European Commission Regulations in switching on the provisions in the Biocidal Products Directive (98/8/EC) for certain classes of products

Health and Safety (Fees) Regulations

These Regulations update the fees and changes relating to safety case assessment, inspection and approvals in the 'permissioning regimes', i.e. onshore major hazards, offshore oil and gas, and gas transportation, and charges for work on a wide variety of statutory functions.

Asbestos – Don't take the gamble

HSE's asbestos campaign began in September – aiming to raise awareness of the likelihood of maintenance workers coming into contact with asbestos, and providing useful information for dutyholders on how to fulfil their responsibilities under the law.

For more information about the campaign view the web on: www.hse.gov.uk/asbestos

European Week for Safety & Health at Work

This years' event commenced in October and focused on young workers. Figures show that people are at particular risk of injury in the first six months of a job. So it is vital they receive training and supervision to allow them to manage risks. The following genuine incidents are typical of the thousands of accidents affecting young people.

Whilst installing a barn roof a 21-year old man fell from a 'home-made' basket balanced on the forks of a telehandler some 25 feet above the ground. Result the man received serious injuries.

A 19-year old working for a company that cleaned industrial ductwork. He and co-workers were cleaning the inside of a duct, part of a paint spray booth. The 19-year old's job was to scrape the paint residue off the inside walls of the duct. Whilst inside, paint particles ignited resulting in a fireball. He received third degree burns to over 82% of his body.

A 19-year old worker was crushed to death by falling steel bars whilst working under a suspended load, held in a sling. Neither the young man or the person he was working with, had received adequate instruction and training.

Taking rubbish out on time



A recent High Court ruling has affected all businesses that have their waste collected from public land or highways.

Firms will now have to ensure not only that their waste does not escape, but also that their employees take all reasonable measures to ensure they do not increase the risk of an escape.

The recent High Court case clarified the duty of care that anyone putting commercial waste out for collection owed under the Environmental Protection Act 1990.

'Court' in the act

Staffordshire - A skip hire operator who sent a load of waste to a waste to a disposal site containing 660 kg of asbestos has been fined £20,000 with £2,500 costs. He admitting the offence and three others, including not having a Waste Management Licence.

Norfolk - A company who converts used cooking oil into a biodiesel fuel allowed some to pollute a drainage ditch. Locals in the area saw a film of oil on water in the ditch and reported a 'chip shop smell' to the EA. Admitting the offence including operating outside its permit the company was fined £24,000 with £5,282 costs.

Essex - Guidelines on how to treat a chemical spillage were ignored by two companies and the district council leading to the death of thousands of fish. One company washed down the site with water using hoses for 10 hours despite the dangers of run-off into the drainage system. The council were fined £50,000 with £38,000 costs and the two companies were each fined £40,000 with £33,000 costs.

Yorkshire – Running an illegal scrap yard landed the owner a 28-day prison sentence for failing to have a Waste Management Licence. The EA has previously offered to help the owner apply for a licence, required under the 'End of Life Vehicle Directive'. When EA officers visited the site they found more than 130 scrap cars.

Company News and Products

Balzers (part of the Unaxis Group)

PVD company Balzers is aiming to strengthen its market presence under a new brand name of Oerliken Balzer Coatings. All business units of the previous Unaxis Group will be combined under the single Oerliken brand. Balzers develop coatings and coating processes, market systems and production equipment and provide a contract coating service in a global network that includes over 70 production centres in Europe, America and Asia. For information – tel: 01908 377277

British Coating Federation (BCF)

The BCF has updated its free guide to the disposal of coating powder wastes in line with the recent changes in waste management legislation. The guide provides purchasers and applicators of coating powders with advice on the classification of waste coating powders and packaging, together with information on material disposal requirements. The guide covers a range of topics – which includes the packaging in which powders are supplied, together with any surplus powders as well as redundant or obsolete powders. All wastes are 'controlled wastes' and covered by the Duty of Care Regulations'. The guide is available Free of Charge to powder coaters and is available from your powder supplier or can be downloaded from the Environmental (Industrial/ professional users) Publication page of the BCF website at: www.coatings.org.uk

