

# EFC NEWSLETTER

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



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## EUROCORR 2015

Graz, Austria, 6-10 September 2015 (EFC Event No 391)

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 September 6<sup>th</sup> to the 10<sup>th</sup>, 2015.

Graz has a population of 270,000 and is the second largest city in Austria and the capital of the federal state of Styria. Its "Old Town" is one of the best-preserved city centres in Central Europe, well known for its architecture and its southern Austria flair. The city of Graz has been included in the UNESCO list of World Heritage Sites. It is committed to embracing design and the creative industries as a strategic tool for socio-economic and cultural development with its strong history of design culture.

Graz hosts 6 universities with 44,000 students and was nominated the cultural capital of Europe in 2003. Graz is well known for its great hospitality and its fantastic white wines, unique pumpkin seed oil, delicious cured meats and exquisite schnaps which form the perfect basis for a culture of top class cuisine that pays heed to the regional and nonchalantly integrates the international.

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Clock Tower



Town Hall

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



Stadthalle Graz

The scientific content of EUROCORR 2015 is jointly formulated by the EFC and ASMET.

EUROCORR 2015 will continue in the high calibre tradition of past EUROCORR corrosion science conferences whose main objective is to foster knowledge transfer and exchange of experiences amongst delegates with academic and industrial backgrounds.

The main theme of EUROCORR 2015 will be “**Earth, Water, Fire, 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 all fields of applications.

The scientific programme will be comprised of top-class plenary lectures, workshops, oral and poster presentations articulated into sessions led by the EFC’s 20 EFC Working Parties specialty areas of corrosion.



House of art

ASMET is working hard to attract exhibitors from industry via special incentives to strengthen the aspect of the EUROCORR conference which is of major interest to industries working in corrosion with a special focus on automotive and energy applications.

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

ASMET also will offer a great social programme for guests to get to know the charming and attractive city of Graz and its lovely surroundings.



Castle Eggenberg

Amongst the wonderful trips will be “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, or the possibility to visit the tasty Austrian wine- or apple-route or the fabulous castle route.

**Important Dates:**

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

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## LETTER FROM THE EFC PRESIDENT

*To all the members of the European Federation of Corrosion*

**Dear member,**

As President of the largest corrosion organisation in Europe with representation from 28 national societies from 22 European countries and an increasing number of international members from outside of Europe, I am pleased to announce that we are also attracting companies and research organisations as affiliate members who are involved in the areas of corrosion, education, training, and maintenance within their own national territories.

We recognise that our most valuable asset is our Member Societies which, spread as they are throughout Europe and other continents, are the core of who we are. We are working to ensure the best pan-European representation and exposure for all of our members in order to leverage the support that the EFC, as a Federation, can give across the whole European continent.

I would like to remind you once again that all 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 on-going activities of our 20 Working Parties of corrosion specialty areas, reduced attendance fees at EFC events including, of course, EUROCORR, opportunities to publish with like-minded professional peers, as well as discounted rates on the EFC “Greenbook” Series

Our annual **EUROCORR** conference, the EFC’s flagship event, is now the most



important and attended annual corrosion event in Europe, consistently attracting more than 800 participants with an ever-increasing number coming from outside of Europe as corrosion professionals wisely recognise the significant role that EUROCORR plays for the corrosion community at large.

This dynamic and powerful mix of science and technology present within our Federation and at EUROCORR each year is what makes the EFC unique; dependent, as we are, upon mostly volunteer labour and working in a spirit of cooperation, sharing and exchange, together with our knowledgeable and talented Working Party Chairs, our Committees, our 3 offices and staff.

With this mission in mind, I look forward to your increased participation in our many EFC activities and to hosting you personally at EUROCORR 2014 in my beautiful country of Italy this **8 - 12 of September** in Pisa, which has provided inspiration to so many great scientific minds.

Sincerely yours,

*Lorenzo Fedrizzi*

## PAST EUROCORR CONFERENCES 1956 – 2014

*We at the EFC are extremely proud of the longevity of our EUROCORR conference series which has consistently and continuously served the world corrosion community since 1956.*

