

EFC NEWSLETTER

FÉDÉRATION EUROPÉENNE DE LA CORROSION
EUROPEAN FEDERATION OF CORROSION
EUROPÄISCHE FÖDERATION KORROSION



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EUROCORR 2014

Pisa, Italy, 8-12 September 2014

The premier European Corrosion event, the 34th in our EUROCORR series, will return to the same Latin land where Plinius the Elder first coined the phrase "*ferrum corrumpitur*". The Italian Metallurgical Association – **AIM** will be your host for **EUROCORR 2014**.



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Piazza del Duomo (Cathedral Place) in Pisa, Italy
Photo: artgreco (Giuseppe Greco)

Tuscany is a region of Italy where, for millennia, its fortunes were historically linked to the extraction of minerals which greatly contributed to its metallurgical development back in the Bronze Age. Today, however, Tuscany is better known for its beautiful landscapes and wealth of Renaissance art and architecture. **EUROCORR 2014**'s host city of Pisa, a one-time Maritime Republic and ruler of the Mediterranean, is immediately recognisable the world over for its buildings, monuments and museums and, due to its important university, is a dynamic and young city, easily navigable by foot and ideal to offer the EUROCORR participant an affordable choice of accommodations.

Following the prestigious corrosion science and engineering tradition of the EUROCORR series, EUROCORR 2014 will be centered around: “*Improving materials durability: from cultural heritage to industrial applications*” with a scientific programme consisting of plenary meetings, keynote lectures, workshops and oral and poster presentations and intensely focused sessions and joint-sessions led by the 19 EFC Working Parties as well as an exhibition area where companies, institutes and all other entities dealing with corrosion prevention will have an opportunity to showcase their products and services.

The Congress will offer a full social programme designed to give delegates pleasurable opportunities to meet informally and to enjoy the very attractive city of Pisa and the surrounding region of Tuscany including the renaissance treasures of Florence, Lucca, Siena, San Gimignano and the famed Chianti region.

The EUROCORR local Congress Organising committee and Congress Chairmen Lorenzo Fedrizzi and Luciano Lazzari invite perspective authors to submit contributions and look forward to giving

everyone a warm *Benvenuto* at EUROCORR 2014 in Pisa.

Important dates:

Submission of abstracts:	13 January 2014
Notification of acceptance to authors:	31 March 2014
Submission of full manuscripts:	30 May 2014

Contacts:

EUROCORR 2014
<http://www.eurocorr2014.org>

Congress Secretariat:



P. le R. Morandi, 2
20121 Milan, Italy
Tel: +39 0276021132
Fax: +39 0276020551
E-mail: eurocorr2014@aimnet.it

EUROCORR 2014
EUROPEAN CORROSION CONGRESS
8-12 September 2014
Pisa · Italy
www.eurocorr2014.org

Contacts:
EUROCORR 2014
ASSOCIAZIONE ITALIANA DI METALLURGIA
P.le R. Morandi, 2
20121 Milano, Italy
phone +39 0276021132
fax +39 0276020551
e-mail: eurocorr2014@aimnet.it
European Federation of Corrosion
Event nr. 364



LETTER FROM THE EFC PRESIDENT

To all the members of the European Federation of Corrosion

Dear member,

As new President of the European Federation of Corrosion I would first like to thank the members of the Board of Administration and the General Assembly who, at last year's EUROCORR 2012 Conference in Istanbul, nominated and elected me as President of the largest corrosion organisation in Europe with representation from over 30 national societies from 25 European countries and an increasing number of international members from outside of Europe. This appointment is a great honor for me and I will do my best to face the many commitments that this position entails.

I would also like to take this occasion to publicly thank my last two predecessors, Prof. Philippe Marcus and Prof. Michael Schütze, for their extensive efforts in strengthening and developing the EFC, making it the important organisation it is today and a valuable resource for corrosion specialists the world over. The EFC is an extremely reputable organisation of high standing and is well-positioned to extend membership to partners beyond Europe's borders to form working relationships in the corrosion sector. Our annual EUROCORR conference, the EFC's flagship event, is now the most important and attended corrosion event in Europe attracting more than 800 participants, with an ever-increasing number coming from outside of Europe as they recognise the central role that EUROCORR plays as a fulcrum for the corrosion community.

Moreover, as you certainly know, individual members of our EFC Member Societies have access to the many different services and benefits that their membership entitles them to, including participation in the activities of our 19 Working Parties of corrosion specialty areas, reduced attendance fees at EFC events as well as discounted rates on all EFC publications, including the EFC "Greenbook" Series.

Much work has already been carried out but, as is the norm in a continuously improving process, more work is still to be done and, as new EFC President, I would like to share my vision and goals for the future of our federation with you.

At this time I believe our attention and energies should be focused on two main areas:

- Our **Member Societies**, spread as they are throughout Europe, are the core of who we are and I would like to strengthen their relationship with the EFC Board of Administrators, Science and Technology Advisory Committee (STAC) and our 3 Secretariats in Paris, London and Frankfurt am Main, in order to disseminate the presence and support of the EFC across all of Europe.
- The EFC, and most especially our annual EUROCORR conference, must attract more people from both the **industrial sector** and **professional organisations** and extend to include special sessions dedicated to their specialty needs and interests.

With these objectives in mind, I look forward to your increased participation in our many EFC activities and to meeting you personally at EUROCORR 2013 in Estoril, Portugal, this coming **1st to 5th of September**.

Sincerely yours,

Lorenzo Fedrizzi



NEW SCIENTIFIC SECRETARY ROMAN BENDER



Roman Bender, born in 1971, studied chemistry at the Justus Liebig University in Giessen from 1992 to 1997. After having received his diploma he joined the Karl Winnacker Institute of DECHEMA (since 2013 DECHEMA-Forschungsinstitut) in Frankfurt (Main) as a research associate. Since 2000, he is head of the group 'materials and corrosion' at the DECHEMA and editor-in-chief of the world's largest corrosion data collection, the DECHEMA-Werkstoff-Tabelle (DWT), and the DECHEMA Corrosion Handbook, an English-language compendium based on the DWT. He received his doctorate in natural sciences in 2001 from the Technical University of Aachen (RWTH Aachen). The title of his doctoral title is "The role of alloying elements in metallic materials for corrosion resistance in chloridising atmospheres at high

temperatures in order to prolong component lifetimes" (in German). In 2008, Roman Bender was appointed chief executive officer of the GfKORR – The Society for Corrosion Protection.

E-mail: bender@dechema.de

Tel: +49 69 7564 278; Fax: +49 69 7564 418

EFC ADMINISTRATION UPDATE

EFC Administration

President:	Lorenzo Fedrizzi, Udine, Italy
Vice President:	Fatima Montemor, Lisbon, Portugal
STAC Committee Chairman:	Damien Féron, Gif-Sur-Yvette, France
Scientific Secretary:	Roman Bender, Frankfurt am Main, Germany
Public Relations Officer:	Juliet Ippolito, Naples, Italy
Frankfurt Secretariat:	Willi Meier / Ines Honndorf
Paris Secretariat:	Marcel Roche / Pascale Bridou Buffet
London Secretariat:	Ray Milbank

EUROPEAN CORROSION MEDAL WINNER

Professor Christofer Leygraf at EUROCORN 2013 Estoril



Christofer Leygraf, professor of Surface and Corrosion Science at the Royal Institute of Technology Stockholm, Sweden, will be awarded with the **European Corrosion Medal** at EUROCORN this year. The prestigious Medal goes to an individual for his or her outstanding work and contribution to the field of corrosion

science and engineering and will be presented to Christofer Leygraf at the EUROCORN opening ceremony on September 2nd. Christofer Leygraf was nominated by his Swedish EFC Member Society Swerea KIMAB, the Swedish Corrosion Institute.