Schloetter Company Ltd

Schloetter announce a new range of processes:

RHODUNA® SL-C – cost effective Rhodium process

RHODUNA® SL-P – brush plating Rhodium process

SLOTANIT OT 110 – ultra bright, acid zinc process

SLOTALOY ZE 100 – extra stable alkaline Zinc-Iron bath for automotive and general metal finishing

SLOTOPAS ZN T 70 – clear trivalent chromate passivate for Zinc-Nickel

SLOTOPAS ZN 300 – black trivalent passivate for Zinc-Nickel especially for automotive industries

For more information on any of the above, please contact Paul Griffiths – tel: 01386 552331



Innoval Technology

Innoval have launched a portfolio of training courses specifically for companies in the aluminium industry. The courses cover a range of topics from metallurgy, surface treatment and analytical techniques to rolling and process control.

Further information – tel: 01295 702800

Darcy – spill control products & services

Darcy, at a recent open day held in Birmingham demonstrated a range of their products to tackle a range of spills encountered in day to day workings. Some of the products could be of particular interests to the surface finishing industry:

DAMMIT – leak sealing putty. Suitable for leaks from holes, tears and ruptures which stops most spills at source pending permanent repair – just push a handful onto the source of the leak. Will withstand pressure of 25 bar (2.5m head) and effective down to –20oC. Available as a pre-mixed putty in 800g pot

DAMMIT X mats. Supplied as effective low cost mats in three sizes. Ideal for putting over drains to prevent *spills entering surface water and sewer drains*

DRIZIT – chemical absorbents. Use inside and outside for spills, leaks and drips of corrosive chemicals (acid & alkalis) as well as oils, water and coolants. 100% polypropylene loose particulate with excellent chemical resistance - high absorbency, high liquid retention (no drips when picked up) and can be incinerated. Also available in filled pads and rolls, cushions, socks & booms.

All products are also available in a range of ‘spill kits’ and meet with Environment Agency guidelines and legislation and assist with ISO14001 compliance. To obtain a full catalogue of available products contact Darcy – Tel: 01732 843131, Fax: 01732 525500 or E-mail: engs@darcy.co.uk

Locksley Press Ltd – New Books

Two new books:

Health and Safety at Work Brief Volume 1 – (over 600 pages) Commentary covering all aspect of H & S

Volume 2 – (over 500 pages) Key Legislative Texts

Environment Brief Definitive and comprehensive new guide to and commentary on the new environmental law.

Further information tel/fax: 0800 917 8104, E-mail: info@lockleybrief.co.uk or visit the website at: www.lockleybrief.co.uk

HSE Book News

HSE has now formally discontinued its ‘subscription information service. Details of new publications in HSE’s other subscription services – “Health & Safety Newsletter”, - “Quarry Fact File” and “Site Safe News” and are also featured on the HSE Website at: www.hse.gov.uk

IMF News

Recent Examination Results

Foundation Module - September 2006

Taylor, R* DARA

Plating Practice Module - September 2006

Sverdloff N.S. *Nu-Pro Surface Technology

Also awarded Technician Certificate * as having passed the General Principles Module earlier.

* pass with merit



New Members and Transfers

Student	Concannon, Lucy	Birmingham Uni.
	Tepe, Bulent	Uni. of Ulster
Affiliate	Mertikas, Alexandros	BMW
	McCullough, Paul	Thales Air Defence
	Reddick, Gavin	BMW
	Spackman, David	Messier-Dowty
	Whitehead, Emma	CML Group
Fellow	El-Mallah, Ahmed	Egypt
	Hanson, Paul	Atotech (UK) Ltd
	Taylor, Geoffery	

New Sustaining Members

Defence Aviation Repair Agency

DARA Components. DARA Almondbank
Perth PH1 3NQ

Tel: 01738 584350, Fax: 01738 584311

DARA provides a range of surface finishing processes, principally for aviation and land systems components for recondition, repair and manufacture.