### HOW MANY OF THESE EUROCORR CONFERENCES HAVE YOU BEEN TO?

<b>1956</b>	1 <sup>st</sup> European Corrosion Congress (in frame of Rassemblement européen des arts chimiques)	Paris, France	18 - 24 November
<b>1958</b>	2 <sup>nd</sup> European Corrosion Congress (in frame ofACHEMA)	Frankfurt am Main, Germany	30 May - 8 June
<b>1963</b>	3 <sup>rd</sup> European Corrosion Congress	Brussels, Belgium	4 - 7 Juni
<b>1969</b>	4 <sup>th</sup> European Corrosion Congress	Amsterdam, The Netherlands	7 - 14 September
<b>1973</b>	5 <sup>th</sup> European Corrosion Congress	Paris, France	24 - 28 September
<b>1977</b>	6 <sup>th</sup> European Corrosion Congress	London, United Kingdom	19 - 23 September
<b>1981</b>	7 <sup>th</sup> European Corrosion Congress	Mainz, Germany	6 - 11 September
<b>1982</b>	EUROCORR '82	Budapest, Hungary	18 - 22 October
<b>1985</b>	8 <sup>th</sup> European Corrosion Congress	Nice, France	19 - 21 November
<b>1987</b>	EUROCORR '87	Karlsruhe, Germany	6 - 10 April
<b>1988</b>	EUROCORR '88	Brighton, United Kingdom	3 - 5 October
<b>1989</b>	9 <sup>th</sup> European Corrosion Congress	Utrecht, The Netherlands	2 - 6 October
<b>1991</b>	EUROCORR '91,	Budapest, Hungary	21 - 25 October
<b>1992</b>	EUROCORR '92	Espoo, Finland	31 May - 4 June
<b>1993</b>	10 <sup>th</sup> European Corrosion Congress	Barcelona, Spain	5 - 8 July
<b>1994</b>	EUROCORR '94	Bournemouth, United Kingdom	30 October - 3 November
<b>1996</b>	EUROCORR '96	Nice, France	24 - 26 September
<b>1997</b>	EUROCORR '97	Trondheim, Norway	22 - 25 September
<b>1998</b>	EUROCORR '98	Utrecht, The Netherlands	28 September - 1 October
<b>1999</b>	EUROCORR '99	Aachen, Germany	30 August - 2 September
<b>2000</b>	EUROCORR 2000	London, United Kingdom	10 - 14 September
<b>2001</b>	EUROCORR 2001	Riva del Garda, Italy	30 September - 4 October
<b>2003</b>	EUROCORR 2003	Budapest, Hungary	28 September - 2 October
<b>2004</b>	EUROCORR 2004	Nice, France	12 - 16 September
<b>2005</b>	EUROCORR 2005	Lisbon, Portugal	4 - 8 September
<b>2006</b>	EUROCORR 2006	Maastricht, The Netherlands	25 - 28 September
<b>2007</b>	EUROCORR 2007	Freiburg, Germany	9 - 13 September
<b>2008</b>	EUROCORR 2008	Edinburgh, United Kingdom	7 - 11 September
<b>2009</b>	EUROCORR 2009	Nice, France	6 - 10 September
<b>2010</b>	EUROCORR 2010	Moscow, Russia	13 - 17 September
<b>2011</b>	EUROCORR 2011	Stockholm, Sweden	4 - 8 September
<b>2012</b>	EUROCORR 2012	Istanbul, Turkey	9 - 13 September
<b>2013</b>	EUROCORR 2013	Estoril, Portugal	1 - 5 September
<b>2014</b>	EUROCORR 2014	Pisa, Italy	8 - 12 September

## EUROPEAN CORROSION MEDAL WINNER

### Professor Herman Terryn at EUROCORR 2014 Pisa



**Herman Terryn** was chosen for the prestigious EFC Award by his peers based upon his clear vision towards the industrial relevance and needs drawn from the field of corrosion, electrochemistry and surface science and their relation to materials.

He is recognised as a pioneer in the frontiers of corrosion and surface science as he adeptly cross references combined activities in the areas of corrosion technology, functional surface engineering, surface characterisation and electrochemical characterisation.

Throughout his career he has been extensively involved in new research trends in electrochemistry and (nano) surfaces as directed towards the creation and measurement of specific functional properties in accordance with application, surface and electrochemical analysis at submicron and nano-scale and towards modelling and simulation of processes.

Herman Terryn exemplifies the qualities of an outstanding, dedicated natural leader who possesses personal integrity and a thoughtful communicative style. His colleagues who nominated him for the European Corrosion Medal are deep-seated admirers of his creativity, giving spirit and inspiration as well as the enthusiasm that he radiates even under demanding and pressing circumstances. He not only makes extraordinary daily contributions to all research that he is involved in but is also very willing and capable of sharing his talents, keen-eye and expertise with others across different scientific disciplines. His extraordinary capability is that of combining his excellent world-class fundamental scientific background with a generous spirit and easy communicative style which have served to develop

his leadership and skills beyond that of other senior scientists in his field of expertise.

He is considered a top senior academic at the Department of Materials and Chemistry at the Vrije University in Brussels, Belgium where he is a full Professor and an essential part of the Research Group for Electrochemical and Surface Engineering. He is also a part-time Professor at the Corrosion Technology and Electrochemistry Division at TU Delft, in the Netherlands, and adjunct Professor on the Science Faculty at the Université Libre de Bruxelles, Belgium. For the duration of his academic and research career he has made a substantial contribution to the very important need for new generations of corrosion scientists and engineers, and to the benefits of society as an experienced and committed educator in the field of corrosion science.

At the Vrije University he is Chairman of the board of the Research Council for the Faculty of Engineering, Vice President of the PhD Commission of the Faculty of Engineering, and President of the Research Group of Materials and Surface Science and Engineering at the University of Ghent-VUB.

He is also Chairman of the Cluster “Durability of Materials” at the Materials Innovation Institute (M2i) The Netherlands, a Member of the Board of SIM “Strategic Initiative Materials” Flanders, a Member of the scientific Flemish Research Communities FWO:

- 1) Micro- and surface analysis in material science
- 2) Surface Modification
- 3) Nanoparticles and Nanowires Region.

He has published 293 scientific papers on topics covering surface science, surface treatments, nano surface layers, electrochemistry, corrosion and protection and delivered over 70 keynote & invited lectures and over 370 conference contributions. He was a Methusalem Grant holder for 7 years with the research project “Design and Prediction of Nanostructured Metal Surfaces” (NANOMET).

Prof. Terryn will be awarded his **European Corrosion Medal** by the EFC President at **EUROCORR 2014’s opening session in Pisa.**

## 2014 CAVALLARO MEDAL WINNER

### Professor Mario Ferreira at EUROCORR 2014 Pisa



This year's winner of the University of Ferrara's **Cavallaro Medal** is **Professor Mario Ferreira**, nominated by his peers in recognition for his lifetime contribution to corrosion science. Mario is a Full Professor at the Department of Materials and Ceramic Engineering (DEMaC) at the

University of Aveiro, Portugal.