Christofer Leygraf received his Master of Science in Engineering Physics from the Royal Institute of Technology (KTH) in Stockholm back in 1969. He then completed his Doctoral Thesis in Solid State Physics at KTH on low energy electron diffraction (LEED) studies of iron-chromium single crystals to explore the actual role of ultrathin oxide layers as passivating films on stainless steels (1973). After postdoctoral stays in Moscow (1977) with Prof. Kolotyarkin and at the University of California in Berkeley with Prof. Somorjai (1981-82), and an employment as deputy research leader at the Swedish Corrosion Institute (1981-87) Christofer Leygraf was appointed Professor of Corrosion Science at KTH in Stockholm in 1987.

In the 25 years since his appointment as professor, Christofer Leygraf has founded a large research group at KTH that deals with fundamental aspects of aqueous, atmospheric and high temperature corrosion. Together with co-workers he has built up sustainable activities to develop and establish a more molecular foundation of the probably most common, costly and complex form of corrosion: atmospheric

corrosion. This has been accomplished by gradually adopting surface sensitive techniques such as infrared reflection/absorption spectroscopy, the quartz crystal microbalance and sum frequency generation for exploring the nature of atmospheric corrosion on model systems under in-situ conditions. The results were summarised in a book entitled "Atmospheric Corrosion" (John Wiley & Sons) together with Professor Tom Graedel from USA. This book has found world-wide distribution, was later translated into Chinese, and will be updated during the next two years.

Christofer Leygraf's scientific and teaching efforts in Corrosion Science have resulted in numerous international awards and distinctions including:

- 2009 *U.R. Evans Award* presented by the Institute of Corrosion in UK,
- 2007 *Willis Rodney Whitney Award* presented by NACE International in USA,
- 2006 *Khwarizmi International Award* presented by the Iranian Research organisation,
- 2003 *Herbert Uhlig Award* presented by the Electrochemical Society, USA, and
- 1998 *Fulbright Award* presented by the United States Information Agency.

He has published circa 300 papers in peer-review journals and supervised more than 30 graduate students to a completed DSc-degree. Two of these, Inger Odnevall Wallinder (1996) and Magnus Johnson (2007), received the *Morris Cohen Award* presented by the Electrochemical Society, USA, for their outstanding doctoral thesis. He is married with two grown-up children, likes to spend his free time with his grandchildren, hiking and listening to classical music. Christofer Leygraf is also an elected member of the Royal Swedish Academy of Engineering Sciences (2003).

The EFC is proud to have Professor Christofer Leygraf as a long-standing, contributing member and bestowment of the European Corrosion Medal is our highest sign of achievement.

MEMBER SOCIETY NEWS AND PROFILES

NEWS FROM THE INSTITUTE OF CORROSION UK



It has been some time since ICorr last provided news of its activities in the UK where we remain strong and continue to further our aims and make progress in interacting with other learned societies in providing services to members and the corrosion industry in general. The structure of ICorr is such that we have a number of branches around the UK which meet on a regular basis between October and April and at these meetings we provide technical presentations and workshops for members and other like-minded organisations with whom we have common interests, e.g. The Welding and Joining Society, Oil and Colour Chemists and NACE, to name a few, with whom we maintain close ties. These meetings take place in London, Aberdeen, Birmingham in the North West, North East of the UK and in Yorkshire.

Interspersed with these regular meetings are special events both technical and social; in April 2013 ICorr CED, in conjunction with The British Institute of Non Destructive Testing (BINDT), put on a one day symposium in Warrington North West England which addressed monitoring and inspection, this event attracted sixty delegates. In June ICorr London Branch ran a two day conference on offshore cathodic protection covering wind farms, fixed offshore structures and subsea pipeline attracting eighty plus delegates. Both these events were very successful with a range of delegates attending from the UK and overseas all gathering to listen to presentations and networking during breaks between presentations to good effect.

Aberdeen branch in March visited the Intertek laboratories. Intertek microbiologists gave presentations on test techniques and delegates were shown various laboratory test equipment. After a safety brief, delegates were divided into groups and taken to various sections of the laboratory facility where tests like oil condition monitoring, gas composition analysis, hydrocarbon accounting, fractional distillation and corrosion forensics were being performed

In undertaking these events the branches and ICorr as a whole are strongly supported by its sustaining members; it is these members that make the events possible by providing their support and sponsorship allowing us to bring greater awareness of corrosion

and related issues to a wider audience. In expanding this understanding a group of volunteers supported by senior engineers from sponsoring engineering companies have been running a series of materials, corrosion and corrosion awareness presentations for young entrant engineers, the presentations have been underway since January 2013 and will run to a series of six events culminating in November 2013. The subjects being addressed are materials selection, coatings, cathodic protection, welding and Inspection and monitoring. At the end of this series of presentations the participants will prepare case studies on a materials and corrosion related issue and present this to a group of senior industry experts who will judge each study on its merit and content awarding a prize for the best. ICorr see the involvement of young engineers in materials and corrosion as a must, throughout the world of corrosion experts are aging and retiring, we need to encourage and support new, young talent to enter the industry and join and progress through the learned societies to provide continuity for the future.

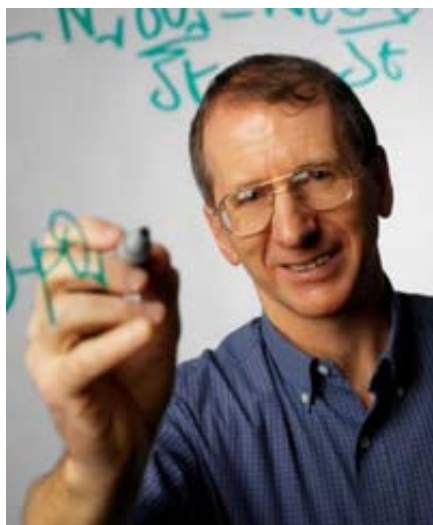
In September the UR Evans Award 2013 will be presented to Prof John Scully (University of Virginia) on Tuesday 3rd September at the 54th Corrosion Science Symposium to be held at Southampton, the award will be made by the President of ICorr, this a memorable occasion which we look forward to.

ICorr continues its membership of the Science Council and now has the ability to award CSci directly and our joint agreement with SEE enables us to award CEng /IEng/Eng Tech, this ability which has again been recently ratified ties in well with the ICorr commitment to education and training, the latter being further invigorated through our new connections to IMechE and ARL. Through such connections ICorr continue to strengthen its position as a learned society and provider of education and training in the UK and overseas.

For more information on our events and activities which are coming up please visit the ICorr website at: <http://www.icorr.org>.

Trevor Osborne
President – Institute of Corrosion

Dr Alan Turnbull, Senior National Physical Laboratory, UK, Fellow in Electrochemistry and Corrosion, elected Fellow of the Royal Society (FRS)



Alan Turnbull, previously nominated Fellow of the Royal Academy of Engineering, has recently been selected to the prestigious British Royal Society based upon his achievements in mathematical modelling of

corrosion processes, particularly the complex interaction between mass transport and chemical and electrochemical reactions in the restricted geometries of cracks, crevices and pits. Supported by innovative *in situ* measurement, this provides the scientific foundation for understanding and predicting the effect of environmental variables on environment assisted fracture and for controlling localised corrosion in a wide range of industrial applications including oil and gas, marine, chemical and nuclear engineering. Alan Turnbull has extended his work to integrated models for hydrogen generation, diffusion and trapping in metals, and to the prediction of the evolution of cracks from corrosion pits. Since joining NPL in 1973, Alan has produced over 200 publications on environment induced cracking of metals and of thermoplastics, on localised corrosion and on modelling of corrosion processes and has been the principal author of eight international standards.

The National Physics Laboratory (NPL) is the UK's National Measurement Institute, and is a world-leading centre of excellence in developing and applying the most accurate measurement standards, science and technology available.