Fastener Engineering & Research Association

National Metalworking Centre
47 Birmingham Road
West Bromwich B70 6PY

Tel: 0121 601 6350, Fax: 0121 601 6373

FERA is a pioneering professional association for engineers and designers involved in the specification of fasteners, the installation of mechanical fasteners, the use of adhesives and involvement in application joint design.

The Institute of Vitreous Enamellers

39 SweetbriarWay, Heath Hayes
Staffordshire WS12 2US

Tel: 01543 450596, Fax: 08700 941237

The IVE provides technical and educational services to members and industry. Merging with the Vitreous Enamel Authority it looks after all commercial and legislative issues that affect the industry. The 'Atlas of Enamel Defects' is recognised as the leading guide to manufacture and maintenance of vitreous enamel. source of information. A quarterly journal 'The Vitreous Enameller' is a reliable information source.

Hong Kong Metal Finishing Society Ltd

5/F HKPC Building, 78 Tat Chee Avenue
Kowloon Tong, Hong Kong

Tel: 00852 81200323, Fax: 00852 81200325

Web: www.hkmfs.org.hk

Email: secretary@hkmfs.org.hk

Loughborough Surface Analysis Ltd

PO Box 5016, Loughborough
Leicestershire LE11 3WS

Tel: 01509 283069, Fax: 01509 283067

LSA provides a surface-analysis and depth-profiling service to help with issues such as delamination, impurities, dewetting, particulates & failure analysis Flexible & responsive service with rapid turn around



Linhoff & Partners Galvanotechnik GmbH

Luenkerhohl 32A

58644 Iserlohn 1

Germany

Tel: 00492371 15750, Fax: 0049 2371 15729

A manufacturer with over 30 years experience manufacturing electroplating barrels and aggregates, made from PP and PE1000, plus spare parts such as contact cables, sieve plugs, cog wheels etc.

EVENTS

Midland Branch

Waste/Waste Minimisation one-day Symposium & Tabletop Exhibition at the Birmingham Medical Institute on Tuesday 13 February 2007.

This events will feature a wide range of topics of interest directed to the surface finishing industry. For detailed programme and registration form tel/fax: 0121 308 0777 or e-mail ronread@ic24.net

Organic Finishing Group

Organic Finishing for the Aerospace Industry. One day symposium at the RAF Museum, Cosford on Wednesday 21 February 2007. Featuring presentations vital to the continuing growth and sustainability of the industry. Includes taking lunch under the wings of the WW2 Lincoln bomber, and time to tour the museum. Detailed programme and registration form from IMF office, tel 0121 622 7387, fax: 0121 666 6316 or by e-mail: exeterhouse@instituteofmetalfinishing.org

Out and About

CALL FOR PAPERS

RAPRA Technology is calling for papers for a REACH 2007 conference to be held in Brussels from 17–18 April. Interested persons should send speakers' name, title of paper and short summary to Alix Yates: ayates@rapra.net

ALUMINIUM TWO THOUSAND – ALL THE 3rd MILLENNIUM TECHNOLOGIES at the 6th International Congress.

13 – 17 March 2007, Florence, Italy Further information – Tel: +39-059-282390, Fax: +39 –059-280462 or email: info@interall.it

METEC 07 METALLURGICAL TECHNOLOGY TRADE FAIR - 12 – 16 June, Dusseldorf.

See: www.metec.de

METEC 07 METALLURGICAL TECHNOLOGY FINISH 07 - 17 -20 September, Indianapolis, USA.

See: www.finish07.com

SURFACE WORLD + PAINT & POWDER 2007

6 - 8 November 2007 - Pavillion, NEC, Birmingham. To reserve a stand at this exhibition contact Nigel Bean, Tel: 01442 826826, Fax: 01442 823400, e-mail: nigelbean1@aol.com