Mario Ferreira received his PhD in Corrosion Science and Engineering from the University of Manchester Institute of Science and Technology (UMIST), United Kingdom, and his undergraduate degree in Chemical Engineering from the Instituto Superior Técnico (1971), Portugal.

Back in 1981 he founded the now known as "Corrosion and Environmental Effects Group" now based at Institute of Science and Engineering of Materials and Surface (ICEMS) in Lisbon, where he was a founding member. At the University of Aveira, he started another corrosion group "Surface Engineering and Corrosion Protection" within an associated laboratory at the Centre for Research in Ceramics and Composite Materials (CICECO) which is the largest Portuguese institute in the field of materials science and engineering.

Professor Ferreira has made substantial contributions to many areas of corrosion. One focus throughout his career as a researcher has been to create environmentally-friendly and effective coatings for protection against metallic corrosion. He is the co-author of 10 book chapters, 5 patents and has 226 publications in top scientific journals, amongst which his publications on self-healing coatings are much cited. He has been responsible for 55 R&D projects both as coordinator and representing the Portuguese participation, co-financed by several national entities including the European Commission (namely Framework Programmes) and NATO.

He has been lecturing and supervising on corrosion at the graduate and post-graduate levels for the past 40 years and is extremely active in international scientific societies including the EFC. He is well known internationally and has chaired numerous international corrosion congresses, sits on many international advisory boards and has lectured extensively including the deliverance of 12 keynote and plenary lectures at national and international corrosion congresses.

The **Cavallaro Medal**, instituted by the University of Ferrara, Italy, is awarded every 2 years to honour the memory and work accomplished by Prof. Leo Cavallaro, founder of the "Aldo Dacco" Study Centre on Corrosion, an annexe of the Institute of Chemistry of Ferrara. The gold medal is awarded to a particularly distinguished scientist recognised for his or her activity and publications in the field of corrosion activity.

## MEMBER SOCIETY NEWS AND PROFILES

### EVENT PRODUCTION S.R.O. / FLEMING EUROPE, SLOVAKIA

**Fleming Europe**, headquartered in Slovakia, has been in business since 2004 and operates in 3 countries through its 400 employees comprised of 34 nationalities. Its mission is to provide a pan-European networking channel linking specialist business authorities and to provide the necessary means to encourage decision makers to share their experiences with their peers and benefit from insights on industry trends as applicable to their businesses, while providing them with strategic knowledge, information and opportunity in a fast-changing business environment via the distribution of cutting-edge information. This is done through the organisation of over 100 events per year and the formation of educational courses, Masterclasses and specialty training courses in the energy, oil and gas, aerospace, defense, pharma, finance and telecommunications sectors.

Recent corrosion-related courses have been organised by Fleming in the areas of: Produced Water Injection and MIC, Corrosion Under Insulation Training and the 7<sup>th</sup> Annual Pipeline Integrity Management Forum this past February in Berlin. Future related events include the Eastern and Southern African Gas Monetisation Summit, Succession Planning for the Oil & Gas Industry, Advanced Risk Based Inspection for Ageing Plants: Masterclass Training, Corrosion Management Masterclass and their 8<sup>th</sup> Annual Pipeline Integrity Management Forum next February in London, United Kingdom. For a complete listing of all of Fleming's events and training activities contact:

<http://www.flemingeurope.com/>

The EFC welcome Event Production s.r.o./Fleming Europe as our newest member and the opportunities it will provide to strengthen the link between corrosion science and industry.

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### NEWS FROM SPM – THE PORTUGUESE SOCIETY FOR MATERIALS

#### NEW “CORROSION AND PROTECTION OF MATERIALS” TECHNICAL DIVISION ESTABLISHED

In 2013 the Portuguese EFC Member Society SPM created a new division entitled: “Technical Division on Corrosion and Protection of Materials”. The division was established to focus specifically on the “Corrosion and Corrosion Protection” activities of SPM and will be promoted via on-going publications in the Portuguese Journal of Corrosion and Protection of Materials, “Corrosão e Protecção de Materiais.” SPM's newly created “Technical Division on Corrosion and Protection of Materials” was first presented to SPM members and to the general public on the 24<sup>th</sup> April 2013 in a public session on the occasion of “Corrosion Awareness Day”.

The inaugural session included, amongst others, a lecture on “Corrosion” by Prof. Alda Simoes (EFC STAC member), a presentation on the 50<sup>th</sup> anniversary of the “Portuguese Journal on Corrosion and Protection of Materials”, and an announcement of the upcoming EUROCORR 2014 congress in Pisa, presented by Prof. Joao Fernandes, a member of the EFC Board of Administrators.

In 2013 a survey was launched on the “National Needs for Training and Education on Corrosion and Corrosion Protection”. Based on the results of this survey, a Corrosion Course was held. This was the first of a number of courses to be held on Corrosion and Corrosion Protection.

It took place in Lisbon on 3 to 5 June 2014, with students from several fields such as the coatings industry, cathodic protection, civil construction, the naval industry and the electricity sector.



Participants in SPM's Corrosion Course

The topics covered ranged from the corrosion fundamentals to corrosion protection techniques, with

emphasis on surface preparation and application of coatings as well as an introduction on standardisations. Practical laboratory sessions and an industrial visit were also included as part of the course. Further editions of the course are being planned for 2015.

The website for the new technical corrosion division has been launched:

<http://www.spmateriais.pt/corrosaoe protecao/>

and includes a page describing EFC activities. A members' link to the restricted pages of EFC will also be provided within the coming months.