Alan Turnbull is the technical leader of a team of scientists undertaking ground-breaking research in corrosion, fuel cells, nanoscale electrochemistry, catalysis, photovoltaic technology and organic electronics

The "Royal Society of London for Improving Natural Knowledge", known as The Royal Society, is a scientific society founded back in 1660, when it was granted a Royal Charter by King Charles II as the "Royal Society of London". The Society acts as a scientific advisor to the British government and as the UK's Academy of Sciences and funds research fellowships and scientific start-up companies. Its core members are its Fellows: scientists and engineers from the United Kingdom and the Commonwealth, whose selection is based upon having made "a substantial contribution to the improvement of natural knowledge, including mathematics, engineering science and medical science". Fellows are elected for life and are entitled to use the letters "FRS" after their name.

Alan, an Honoray Fellow of UK Member Society ICorr, is a recipient of the Cavallaro Medal, a gold medal instituted by the University of Ferrara which is awarded every two years under the auspices of the EFC, and the U.R. Evans award amongst other notable corrosion prizes. He is a Fellow of EFC's London-based secretariat, the Institute of Materials, Minerals and Mining and was an active member of the IOM3 Corrosion Committee for many years.

Election to the Royal Society is an extremely prestigious honour for Dr. Alan Turnbull and gives recognition and validation to the importance and contribution of corrosion science and research. The European Federation of Corrosion is very proud to have Alan as a member and offers our congratulations for this outstanding nomination.

NEWS FROM THE AUSTRALASIAN CORROSION ASSOCIATION

Supported by a further 19.5% growth in membership last year, The Australasian Corrosion Association Inc (ACA) continues to conduct a large range of technical activities. Below is a review and update of two of its major events; the annual conference and annual international lecture series.



EFC Event No 353: "Corrosion & Prevention 2012 Conference" Melbourne, Australia, 11 – 14 November 2012

The ACA would like to thank all local and international delegates for their attendance and participation at the Corrosion & Prevention 2012 Conference in Melbourne, Australia.



Corrosion & Prevention 2012 which was held on the 11-14 November 2012 at the Crown Conference Centre was the largest ACA stand-alone conference ever conducted attracting 573 delegates including a large international delegation from the UK, Sweden, Germany, China, UAE, USA, India and more.

Delegates were welcomed at the Melbourne Aquarium on the Sunday Night's Welcome Function sponsored by Incospec & Associates Australia. With a live jazz band playing in the background, delegates mingled around the aquarium's Coral Atoll which is a floor to ceiling display of exotic tropical animals and beautiful coral gardens.

The official opening on the Monday morning was chaired by conference convenor Ian Godson and conference technical chair Nick Birbilis which included the starting of the Corrosion Clock by conference co-technical chair Bruce Hinton. Plenary speakers Tony Hughes of CSIRO and Mario Blasco of Dulux Protective Coatings commenced the conferences technical programme before concurrent sessions split the delegates into five separate streams for the duration of the day for 45 papers and the Coatings Technical Group Forum.

At the end of the first day, delegates then gathered into the exhibition hall for drinks and finger food while at the same time, the Young Corrosion Group (YCG) Event sponsored by the Galvanizers Association of Australia took place at the Tonic Bar. This event acknowledged the recipients of the various ACA Conference Scholarships.

Graham Sussex presented the PFT Lecture (inaugurated in 1971) on the Tuesday morning which is named in honour of Percival Faraday Thompson (1885-1951) who is recognised as Australasia's pioneer in the science and technology of metallic corrosion and its mitigation. This year's PFT Lecture was attended by Percival's grandson and granddaughter who both reside in Melbourne. The PFT Lecture was followed by Bruce Ackland who presented his paper 'Cathodic Protection – It Never Sleeps' which was also published in the last issue of Corrosion & Materials.

Following morning tea in the exhibition hall (sponsored by Mears Integrity Solutions) delegates had another 32 oral papers to see as well as forums from the Concrete Structures & Buildings, Cathodic Protection and Water & Water Treatment Technical Groups. During afternoon tea, the poster session was held with university students showcasing their research with cash prizes awarded.

Australia's most prestigious ballroom, the Crown's Palladium was the setting for the ACA Annual Dinner & Awards night which was again sponsored by Denso Australia. Australasian President Peter Dove entertained the crowd as MC and with the ACA Awards Convenor Les Boulton announcing the ACA award recipients.

Following little sleep, a strong number of delegates attended the Wednesday plenary presentations from Paul Natishan of the US Naval Research Laboratory and Geraint Williams of Swansea University, UK.

The final 22 papers and the Petroleum & Chemical Processing Industry Technical Group Forum closed off the last day of the conference before the Closing Session and Farewell Function.

A major thank you to Dulux Protective Coatings as major sponsors of the 2012 conference and a further thank you to International Protective Coatings, Jotun, Peerless Industrial Systems and PPG Protective & Marine Coatings for their supporting sponsorships.

“Corrosion & Prevention 2013 Conference”

The ACA now looks forward to the 2013 conference in Brisbane, Queensland (the ‘Sunshine State’) on the 10-13 November and we welcome delegates from around the world to join us in Australia.

The final technical and social programme can be viewed at <http://www.acaconference.com> where delegates can also register.

International Lecture Series

Each year the ACA funds an international guest to present on their area of expertise to members across Australia and New Zealand.

Gerald S. Frankel of the Fontana Corrosion Center, The Ohio State University, USA was the ACA's International Guest Speaker in 2012. Gerald travelled around Australia presenting on ‘Prevention of Corrosion and Cracking of Steel Tanks for Liquid High Level Radioactive Waste’.

In 2013, we welcome **Carol Powell**, Consultant Metallurgist to the Nickel Institute in the UK to share her knowledge and expertise in corrosion issues in the Water and Wastewater Industries.

Carol will speak on the ‘The Nature and Corrosion Resistance of Stainless Steel in the Water Industry’ and ‘Guidelines and Applications in Water and Wastewater Treatment Environments’.

For further information on these events and the ACA, please refer to <http://www.corrosion.com.au> or <http://www.acaconference.com.au>



Fifth International Seminar in the field of Automotive Corrosion

In May 28–29, 2013 the Swedish EFC Member Society Swerea KIMAB conducted their **Fifth International Seminar in the field of Automotive Corrosion**. This event followed four previous seminars organised by Swerea KIMAB between 2000 and 2010. The 2-day seminar took place at Swerea KIMAB's new location in Kista, north of Stockholm where 65 participants from Japan, Korea, Austria, Belgium, USA, UK, France, Germany, Norway and Sweden presented and discussed the hot topics of immediate interest to car manufacturers and automotive materials producers in a scientific programme consisting of 13 lectures. The two days were divided into two overall themes presented corrosion specialists in the automotive industry and R&D sector.

The first day consisted of:

Corrosion testing – from laboratory testing to field Experience covering important topics such as:

- **Keynote: “Findings and Conclusions from Three Decades of Automotive Corrosion Testing”**, Volvo Car Corporation

- *“Field Correlation of Corrosion Tests at Mercedes-Benz Cars”*, Daimler AG
- *“Corrosion Resistance of Automotive Materials – from Laboratory to Field Exposure”*, Swerea KIMAB
- *“Aggressiveness of Countries with Autonomous Sensors”*, Renault
- *“New Proving Ground in Toyota for Whole Vehicle Anti-Corrosion Evaluation”*, Toyota Motor Corporation
- *“Zn-Mg-Al Coated Steel for Automotive Applications – Results from Laboratory and Field Exposures”*, the French Corrosion Institute
- *“Deposit Formation and Corrosion of Metals in Biodiesel Blend B30”*, Swerea KIMAB

The second day revolved around the theme: *New materials and surface treatments in the automotive industry* which dealt with:

- **Keynote: “Continuous Monitoring of Hydrogen Entry into Galvanized Steels and High Strength Steels in Atmospheric Corrosion Conditions”**, Tokyo Institute of Technology and JFE Steel Corporation

- “Corrosion Resistance of Different Metallic Coatings on Press-Hardened Steels”, ArcelorMittal
- “Alternative to Phosphate Pretreatment for Automotive Industry”, PPG Industries France
- “Trends and Challenges with Carbon Fibre Reinforced Polymers”, Scania and Volkswagen
- “Corrosion Protection Development of Bimetallic Joining with CFK-Al” in the Car Body, Audi AG
- “In Situ Infrared Reflection Spectroscopy: Studies of the Initial Atmospheric Corrosion of Zn-Al-Mg Coated Steel” Swerea KIMAB

A sixth International Automotive Corrosion seminar is scheduled for 2016 in Sweden. If you are interested in attending, please contact Margaretha Sonnergaard (margaretha.sonnergaard@swerea.se) for details.