The division is already planning to commemorate next year's "Corrosion Awareness Day 2015" on the 24<sup>th</sup> April in a public session at the Portuguese National Engineers' association "Ordem dos Engenheiros", focusing on the topic "Corrosion in the Marine Environment".

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## NEWS FROM THE EFC AFFILIATE MEMBER, DEPARTMENT OF ELECTROCHEMISTRY, CORROSION AND MATERIALS ENGINEERING, GDAŃSK UNIVERSITY OF TECHNOLOGY

### GDAŃSK UNIVERSITY OF TECHNOLOGY ESTABLISHES NEW BACHELORS & MASTERS DEGREE PROGRAMMES IN CONSERVATION AND DEGRADATION OF MATERIALS

**ERRATA CORRIGE:** *In the previously published version of our September 2014 EFC Newsletter no. 22, we erroneously stated that Gdąnsk University of Technology was a member of PSK, the Polish Corrosion Society. Gdąnsk University of Technology is not, in fact, a member of the PSK and has no affiliation with the PSK.*

The EFC Affiliate Member, Department of Electrochemistry, Corrosion and Materials Engineering Chemical Faculty of Gdąnsk University of Technology in Poland, has announced the establishment of a new 3.5 year Bachelor of Science degree programme and a 5 year Masters of Science degree programme entitled "Conservation and Degradation of Materials" to begin in the 2015 academic year. This first of its kind, the programme will be devoted solely to the study of courses pertaining to materials science, corrosion science, anticorrosion protection and degradation prevention. The University of Gdąnsk strongly believes that the important theme of the "Conservation and Degradation of Materials" is the answer to the

demands of the Polish, and the European markets, which still suffer from a shortage of qualified staff in the corrosion field. Graduates of this programme will be made familiar with: mechanisms of corrosion of steels and alloys, mechanisms of thermal-, photo- and biodegradation of polymers, causes of degradation of wood, glass and ceramic materials, corrosion of concrete and reinforced concrete, anticorrosion protection technologies dedicated to steels, metal alloys, polymers, wood, glass, composites and other construction materials. Moreover, they will be acquainted with the methods and techniques of conservation and protection of works of art and archaeological artefacts. These degree courses are specifically designed to prepare



graduates to acquire international certificates for paint coatings inspectors and cathodic protection inspectors. Additionally, graduates will be supported with knowledge of economics and corporate business practices, including a working professional knowledge of the English language.

The idea and syllabus of the "Conservation and Degradation of Materials" Bachelors and Masters degree programmes was created by the Department of Electrochemistry, Corrosion and Materials Engineering at the University of Gdańsk, whose extensive staff experience will provide the core courses and the cornerstone of the courses of study. There will be two-stage studies including the Bachelor of Science degree programme for 60 graduates and the Masters of Science degree programme for 20 graduates. The B.Sc. level will encompass the following groups of subjects: fundamental and general subjects (including mathematics, physics, foreign language), obligatory line of studies-oriented subjects (including organic chemistry, inorganic chemistry, physical chemistry, materials failure, corrosion of metals and alloys, metallography, non-destructive testing, etc.), optional subjects (including nanotechnology, organic coatings, concrete and reinforced concrete, wood science, environmental protection, etc.), art subjects (museology, material history of Gdańsk) and economic subjects (management, banking and finances).

The B.Sc. level graduates will receive their Certificate of Training for Surveyors of the Seagoing Ships Paint Coat Supervision as well as a Certificate of Training for Cathodic Inspector Level 2 issued by the Republic of Poland. The M.Sc. level will include obligatory subjects (including corrosion, corrosion monitoring, electroplating, modification of corrosion environments, digital measurements, coatings, electrochemical protection, etc.), optional subjects (including nanoscopy, physical chemistry of solids, surface chemistry, corrosion of polymers, etc.), art subjects (archaeology and painting) and economic subjects (economy, economy law). All the subjects at the M.Sc. level will be delivered in English.

Gdańsk University of Technology's 'Conservation and Degradation of Materials' degree programmes are already perceived as a very promising educational programme fulfilling a marked gap in the much needed corrosion sector to be filled by many foreseen economic, industrial and scientific societies in Poland.

For enquiries on these degree programmes contact:

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Corrosion and Materials Engineering  
Chemical Faculty  
Gdańsk University of Technology, Poland  
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## NEWS FROM THE INSTITUTE OF CORROSION UK



The Institute of Corrosion in the UK has been in existence for in excess of 50 years having celebrated its 50<sup>th</sup> anniversary in 2009. In this time much has been achieved and as we enter our 55<sup>th</sup> year we are in a strong position and moving to meet the requirements of an expanding membership. The Institute has successfully completed a number of conferences and seminars over the recent past and its members have presented papers and keynote addresses at other conferences and events. Most recently we successfully held our conference entitled "Energy Security, Corrosion Matters" in London last

month, this was well attended. The keynote speech was given by Lord Oxburgh, President of the Carbon Capture & Storage Association. There were a range of topics related to energy and corrosion delivered over two days by a range of industry expert speakers. The Corrosion Engineering Division of ICorr held a one day seminar this year at the Leeds Royal Armoury where technical meetings were held against a backdrop of papers covering coatings and conservation among other corrosion related topics which were presented by members and visitors, another successful event.

ICorr provides its members with a number of events throughout the year organised directly by ICorr staff or through the branches and branch committees.

We plan this year to re-run our Young Engineer Programme, this event runs over a period of 9 to 10 months with industry personnel presenting modules related to materials and corrosion, the programme was run in 2012-2013 with a very successful case study presentation phase held at the Royal Overseas League in London where large number of members and guests listened to the programme attendees present their cases for judging by a panel of materials and corrosion engineers drawn from industry. The outcome was very closely contested but a group of graduate engineers from various engineering houses in the London area took first place, all participants in the programme were awarded ICorr certificates to mark their hard work, achievement and to recognise the contribution they had made throughout the programme.

We continue to expand our sustaining membership base in the UK and around the world, our professional membership is also rising and ICorr continue to offer chartered engineer status as well as

chartered scientist through our association with other professional bodies.

ICorr painting, fireproofing, galvanising and cathodic protection courses continue to be delivered with take up increasing on a regular basis. Our course delivery partner ARL have now been taken over by the Institute of Mechanical Engineers (IMechE), IMechE have a large worldwide membership which is reported to be in excess of 100,000 members.

ICorr continues to be successful and vibrant with plans to improve training and the services offered to our members and to bring more to the membership through our work within the institute and through our association with other learned bodies such as EFC.

I look forward to meeting you in Pisa at EUROCORR 2014.

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

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**U.R. Evans Award for lifetime achievement to be presented to Dr Peter L. Andresen**  
55<sup>th</sup> Corrosion Science Symposium  
Manchester, 29-30 September 2014

A highlight of the 55<sup>th</sup> Corrosion Science Symposium organised and run by the Corrosion Science Division (CSD) of The Institute of Corrosion (ICorr), which will be held this year at the Museum of Science and Industry in Manchester in the UK this coming September, will be the presentation of the U.R. Evans award - the premier award of ICorr - to **Dr Peter L. Andresen** of GE Global Research. Peter Andresen received his B.Sc., M.Sc. and Ph.D. in Materials Science from Rensselaer Polytechnic Institute. He is renowned for his expertise in corrosion and the environmental effects on mechanical properties and integrity of materials. Throughout his career, his research has focused on corrosion and environmental fracture of iron- and nickel-base alloys under conditions of interest to the energy industries.

He has served on many expert panels for the nuclear industry related to degradation by corrosion and stress corrosion cracking of stainless steels and other structural materials, and on all four major international efforts on Proactive Materials Degradation and many expert panels convened by EPRI. He serves on the organising committee and as technical chair of the International Cooperative Group on Environmentally Assisted Cracking and the International Conferences on Environmental Degradation in Nuclear Power Systems – Water Reactors. He is a consultant/advisor to several national labs and universities and has been on several DOE review panels, including a long term role on the highest level Consulting Board for Yucca Mountain Waste Disposal Project in the U.S.

The prestigious ICorr award takes the form of a full size engraved sword symbolising the fight against corrosion and will be presented by ICorr president, Trevor C. Osborne. The presentation is open to all.

The University of Manchester's Science Symposium is an annual meeting for students and researchers working in all areas of Corrosion Science and Engineering and provides an informal event at which young researchers and others can present their work. In recent years participants from outside the UK have begun to attend. The Lionel Shreir prize is presented annually for the best presentation by a young author.

The first Corrosion Science Symposium was held 55 years ago, prior to the formation of the Corrosion and Protection Association (CAPA) which became the

Corrosion Science Division of EFC Member Society ICorr.

The first recipient of the U.R. Evans award was T.P Hoar in 1976.

Honourees in the past were:

2008 Prof. D Young (University of New South Wales)

2009 Prof. C Leygraf (KTH, Stockholm)

2010 Prof. P Marcus (CNRS, Paris)

2011 Prof. G Frankel (Ohio State University)

2012 Prof. M Schütze (DECHEMA, Frankfurt)

2013 Prof. J Scully (University of Virginia)

## NEWS FROM THE AUSTRALASIAN CORROSION ASSOCIATION - ACA

Supported by a 12.5 % growth in membership last year, The Australasian Corrosion Association Inc (ACA) continues to conduct a large range of corrosion technical activities in the Australian and New Zealand regions. Below is an update of some of its recent major events including; the Marine & Coastal Corrosion Seminar Series, Concrete Performance for Coastal Assets, Corrosion in the Mining Industry and our upcoming annual congress: **Corrosion and Prevention 2014 in Darwin from September 22 - 24<sup>th</sup>**.



### Recent Events:

#### The ACA Marine & Coastal Corrosion Seminar Series 2014 Review



The ACA conducted its annual Seminar Series in May 2014 to discuss the impacts of corrosion in the Marine & Coastal environments.

Now in its 8<sup>th</sup> year, the ACA annual Seminar Series visited 8 locations around Australia and New Zealand and investigated marine and coastal corrosion and the ways to increase assets long term protection. With over 350 delegates attending across Australasia, the 2014 Seminar Series was a great success. The Seminar Series could not happen without the support of our industry sponsors: Galvanizers Association of Australia, Industrial Galvanizers and International Paint. Speakers and delegates travelled to Auckland, Hobart, Melbourne, Brisbane, Sydney, Newcastle, Darwin and Perth.

### Concrete Performance for Coastal Assets



The Concrete Structures & Buildings Technical Group of the ACA held a technical event on Thursday the 12<sup>th</sup> of June in Melbourne. This full day technical event had over 85 delegates from a broad cross section of the industry from around Australia in attendance. This event focused on real life case studies, exploring both successes and failures. The presenters shared their experience and the lessons they have learnt. Presenters from each of the following industry groups presented case studies on new and existing projects: Asset Owners, Researchers, Consultants, Contractors & Suppliers.