EFC MEMBER SOCIETIES AND AFFILIATE MEMBERS

An updated listing of all of our European and International EFC Member Societies and the EFC Affiliates can be found on our EFC website at:

EFC Member Societies: [http://www.efcweb.org/Who we are/Member Societies](http://www.efcweb.org/Who%20we%20are/Member%20Societies)

Affiliate Members: [http://www.efcweb.org/Who we are/Affiliate Members](http://www.efcweb.org/Who%20we%20are/Affiliate%20Members)

NEWS FROM THE CORROSION ASSOCIATION OF TURKEY



The Corrosion Association of Turkey was founded in 1987 and carries out activities on corrosion education and technical consulting for many corrosion-related entities in Turkey and abroad.

The Association holds its international corrosion symposium every two years, the next of which will be held in September 2014 in Elazig, Turkey, which will be hosted by Fırat University. The Turkish Association also proudly and successfully organised EUROCORR 2012 last year in Istanbul on behalf of the European Federation of Corrosion.

Amongst its many activities, it provides corrosion courses and training regularly to many industrial companies in the automotive, oil, steel, food and brewery business, amongst others. The Association's educational programmes include theory and protection applications in widespread areas such as atmospheric corrosion, marine corrosion, aqueous and high temperature corrosion, concrete corrosion and microbial corrosion. The Association also gives technical support to both national and international companies concerning inhibitor applications, coatings, cathodic protection and many other activities.

In December 2012, the Association ran a five day educational course for 36 young engineers in the automotive industry which concentrated on the basic principles of corrosion, coatings and atmospheric corrosion. In June 2013, it provided technical support to an international company for the assessment of corrosion of tank steel plates which were stored in a coastal area near Sirte, Libya. The photos below show the on-site investigation by scientists assigned by the Association for this particular task.

The Corrosion Association of Turkey publishes its own international periodic journal entitled "*Corrosion*" and has recently published two new books on the topics of corrosion and corrosion protection. These books serve to promote the understanding of theory and basic principles of corrosion and its importance for students, engineers and academics. The overall purpose of all publications produced by the Turkish Association of Corrosion is to encourage research and the study of corrosion and to increase national awareness of corrosion's importance for sustainability.



NEWS FROM THE WORKING PARTIES

EFC WORKING PARTY 13: CORROSION IN OIL & GAS PRODUCTION

WP 13 participates in joint EFC-NACE Meetings

European-based EUROCORR and NACE's annual Corrosion Congress in the USA are prime opportunities for establishing regular international contacts and valuable experience exchange amongst corrosion professionals working in the oil and gas production industries. Two of these highly efficient and effective EFC/NACE joint activities took place between members of EFC Working Party 13's Corrosion in Oil and Gas Production at NACE's "Corrosion 2013" convention this past March in Orlando, Florida resulting in two joint technical exchange meetings:

1. TEG 433X (M. Achour, Chairman) entitled "*Internal Corrosion Monitoring in Oil and Gas Subsea Structures*" where the specific topic of discussion was on the interpretation of in-line inspection results of pipelines, with presentations from two operators and two service providers.

2. TEG 374X (B. Badrak, Chairman) entitled "*Oil and Gas Production Materials Information Exchange*". The presentations focused on the material performance of CRAs under severe environmental conditions with failure case studies.

These two exchange forums were well-attended and valuable in-depth technical discussions were carried out based upon the contents of the informal presentations given during the meetings.

A similar technical exchange with informal presentations will be organised by WP 13 Chair Michel Bonis of TOTAL E&P during WP 13's business meeting at EUROCORR 2013 in Estoril with NACE TEG 374X and TEG 433X chairmen acting as Co-Chairs of the WP 13 sessions on sour service and on corrosion mitigation and monitoring.

EFC WORKING PARTY 15: CORROSION IN THE REFINERY INDUSTRY

Report on EFC Working Party 15's annual Spring meeting

EFC Working Party 15's annual spring meeting entitled "Corrosion in Refineries" took place on the 9th of April 2013 in Paris La Defense where it was generously hosted by Total.

35 participants from Europe and the USA attended the meeting where the main topic of information exchange and discussion was on the corrosion of carbon steel heat exchangers, stress relaxation, cracking (SRC) of stainless steels and advanced monitoring techniques. The update of EFC guideline n°55 "*Corrosion under Insulation*" was discussed as were future publications, collaboration with NACE, and plans for EUROCORRs 2013 & 2014.

In an attempt to further disseminate information of WP 15's activities, an open-access "*Corrosion Failures in Refinery Atlas*" has been posted on the EFC WP15 website. For more information on Working Party 15 "Corrosion in the Refinery Industry" activities and on joining this Working Party, please visit their homepage at:

<http://www.efcweb.org/WorkingParties/WP15.html>

EFC WP 15 would like to express thanks to Total for hosting this meeting in Paris with special thanks to Martin Richez for organising the meeting.

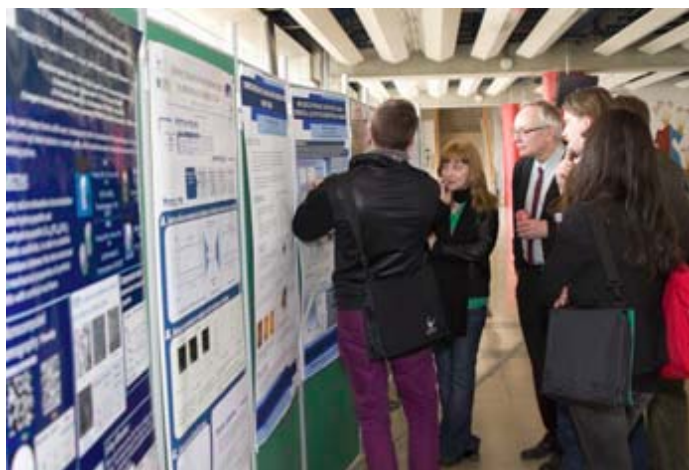
EFC WORKING PARTY 18: TRIBOCORROSION

IRSES TRAINING COURSE ON BIO-TRIBOCORROSION

EC. IRSES-Projects: 295202 & 247659

Field of application: Food quality and safety

Ecole Centrale Paris, France, 11-15 February 2013



This training course, organised by WP 18 Tribocorrosion Chair Prof. Jean-Pierre Celis (Katholieke Universiteit Leuven, Belgium) and Prof. Pierre Ponthiaux (Ecole Centrale Paris, France), was designed to disseminate to future young researchers the major topics addressed in the European Commission's, IRSES (Research Staff Exchange Scheme) Marie-Curie Action Projects 295202 & 247659 on Temadep (Template-assisted deposition of functional materials and devices) and Oil & Sugar. The course provided training on the basics of bio-tribocorrosion (friction, wear, lubrication, coupling of chemical, electrochemical, mechanical and biological effects) with special emphasis on bio-tribocorrosion in the food industry and engineering systems. Its interdisciplinary approach provided trainees with insight into the possible implications of corrosion, tribology, and bio-tribocorrosion in their own research fields or industrial surroundings. The impact and protective actions for prevention of the degradation of materials due to different users' conditions were addressed including: Environmental aspects (State-of-the-art review on surface reactivity and passivity), Mechanical aspects (State-of-the-art review on degradation mechanisms, debris formation, testing procedures), Characterization aspects (Multi-scale

analysis, Electrochemical and Chemical approaches, etc.), Protective aspects of lubrication and lubricants, hardwearing resistant coatings, etc), and Sustainable Growth (Metal particles and health).