### Corrosion in the Mining Industry



The Mining Industry Technical Group of the ACA held a technical event on Thursday 3 July in Perth. This full day technical event had 40 delegates from a broad cross section of the industry from around Australia in attendance. The purpose of this event was to further investigate the effects of corrosion throughout the entire mining industry by bringing together a variety of stakeholders to share and talk about their experiences.

### Upcoming Events:

**Corrosion & Prevention Conference**  
**September 21-24, 2014 – Darwin, NT**  
**EFC Event No 383**



In 2014, the ACA will host the annual ACA conference at the Darwin Convention Centre.



The annual ACA conference is a 3 day gathering of global experts to discuss the latest information concerning corrosion mitigation. Titled **Corrosion & Prevention 2014**, the conference will comprise a programme of keynote presentations and a range of industry 'streams', with an exhibition showcasing products and services of the corrosion mitigation industry. Approximately 500 delegates are expected to attend from industries such as protective coatings, water, defence, building and construction, mining, oil & gas, cathodic protection, power and more.

The final technical and social Programme can be viewed at <http://www.acaconference.com.au/>

## NEWS FROM THE SPANISH MATERIALS SOCIETY - SOCIEMAT



The Spanish National Congress on Materials, the 13<sup>th</sup> in SOCIEMAT's CNM series, was held on the 19-21 June 2014, at Barcelona University. This time, the Spanish Materials Society, SOCIEMAT, entrusted the organisation of the event to the Thermal Spray Center of Barcelona, a research centre from University of Barcelona specialised since 1994 within the field of Surface Engineering. The Congress had a participation of 300 people and more than 250 papers.



Over two and a half days, about 60 presentations related to corrosion were presented in the Congress. The past President of FEMS, Dr Pedro Portella, gave a plenary lecture on “*Superalloys: 70 years in service under extreme conditions*” highlighting the latest advances and the excellent mechanical properties and resistance against corrosion. Special attention was paid to biomaterials and the development of new alloys (Mg, Zr and new Ti alloys mainly), surface treatments (mechanical treatments, thermal treatments and electrochemical treatments) and processing to enhance the corrosion resistance of implant materials.

The papers related to the other topics such as environmentally friendly corrosion inhibitors, corrosion of reinforced steel or tribocorrosion were equally critical in ensuring a good performance of metallic materials in aggressive environments.

More information at:

<http://sociemat.es>

<http://www.cnmat2014.com/bienvenida.html>

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## EFC MEMBER SOCIETIES AND AFFILIATE MEMBERS

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

**Member Societies:** <http://www.efcweb.org/Who we are/Member Societies>

**Affiliate Members:** <http://www.efcweb.org/Who we are/Affiliate Members>

## NEWS FROM THE WORKING PARTIES

### 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 8<sup>th</sup> of April 2014 in Mechelen (Belgium) where it was generously hosted by Borealis. 32 participants from all over Europe representing major industry leaders such as BP, ExxonMobil Chemical, Saudi Aramco, Shell Global Solutions International, Statoil ASA, Holborn Europa Raffinerie, IFP Energies Nouvelles, Nalco, and many other industry leaders working in the refinery sector and dealing with corrosion on a daily basis were present.

The main topics of information exchange and discussion were on the high temperature hydrogen attack (HTHA), corrosion of heat exchangers, new insulation materials and advanced monitoring techniques.



The next WP 15 Corrosion in the Refinery Industry meeting will be held during the EUROCORR 2014 Congress in Pisa, Italy on the 9<sup>th</sup> of September 2014 and will cover the «hot topics» affecting corrosion in the refinery industry such as high temperature hydrogen attack, sulfide stress corrosion cracking, stress relaxation cracking, inspection, monitoring, failure cases, and corrosion by cooling waters amongst others.

*EFC WP 15 Corrosion in the Refinery Industry Group would like to express its thanks to Borealis for hosting the meeting in Mechelen with special thanks to Gino De Landtsheer for his excellent organisation of the meeting.*

For more information on Working Party 15's Corrosion in the Refinery Industry activities, please visit their homepage at:

<http://www.efcweb.org/Working+Parties/WP+Corrosion+in+the+Refinery+Industry.html>

For Working Party 15 membership inquiries, please contact the WP Chairman Francois Ropital [francois.ropital@ifpen.fr](mailto:francois.ropital@ifpen.fr)

## INAUGURATION AT EUROCORR 2014 PISA:

### EFC WORKING PARTY 22: CORROSION CONTROL IN AEROSPACE

The EFC is very proud to introduce our newest Working Party 22 **Corrosion Control in Aerospace** chaired by Theo Hack, Senior expert for Corrosion and Corrosion Protection at Airbus Group Innovations and Vice-chaired by Mikhail Zheludkevich, head of the Corrosion and Surface Technology Department at the Institute of Materials Research, Helmholtz-Zentrum Geesthacht, Germany and adjunct Professor at University of Kiel and the University of Aveiro in Portugal. Both Working Party 22 Chairmen embody the ideal collusion of industry and academia, so necessary for understanding the complexities of corrosion in the aerospace industry, and have participated as separate partners in the E.U. FP6 projects: MULTIPROTECT "Advanced environmentally friendly multifunctional corrosion protection by nanotechnology"; MUST "Multi-level protection of materials for vehicles by "smart" nanocontainers"; and PROAIR "Active protection of multi-material assemblies for aircrafts". Vice Chairman Mikhail Zheludkevich is also Chairman of next year's ASST/2015 Aluminium Surface Science & Technology Congress to be held in Madeira. One of the Working Party's objectives is to liaise with the international associations representing corrosion in the aerospace industry including EASN, the European Aeronautics Science Network and ASD, The AeroSpace and Defence Industries Association of Europe. Working Party members consist of a dynamic mix of R&D, manufacturers, materials suppliers, engineers and industry representatives and numbers are growing as word gets out in the aerospace sector about the establishment of this timely working party.

#### **Mission** of WP 22 Corrosion Control in Aerospace:

Corrosion protection effectiveness and corrosion management of aerospace structures and systems which have been continuously improving over the last decades. Working Party members have established as their goal the need to confront the new challenges ahead concerning corrosion prediction, prevention and control in the aerospace industry as aerospace vehicle manufactures, operators and maintainers have continued to search for ways to reduce

maintenance costs and hours and to increase aircraft availability and longevity and to provide aerospace systems reliability. The main drivers for further efforts in corrosion research and implementation of corrosion prevention measures are currently the introduction of new materials and manufacturing processes, meeting the demands of environmental regulations and commercial needs to decrease manufacturing, operating, and recycling costs of aerospace components. The time to market for new corrosion control solutions and new materials is also often limited by long validation and certification procedures. This time can be shortened if new accelerated corrosion test methods which can adequately represent the combination of relevant environmental factors will be developed. New developments have been made in the composition and tempers of more corrosion resistant aluminium alloys offering the potential to increase resistance to intergranular corrosion, exfoliation corrosion and stress corrosion cracking. Nevertheless there is still a lack of knowledge of corrosion behaviour under varying environmental conditions and understanding their long-term behaviour including situations of hybrid structures. Another challenge is the introduction and recent increase of Carbon Fibre Reinforced Polymers (CFRP) into the design of commercial aircrafts. While fibre reinforced polymer materials are corrosion resistant, reinforced carbon fibre materials can induce galvanic corrosion in joint aluminium structure.

One of the **major objectives** of this newly formed EFC Working Party is to gather international corrosion experts from academia and industry and their cumulative multidisciplinary expertise in order to discuss the complexities of corrosion in the aerospace sector and initiate further cooperation with the aerospace industry at a fundamental and engineering level. It provides a forum to exchange new ideas, to share achieved progress in aerospace corrosion research and development and to highlight the new challenges that lie ahead as dictated by industry's needs.

Key players from different aerospace industry sectors (manufacturers, materials and process suppliers, airlines, maintainers) and academia with aerospace materials focus are addressed and invited to participate in the Working Party network.

Specific WP 22 objectives are:

- Support and contribute to the definition of research work programmes with respect to industrial and scientific needs;
- Initiate projects in the field of aerospace corrosion research & development on transnational, international and the European level;
- Collaborate on the exchange and production of scientific & technical publications in aerospace corrosion topics and to promote standardisation activities;
- Utilise synergies in corrosion science and engineering with other transport industries (e.g. automotive) or related applications (e.g. offshore wind energy, marine corrosion);
- Organise common workshops with other WPs on certain hot topics (WP17 Automotive Corrosion, WP14 Coatings, WP6 Surface Science and Mechanisms of Corrosion and Protection, ...);
- Enhance representation and contribution from the industrial sector for EUROCORR events.

Working Party 22 is currently focusing on **atmospheric corrosion in aeronautics** and is covering the following topics:

- Solutions for environmentally benign corrosion protection systems and perspectives for next generation of protection systems;
- Understanding of corrosion behaviour, corrosion testing and tools for long term prediction of newly developed corrosion prevention methods;
- Corrosion behaviour of hybrid materials and structures;
- Corrosion resistance of new aluminium alloys for aerospace structures;
- Corrosion protection of Mg alloys for aerospace application;
- Modelling of corrosion processes of aircraft relevant materials and structures.

For details on Working Party membership, please contact: EFC Scientific Secretary Dr. Roman Bender [bender@dechema.de](mailto:bender@dechema.de) or go to WP 22's web pages on the EFC website:

<http://www.efcweb.org/WP+Corrosion+Control+in+Aerospace.html>





## RECENT EFC SPONSORED EVENTS

EFC Event No 366:

### 10<sup>th</sup> National Congress on Corrosion and Protection

Naples, Italy, 10-12 July 2013



The 10<sup>th</sup> National Congress on Corrosion and Protection was organised by AIM, the Italian Society for Metallurgy in Naples, Italy at the prestigious Congress centre of the University of Naples "Federico II", on 10-12 July 2013. The event registered the participation of more than 140 attendees representing academic, scientific research institutions and industry. The official language of the event was Italian.

During the Congress, 80 original papers were presented and published as proceedings on a CD-ROM. A selection of the best papers has been published, after a reviewing process by the Congress scientific committee, in AIM's official journal *La Metallurgia Italiana* (issue 6/2014 and issue 7-8/2014).

Two plenary lectures were given in the opening session, one by Centro Ricerche Fiat and the other by the Italian Authority for electric energy and gas. The second day was opened with two additional plenary lectures, the first by Prof. Francesco Di Quarto from the University of Palermo, and the second one given by Alenia-Aermacchi. On the final day, Prof. George Thompson from the University of Manchester presented a plenary lecture on "*The Development of Environmentally-Friendly Anodizing Treatments on Aluminium Alloys*".

The Congress was enriched by a session on cathodic protection co-organised with the EFC Member

Society APCE and by a session on Corrosion in Oil and Gas, co-organised with the NACE Milano Italia Section. One session, scheduled in the afternoon of the second day, was devoted exclusively to young researchers who had the possibility to illustrate their works in short oral presentations (15 minutes).