The scientific programme consisted of four full days of lectures, and a round table discussion on industrial cases in an academic setting where students and lecturers could meet and exchange questions and answers after each session.



A permanent exhibition of 16 posters completed the scientific programme. During this training event, the 35 masters, doctorate and post-doctorate student participants representing 11 countries were able to discover, through exposure to the large variety themes applicable to bio-tribocorrosion and the kinds of protection utilised in industry, how their own research work can apply to the food sector, and the types of challenges they will face in their future careers. It also provided them with the valuable opportunity to become familiar with the material, mechanical, biological and medical aspects of bio-tribocorrosion.

The course enabled attending students to be in close contact with lecturers who are expert in their fields, and with young researchers involved with research activities which were complementary to their own, allowing them to network with each other for future common endeavours.

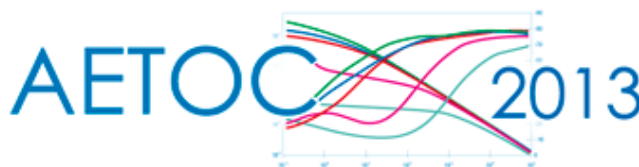
RECENT EFC SPONSORED EVENTS

EFC Event No 359:

“AETOC 2013”

8th International Workshop of Application of Electrochemical Techniques to Organic Coatings

Emmetten, Switzerland, 24-27 April 2013



The 8th edition of the international workshop of **Application of Electrochemical Techniques to Organic Coatings (AETOC)** took place from 24th to the 27th of April 2013 in Emmetten, Switzerland. This workshop was created to fill the need for an intensive exchange and fruitful discussions amongst scientists and engineers who are involved in the investigation of organic coatings using electrochemical techniques.

After the first workshop's kick-off on the Schliffkopf in 1999 (a summit in the northern part of the Black Forest in Germany) this popular workshop has been regularly scheduled as the premier event of EFC's Working Party 14 on Coatings every two years, and has previously been held in Jurata (Poland), Sintra (Portugal), Villard de Lans (France), Bayona (Spain), Grado (Italy) and Mons (Belgium).



The workshop series provides a much needed platform for the presentation and discussion of the newest results in coatings research obtained primarily with electrochemical methods and offers a unique occasion to meet all major experts in the field by combining two topics which are not usually covered in such a focused workshop format during other conferences on coatings or electrochemistry.

This AETOC 2013 Emmetten workshop was organised by WP 14 member Jörg Vogelsang who, at the start of the workshop, took participants on a lab-tour to Sika AG in Zurich. The workshop then continued at the Hotel Seeblick in Emmetten with a wonderful scenic view over the Lake Lucerne (see photo). The relaxed, natural atmosphere encouraged the circa 50 participants to not only listen to the 25 presentations given, but to engage in intense and fruitful discussions following each presentation as well as during the breaks. As a social event a hiking tour was offered including a tasting visit at a cheese producer and finally ending in a restaurant with a traditional Swiss cheese fondue.

At the workshop's conclusion Sebastien Touzain invited everyone to attend the 9th AETOC which is to be held in 2015 in La Rochelle, France. For information on this upcoming workshop contact: stouzain@univ-lr.fr.

EFC Event No 350:

“Beyond Single Oxidants” - an international Workshop

Frankfurt am Main, Germany, 19-21 September 2012

Single oxidant situations are not often present in high temperature industrial environments. Rather, mixtures of oxygen with other species are encountered which make the high temperature corrosion situation more complex than simply the formation of a homogeneous oxide scale on the material surface. Examples of such environments include various combustion atmospheres, e.g. oxy fuel combustion, combustion of biomass, industrial residues or domestic waste, as well as gasification environments with low oxygen partial pressures and high activities of e.g. carbon, sulphur and other constituents. Although significant efforts have been undertaken in recent years to throw further light on such complex conditions, considerable ambiguity and lack of understanding concerning the different mechanisms and how their interactions with one another govern the long term effects on materials necessitates closer attention. The need for further exploration in this area and for predictable component operation in such environments has significantly risen in recent years for the intention to more efficiently use available resources and has instigated increased planning for the employment of hitherto unexploited fuels and supplies in high temperature processes.

In response to this growing demand, last September at DECHEMA in Frankfurt am Main Germany, EFC Working Party 3 “Corrosion by Hot Gases and Combustion Products” Chairman Michael Schütze (photo) led an international workshop aiming to review the current state of knowledge and

understanding in this important area of materials science and to identify the needs for future research.



The workshop followed similar approaches of former workshops in this EFC series of events on high temperature corrosion whereby the topic was first introduced by two overview presentations describing industry’s research in this area. They were followed by detailed discussion of specific aspects under multi-oxidant situations presented via oral and poster presentations. As 2012 was the 75th anniversary of the Pfeil patent on the reactive element effect, the workshop programme was supplemented with two overview papers reviewing this effect for alumina and chromia formers.

85 participants attended the workshop from all over the world including the Americas, Australia, India, Japan and the whole of Europe. Selected papers are currently in the publication process destined for the international journal “*Materials and Corrosion*”.

EFC Event No 357:

“New Achievements in Corrosion Research and Engineering” 16th All-Polish Corrosion Symposium (APCS)

Jastrzab-Poraj, Poland, 28-30 November 2012

The 16th Corrosion Symposium “*New Achievements in Corrosion Research and Engineering*” was held in Conference & Training Centre “*Poraj*” in Jastrzab-Poraj, near Czestochowa, Poland, from 28th to 30th November 2012. More than 70 participants from academic/scientific institutions and from industry, took part in the Symposium. The majority of the participants were from Poland while the guests from abroad came mainly from Western Europe (Switzerland, Germany, Great Britain, Netherland). The official languages of the conference were Polish and English.

54 original contributions were presented during the Symposium (34 oral presentations + 20 posters). Among the oral contributions ten were presented in English, both by Polish and foreign participants.



APCS-2012: Poster Session

The Symposium Proceedings (a subscribed issue of Polish Corrosion Protection Monthly – *Ochrona przed Korozją* (OpK) vol. 55, No 11, 2012) contains 27 full papers and 18 short communications.

The two plenary lectures were presented by Prof. Yong Sun (De Montfort University, Leicester) on „*Plasma surface alloying of stainless steel with nitrogen and carbon*”, and Prof. Maria Sozanska (Silesian University of Technology, Gliwice) on “*Electron probe microanalysis in the study of corrosion processes*”.



APSC-2012: Plenary lecture given by Professor Yong Sun

During the Promotion & Commercial Session two companies presented their business profiles: Lonza AG (Visp, Switzerland) and Texas Institute of Science (Richardson, USA).



APCS-2012: Promotion & Trading Session

All papers (apart from short communications) were reviewed by the referee staff (12 professors). The volume of Symposium Proceedings (No 11/2012 OpK Monthly – 100 pages) was available for participants on registration.

The two English-language sessions among the seven parallel general oral sessions were entitled: *New challenges in Corrosion Research and Materials Protection* (Parts I and II). The keynote lecture of the Part I session was presented by Prof. Henryk Bala (Czestochowa UT) and the keynote lecture of Part II by Prof. Tadeusz Zakroczymski (IPCh PAS, Warsaw).

Two evening social events were included in the Symposium social programme: *Welcome Reception* (28th November) and *Beer Party* (29th November).

A Round Table Discussion (30th November) summarised the debates and showed new suggestions and proposals addressed to Organising

Committee. Disputants appreciated very well the international character of the Symposium. Two forthcoming corrosion events were announced during the Round Table meeting: the 6th *Kurt Schwabe Symposium* (358th EFC Event) September, 2013, which will be held in Krakow and the 21st “*Anticorrosion*” *Conference* to be held in Ustron-Jaszowiec in April 2013.

Participants voiced their satisfaction with the high scientific level of the Symposium and excellent organisation of the event. More information and detailed programme of just closed APCS Symposium Poraj-2012 are available on our website: <http://www.symp-kor-apcs.wip.pcz.pl>. The next APCS Corrosion Symposium is planned to be held in Poraj, 27-29 November, 2013.

Prof. Henryk Bala
APCS Chairman

ADDITIONS TO THE EFC PUBLICATIONS SERIES

A 30% discount off the full listed prices is available to all EFC Member Societies. For further information on this and previously-published EFC Publications books, please see our EFC website: <http://www.efcweb.org>.

EFC 65: CORROSION AND CONSERVATION OF CULTURAL HERITAGE METALLIC ARTEFACTS

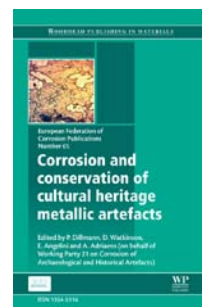
Edited by P. Dillmann Chair, EFC WP 21 Corrosion of Archaeological and Historical Artifacts, CNRS/CEA, France, D. Watkinson, Cardiff University, UK, E. Angelini, Politecnico di Torino, Italy and A. Adriaens, Ghent University, Belgium

- summarises key research on analytical techniques for measuring and analysing corrosion processes
- provides detailed understanding of corrosion processes and corrosion prevention
- discusses on-site monitoring techniques
- an important reference for all interested in conservation of cultural heritage metallic artefacts and archaeologists

The conservation of metallic archaeological and historic artefacts is a major challenge whether they are ancient bronzes or relics of our more recent industrial past. Based on the work of the EFC Working Party 21 "Corrosion of Archaeological and Historical Artifacts", this important book summarises key recent research on analytical techniques, understanding corrosion processes and preventing the corrosion of cultural heritage metallic artefacts.

After an introductory part on some of the key issues in this area, part two reviews the range of analytical techniques for measuring and analysing corrosion processes, including time resolved spectroelectrochemistry, voltammetry and laser induced breakdown spectroscopy. Part three reviews

different types of corrosion processes for a range of artefacts, whilst part four discusses on-site monitoring techniques. The final part of the book summarises a range of conservation techniques and strategies to conserve cultural heritage metallic artefacts.



Corrosion and conservation of cultural heritage metallic artefacts is an important reference for all those involved in archaeology and conservation, including governments, museums as well as those undertaking research in archaeology and corrosion science.

ISBN-13: 978 1 78242 154 2

July 2013, 640 pages, 234 x 156 mm hardback

The direct link to this title is:

<http://www.woodheadpublishing.com/9781782421542>

An e-book version of this title will be available from Woodhead Publishing Online.

Look for this upcoming book in our EFC Series!

EFC 66: UNDERSTANDING BIOCORROSION: FUNDAMENTALS AND APPLICATIONS

WP 10 Microbial Corrosion's Chair Turid Liengen, together with her fellow EFC Working Party experts on Microbial Corrosion, are in the process of producing this new EFC "Greenbook" on this timely topic which will consist of 20 chapters covering all aspects of Microbially Induced Corrosion (MIC)

including an overview, bacteria, biofilms, long-term marine and biocorrosion modeling and several case studies covering biocorrosion of mineral building materials, petro and biodiesels, cooling water systems and treatments, open industrial cooling circuits and steels.

View more books in the EFC series at http://www.maney.co.uk/web/series/efc_series

PREVIEW: EUROCORR 2015 & 2016



NEWS ON EUROCORR 2015

Graz, Austria, 6-10 September 2015

ASMET, the Austrian Society for Metallurgy and Materials, is proud to host the **European Corrosion Congress - EUROCORR 2015**



The conference will take place in **Graz** at the Stadthalle, from **6 to 10 September 2015**.

The **Stadthalle Graz** is an ideal congress venue, located within easy reach of the city centre, hotels are in direct proximity, and it is only 10 km away from the Airport Graz.

The city of Graz has been included in the UNESCO list of World Heritage Sites. It is committed to embracing design and creative industries as a strategic tool for socio economic and cultural development with its strong history of design culture.



Clock Tower

Graz or rather Austria is well known for its Austrian great hospitality and the fantastic white wines, unique pumpkin seed oil, delicious cured meats and exquisite schnaps form the perfect basis for a culture of top class cuisine that pays heed to the regional and nonchalantly integrates the international.

The scientific part is organised by EFC and the framework for the conference by ASMET.

The conference will continue a successful series of corrosion science conferences. The main objective is to foster knowledge transfer and exchange of experiences amongst delegates with academic and industrial backgrounds.



Stadthalle Graz

The main theme of EUROCORR 2015 will be “**Earth, Fire, Water, Air, Corrosion happens everywhere**”. The conference aims to assert the critical role of corrosion science, technology and engineering in extending the lifecycle of materials in different fields of applications (earth, fire, water, air).

The scientific programme will comprise top-class keynote lectures, workshops, oral and poster presentations arranged into sessions referring to the EFC Working Parties specialty areas of corrosion.

ASMET plans to attract exhibitors from industry by offering special incentives to strengthen the part of the conference which is of major interest for the industry: This year's special focus will be on automotive and energy applications.

In the scientific programme a workshop dealing with refractory materials will also be organised.

EUROCORR 2015 will set a high value on increasing the exhibition, where companies and institutes dealing with corrosion protection will have a possibility to showcase their products and services.

ASMET also will offer an extensive social programme to get to know this charming and attractive city and its lovely surroundings.



For instance the wonderful trip “A Dream in White” where you will visit the home of the famous white horses of the Spanish Riding School — the Lipizzaner stud farm in Western Styria, and have the possibility to visit the tasty wine- or apple-route or the fabulous castle route.

Important Dates:

Abstract Submission:	16 January 2015
Notification	10 April 2015
Full Paper Submission	10 July 2015

Contact:

Congress Secretariat
ASMET, Franz-Josef-Str. 18
8700 Leoben, Austria
Tel: +43 3842 45 189
Fax: +43 3842 402 2202
E-mail: eurocorr2015@asmet.at

NEWS ON EUROCORR 2016

Montpellier, France, 11-15 September 2016

Theme: *Advances in linking Science to Engineering*

EFC Member Society CEFRACOR, the French Center for Anticorrosion, will be your host for this EUROCORR 2016 in the beautiful city of Montpellier located on the south coast of France on the Mediterranean Sea. So put a trip to *La belle France* on your corrosion calendar!

Contact:

CEFRACOR
28 rue Saint-Dominique
75007 Paris, France
Fax: +33 1 45 55 90 74
E-mail: info@cefracor.org



Note: If you are a European Member Society and would like to bid to host a future EUROCORR, please contact EFC Frankfurt Office, Ines Honndorf honndorf@dechema.de for details.

EFC WORKING PARTY INDEX

The EFC currently has nineteen active Working Parties (WPs) and one Task Force listed here below, each concerned with a different aspect of the corrosion of metals, alloys and polymer materials. Activities of the EFC Working Parties/Task Force include: collaborative research and testing programmes; organisation of workshops, seminars and conferences; preparation of state-of-the-art reports, guidelines and proceedings for publication as volumes in the EFC Series and the organisation of sessions at EUROCORR.

Membership to the EFC Working Parties is available as of right to all EFC members belonging to both European and International EFC Member Societies or to EFC Affiliate Members, including companies or universities/research centres. Anyone wishing to join one of the Working Parties listed below should apply to the appropriate Working Party Chairman. Please revert to the EFC website at <http://www.efcweb.org/wp> for full details on working party activities or contact EFC Scientific Secretary, Roman Bender (e-mail: bender@dechema.de).

EFC Working Party 1: Corrosion and Scale Inhibition

Chair: Prof. Günter SCHMITT, IFINKOR (Institute for Maintenance and Corrosion Protection Technologies nfpLtd.), Iserlohn, Germany;
E-mail: gue.schmitt@t-online.de

EFC Working Party 3: Corrosion by Hot Gases and Combustion Products

Chair: Prof. Michael SCHÜTZE, DECHEMA-Forschungsinstitut, Frankfurt am Main, Germany;
E-mail: schuetze@dechema.de

EFC Working Party 4: Nuclear Corrosion

Chair: Dr. Damien FÉRON, CEA-Saclay, "Service of Corrosion" SCCME, Gif-Sur-Yvette, France;
E-mail: damien.feron@cea.fr

EFC Working Party 5: Environment Sensitive Fracture

Chair: Dr. Krzysztof WOLSKI, Département PMI, Centre SMS - UMR CNRS 5146, École des Mines de Saint-Etienne, Saint-Etienne, France;
E-mail: wolski@emse.fr

EFC Working Party 6: Surface Science and Mechanisms of Corrosion and Protection

Chair: Prof. Philippe MARCUS, École Nationale Supérieure de Chimie de Paris, Paris, France;
E-mail: Philippe-Marcus@chimie-paristech.fr

EFC Working Party 7: Corrosion Education and Computer Applications

Chair: Prof. Andreas HEYN, Bundesanstalt für Materialforschung und –prüfung, Berlin Germany
E-mail: Andreas.Heyn@bam.de

EFC Working Party 8: Physical-chemical Methods of Corrosion Testing

Chair: Dr. J.M.C. Arjan MOL, Delft University of Technology, Department of Materials Science and Engineering, Surfaces and Interfaces Group, Delft, The Netherlands;
E-mail: j.m.c.mol@tudelft.nl

EFC Working Party 9: Marine Corrosion

Chair: Dr. Ulf KIVISÄKK, AB Sandvik, Materials Technology R&D, Sandviken, Sweden;
E-mail: ulf.kivisakk@sandvik.com

EFC Working Party 10: Microbial Corrosion

Chair: Mrs. Turid LIENGEN, Statoil SAS, TEX FOT MAT COR, Porsgrunn, Norway;
E-mail: turl@statoil.com

EFC Working Party 11: Corrosion of Steel in Concrete

Chair: Prof. Michael RAUPACH, Aachen University, Institute for Building Materials Research, Aachen, Germany;

E-mail: raupach@ibac.rwth-aachen.de

EFC Working Party 13: Corrosion in Oil and Gas Production

Chair: Mr. Michel BONIS, TOTAL E&P, Technology/Corrosion, CSTJF, CA179, Pau, France;

E-mail: Michel.bonis@total.com

EFC Working Party 14: Coatings

Chair: PD Dr.-Ing. Wolfram FÜRBETH, DECHEMA-Forschungsinstitut, Frankfurt am Main, Germany;

E-mail: fuerbeth@dechema.de

EFC Working Party 15: Corrosion in the Refinery Industry

Chair: Dr. François ROPITAL, IFP Energies nouvelles, Direction Chimie et Physico Chimie Appliquées, Département Electrochimie et Matériaux, Solaize, France;

E-mail: francois.ropital@ifpen.fr

EFC Working Party 16: Cathodic Protection

Chair: Mr. Jérôme CROUZILLAC, BAC Corrosion Control, Voisins-le-Bretonneux, France;

E-mail: j.crouzillac@bacfrance.com

EFC Working Party 17: Automotive Corrosion

Chair: Dr. Fouzia HANNOUR, TATA Steel Research Development & Technology, Ijmuiden, The Netherlands;

E-mail: fouzia.hannour@tatasteel.com

EFC Working Party 18: Tribocorrosion

Chair: Prof. Jean-Pierre CELIS, Katholieke Universiteit Leuven, M.T.M., Leuven, Belgium;

E-mail: jean-pierre.celis@mtm.kuleuven.be

EFC Working Party 19: Corrosion of Polymer Materials

Chair: Dipl.-Ing. Jürgen HEINEMANN, TU Darmstadt, Zentrum für Konstruktionswerkstoffe, Darmstadt, Germany;

E-mail: heinemann@mpa-ifw.tu-darmstadt.de

EFC Working Party 20: Corrosion and Corrosion Protection of Drinking Water Systems

Chair: Dr. Johann Wilhelm ERNING, Bundesanstalt für Materialforschung und –prüfung, Fachbereich 6.2: Korrosionsschutz von technischen Anlagen und Geräten, Berlin, Germany;

E-mail: wilhelm.erning@bam.de

EFC Working Party 21: Corrosion of Archeological and Historical Artifacts

Chair: Dr. Philippe DILLMANN, Archaeomaterials and Alteration Prediction Laboratory, SIS2M/LPS CEA/CNRS and IRAMAT LMC CNRS, CEA Saclay, Gif-sur-Yvette, France;

E-mail: philippe.dillmann@cea.fr

In addition:

EFC Task Force on CO₂-Corrosion in CCS-Applications

Chair: Dr. Ralph BÄSSLER, Bundesanstalt für Materialforschung und –prüfung, Fachbereich 6.2: Korrosionsschutz von technischen Anlagen und Geräten, Berlin, Germany

E-mail: ralph.baessler@bam.de

EFC CALENDAR OF FORTHCOMING EVENTS AS OF JULY 2013

Date/Venue	Conference	Contact
8-13 September 2013 Santiago de Querétaro, Mexico	64 th Annual Meeting of the ISE	International Society of Electrochemistry Rue de Sébeillon 9b, 1004 Lausanne, Switzerland Fax: +41 21648 39 75 E-mail: events@ise-online.org Website: http://www.ise-online.org
8-13 September 2013 Seville, Spain	Euromat 2013	Barceló Congressos Euromat 2013 Technical Secretariat Tel: +34 954 22 40 95 E-mail: euromat2013@barcelocongresos.com
16-19 September 2013 Cracow, Poland	6 th Kurt Schwabe Symposium <i>"Surface analysis and material engineering in corrosion science and electrochemical technologies"</i> (EFC Event No. 358)	Prof. Jack Banas Dept. of Chemistry & Corrosion of Metals AGH-University of Science & Technology Cracow, Poland Tel: +48 600 322 831 E-mail: jbs@agh.edu.pl Website: http://home.agh.edu.pl/~schwabe/
16-20 September 2013 Edinburgh, Scotland	Metal 2013	Email: hs.cgoutreach@scotland.gsi.gov.uk
17-20 September 2013 Tara Mountains, Serbia	YUCORR 2013 <i>15th YUCORR International Congress - Meeting Point of the Science and Practice in the Fields of Corrosion, Materials and Environmental Protection</i> (EFC Event No 365)	E-mail: yucorr@sitzam.org.rs Website: http://www.sitzam.org.rs/15YUCORR
29 September - 4 October 2013 La Marana, Bastia, Corsica, France	THEMACORR'2013 <i>CNRS Thematic Summer School on Corrosion Testing, Methods and Monitoring</i> <i>"La mesure de la Corrosion, Méthodologie et recommandations"</i> (EFC Event no. 367)	Bernard Normand INSA, Lyon, France E-mail: bernard.normand@insa-lyon.fr Website: http://www.cefracor.org/

Date/Venue	Conference	Contact
29 September - 4 October 2013 Kloster Banz, Germany	Intermetallics 2013	Conventus Congressmanagement & Marketing GmbH Carl-Pulfrich-Straße 1 07745 Jena, Germany Tel.: +49 3641 311 60 Fax: +49 3641 311 62 41 Website: http://www.dgm-intermetallics.de/
6-9 October 2013 Las Vegas, NV, USA	Titanium 2013 <i>29th Annual Conference and Exhibition of the International Titanium Association</i>	Jennifer Simpson International Titanium Association 2655 West Midway Blvd., Suite 300 Broomfield, CO 80020-7186, USA E-mail: conference@titanium.org Website: http://www.titanium.org/
7-11 October 2013 Asahikawa, Hokkaido, Japan	LongTermCor2013 <i>5th International Workshop on Long Term Prediction of Corrosion "Damage in Nuclear Waste Systems"</i> (EFC Event No. 360)	Damien Féron CEA Director of research Commissariat à l'Energie Atomique et aux Energies Alternatives CEA- Centre de Saclay GIF-SUR-YVETTE Cedex, France E-mail: damien.feron@cea.fr Website: http://www.icorr.or.jp/ltc2013/
27 October - 1 November 2013 San Francisco, CA USA	224th ECS Meeting	The Electrochemical Society 65 South Main Street, Building D Pennington, New Jersey 08534-2839, USA E-mail: ecs@electrochem.org Website: http://www.electrochem.org/meetings/biannual/224/
10-13 November 2013 Brisbane, Australia	Corrosion & Protection 2013	Katherine Webber Australasian Corrosion Association Tel: +61 3 9890 4833 E-mail: kwebber@corrosion.com.au Website: http://www.acaconference.com.au/2013conference
14-15 November 2013 Frankfurt am Main, Germany	Bring On The Heat 2013 <i>Innovative Corrosion Technology - Process Safety and Corrosion - Corrosion Under Insulation - Thermal / Hi-Temp Coatings - Passive Fire Protection</i> (EFC Event No. 370)	BOTH Office c/o DECHEMA e.V. Theodor-Heuss-Allee 25 60486 Frankfurt am Main, Germany Tel.: +49 69 7564 278 Fax: +49 69 7564 418 E-mail: both@dechema.de Website: http://www.efcweb.org/both

Date/Venue	Conference	Contact
27-29 November 2013 Jastrzab/Poraj (near Czestochowa), Holiday and Recreation Centre Lesna Radosc	17th All-Polish Corrosion Symposium <i>„New Achievements in Corrosion Research and Engineering”</i> (EFC Event No. 369)	Prof. Henryk Bala Czestochowa University of Technology, Department of Chemistry Al. Armii Krajowej 19 42-200 Czestochowa, Poland Fax: +48 34 3250602 E-mail: hbala@wip.pcz.pl Website: http://www.symp-kor-apcs.wip.pcz.pl/index_eng.html
1-6 December 2013 Boston, Massachusetts, USA	MRS Fall Meeting 2013 <i>2013 Fall Meeting & Exhibit of the Materials Research Society</i>	Materials Research Society 506 Keystone Drive, Warrendale, PA, 15086-7537, USA Tel: +1 724 779.3003 Fax: +1 724 779.8313 E-mail: info@mrs.org Website: http://www.mrs.org/fall2013/
2-6 December 2013 Las Vegas, USA	Thermec 2013 <i>International Conference on Processing & Manufacturing of Advanced Materials Processing, Fabrication, Properties, Applications</i>	Website: http://www.thermec.org/template3s/index.php
2014		
9-13 March 2014 San Antonio, TX, USA	Corrosion 2014/NACE Conference and Exposition EFC endorsed Event	CaLae McDermott Tel: +1 281 228 6263 E-mail: calae.mcdermott@nace.org Website: http://www.nace.org
11-16 May 2014 Orlando, FL, USA	225th ECS Meeting	The Electrochemical Society 65 South Main Street, Building D Pennington, New Jersey 08534-2839, USA E-mail: ecs@electrochem.org Website: http://www.electrochem.org/meetings/biannual/225/
24-26 June 2014 Antibes Juan-les-Pins, France	6th Cathodic Protection Days <i>"Theory and applications on land, seawater, concrete and inner surfaces"</i> (EFC Event No. 363)	CEFRACOR 28 rue Saint-Dominique 75007 Paris, France Tel: +33 1 4705 3926 Fax: +33 1 4555 9074 E-mail: PCRA2014@cefracor.org Website: http://www.cefracor.org/PCRA2014/

Date/Venue	Conference	Contact
31 August-5 September 2014 Lausanne, Switzerland	ISE Annual Meeting 2014 <i>65th Annual Meeting of the International Society of Electrochemistry</i>	International Society of Electrochemistry Rue de Sébeillon 9b, 1004 Lausanne, Switzerland Fax: +41 21648 39 75 E-mail: events@ise-online.org Website: http://annual65.ise-online.org/
8-12 September 2014 Pisa, Italy	EUROCORR 2014 <i>"Improving materials durability: from cultural heritage to industrial applications"</i> (EFC Event No. 364)	Associazione Italiana di Metallurgia (AIM) Federica Bassani P. le R. Morandi, 2 20121 Milan, Italy Tel: +39 0276021132 Fax +39 0276020551 E-mail: eurocorr2014@aimnet.it Website: http://www.eurocorr2014.org/
5-10 October 2014 Cancun, Mexico	226th ECS Meeting	The Electrochemical Society 65 South Main Street, Building D Pennington, New Jersey 08534-2839, USA E-mail: ecs@electrochem.org Website: http://www.electrochem.org/meetings/biannual/fut_mtgs.htm
2-6 November 2014 Jeju Island, Korea	19th International Corrosion Congress (ICC) <i>"Corrosion Control, Contributing to a Sustainable Future for All"</i>	The Corrosion Science Society of Korea Tel: +82-2 539 5869 Fax: +82-2 555 4579 E-mail: icc2014.korea@gmail.com Website: http://www.icc-net.org/
24-28 November 2014 Le Corum, Montpellier, France	Matériaux 2014	Pascale Bridou Buffet FFC 28 rue Saint-Dominique 75007 Paris, France Tel: +33 1 5359 0218 Fax: +33 1 4555 4033 E-mail: pascale.bridou@wanadoo.fr Website: http://www.ffc-asso.fr/thematique-chimie/colloques-ffc/materiaux-2014.html

Date/Venue	Conference	Contact
2015		
15-19 June 2015 Frankfurt am Main, Germany	ACHEMA 2015	DECHEMA Ausstellungen GmbH Theodor-Heuss-Allee 25 60486 Frankfurt am Main, Germany Website: http://www.achema.de
6-10 September 2015 Graz, Austria	EUROCORR 2015 "Earth, Fire, Water, Air, Corrosion happens everywhere" <i>EFC Event (No. to be confirmed)</i>	ASMET Gregor Mori Franz-Josef-Str. 18 8700 Leoben, Austria E-mail: Eurocorr2015@asmet.at Website: http://www.eurocorr2015.org
2016		
11-15 September 2016 Montpellier, France	EUROCORR 2016 "Advances in linking Science to Engineering" <i>EFC Event (No. to be confirmed)</i>	CEFRACOR 28 rue Saint-Dominique 75007 Paris, France Fax: +33 1 45 55 90 74 E-mail: info@cefracor.org

CORROSION COURSES

An updated listing of corrosion courses can be found on our EFC website at:
<http://www.efcweb.org/Events/Courses>

CONTACT DETAILS FOR THE EFC SECRETARIATS

Willi Meier
Europäische Föderation Korrosion
DECHEMA e.V.
Theodor-Heuss-Allee 25
60486, Frankfurt am Main
Germany
EFC Secretary: Ines Honndorf
Tel: +49 69 7564 209; Fax: +49 69 7564 299
E-mail: honndorf@dechema.de

François Rocquet
Fédération Européenne de la Corrosion
Fédération Française pour les sciences
de la Chimie (FFC)
28 rue Saint-Dominique
75007 Paris
France
EFC Secretary: Pascale Bridou Buffet
Tel: +33 153 590 218; Fax: +33 145 554033
E-mail: pascale.bridou@wanadoo.fr

Bernard A. Rickinson
European Federation of Corrosion
The Institute of Materials, Minerals and Mining
1 Carlton House Terrace
London SW1Y 5DB
United Kingdom
EFC Honorary Treasurer: Ray Milbank
Tel: +44 207 451 7356; Fax: +44 207 839 2289
E-mail: ray.milbank@iom3.org

Editor: EFC Public Relations Offices: Juliet Ippolito, Spanwise snc, Via Michelangelo Schipa 61, 80122 Naples, Italy; E-mail: juliet@unina.it

Please address all general enquiries to: info@efcweb.org