Several prizes were also awarded to young researchers including two AIM-sponsored monetary prizes for the two best oral presentations by young researchers. A third monetary prize was sponsored by a company (ESA) and AIMAT gave a contribution to cover the travel and accommodation expenses of deserving students who attended the Congress.

Besides the technical sessions, a small exhibition for sponsoring companies was organised and two

evening social events were included in the Congress social programme: a Welcome Reception at Naples' beautiful Castel dell'Ovo and a gala dinner on the panoramic terrace of the renowned Bertolini's Hall.

The next National Congress on Corrosion and Protection will be held by AIM in Ferrara, Italy, in June 2015.

EFC Event No 365:

**15 YUCORR International Conference**  
**"Meeting point of Science and Practice in the fields of Corrosion, Materials and Environmental Protection"**  
 Tara Mountain, Serbia, 17-20 September 2013



The regional annual conference YUCORR was held for the fifteenth time on Tara Mountain in Serbia from the 17<sup>th</sup> to the 20<sup>th</sup> of September 2013. Since the first YUCORR held in Belgrade, Serbia in the year 1996, this regularly held conference gathers scientists and engineers from industries based in south-eastern Europe to discuss and exchange ideas related to corrosion and the protection of materials and the environment, alternative energy sources and corrosion issues in civil engineering and food chemistry. The YUCORR conference series are organised by the EFC Member Society, The Serbian Society of Corrosion and Materials Protection (UISKoZaM).

This year's YUCORR conference was under the auspices of the Ministry of Education, Science and Technological Development of the Republic of Serbia, and sponsored by the International Society of Electrochemistry and the European Federation of Corrosion.

This year was the 15<sup>th</sup> anniversary of the YUCORR conference and circa 70 participants from 7 different European countries attended. 58 papers were presented, out of which 14 were selected for oral presentation. Conference materials consisted of the short abstracts printed in a Book of Abstracts, and the extended papers collected in Compact Disk Proceedings.

There were 4 Plenary Sessions with 6 Plenary Lectures. The Plenary Lectures covered the corrosion inhibition of copper by absorption of organic compounds, waste water treatment and sensing by potentiometric and potentiodynamic methods and photochemistry, the valorization of zinc electrometallurgy waste as well as the impact of explosives handling on the environment. As is tradition, the YUCORR Scientific Committee awarded a grant to the young scientist with the best presentation. At this year's conference, the grant went to **Mr. Krešimir Kekez** of the University of Zagreb for his contribution entitled "*Case study: The extremely high corrosion activity of embedded water line caused by DC stray current*".

UISKoZaM, The Serbian Society of Corrosion and Materials Protection, has once again successfully organised another YUCORR Conference with the considerable help of co-organisers and sponsors, including, for the very first time, the ISE. Sincere thanks goes to the 15<sup>th</sup> YUCORR participants for their valuable scientific contributions which made the congress a great success.

*Prof. Dr Miomir Pavlović*  
 President of the 15<sup>th</sup> YUCORR Scientific Committee  
*Dr Vladimir Panić*  
 President of the 15<sup>th</sup> YUCORR Organising Committee



The Opening Ceremony

EFC Event No 360:

## LongTermCorr 2013

### “5th International Workshop on long-term prediction of corrosion damage in nuclear waste repositories”

Asahikawa(Hokkaido), Japan, 6-10 October 2013

The 5th International Workshop on long-term prediction of corrosion damage in nuclear waste repository (LongTermCorr) took place at Asahikawa (Hokkaido), Japan, from October 6 to October 10, 2013.

The event was organised by the Japan Society of Corrosion Engineering together with EFC Working Party 4 Nuclear Corrosion chairman Dr. Damien Féron, co-founder, together with Prof. Digby MacDonald, of the LongTermCorr Series and organiser of the first two in Cadarache, France in 2001 and in Nice in 2004. LongTermCorr 2013 is the first EFC event organised in Japan.

The local organising committee, chaired by Professor Kazuhisa Azumi of Hokkaido University together with Hidekazu Asano (RWMC) as Secretary General, succeeded in gathering 64 participants from 12 different countries for the workshop which consisted of 30 oral presentations and 28 displayed. The one-day technical tour to JAEA's Horonobe Underground Research Center was a part of the official workshop programme. The visit to Horonobe Underground Research Facility at -250m underground by groups of 10 attendees was very impressive for all concerned. At the same location, a visit to a full-scale demonstration facility for engineering barrier systems (EBS) was very instructive.

During the bus trip, the beautiful landscape of the northern territory of Hokkaido with its wildlife of fox, deer and bear was appreciated by all the participants.

The main objective of the LongTermCorr workshop series is to gather scientists and engineers from various countries that are developing high-level nuclear waste disposal technologies, with the goal of promoting scientific and technical exchange and understanding concerning the long term behavior of metallic containment materials and engineered barrier systems. In particular, workshops compared the approaches that are being developed worldwide for predicting long-term corrosion phenomena

including corrosion strategies for interim storage and geological disposal.

The 2013 LongTermCorr workshop was divided into 11 oral sessions and one poster session which addressed the major following items:

- Overview of national programmes (Japan, UK, France...) with emphasis on similarities, common challenges and different approaches, legal issues, retrievability and others.
- Experimentation of candidate materials (copper and carbon steel mainly) including laboratory tests, full-scale demonstration, in-situ testing, methodology
- Modeling and long-term prediction with the determination of mechanisms, the fundamental of prediction, numerical analysis and simulation
- Archeological artifact and natural analogues and their use for long-term prediction.



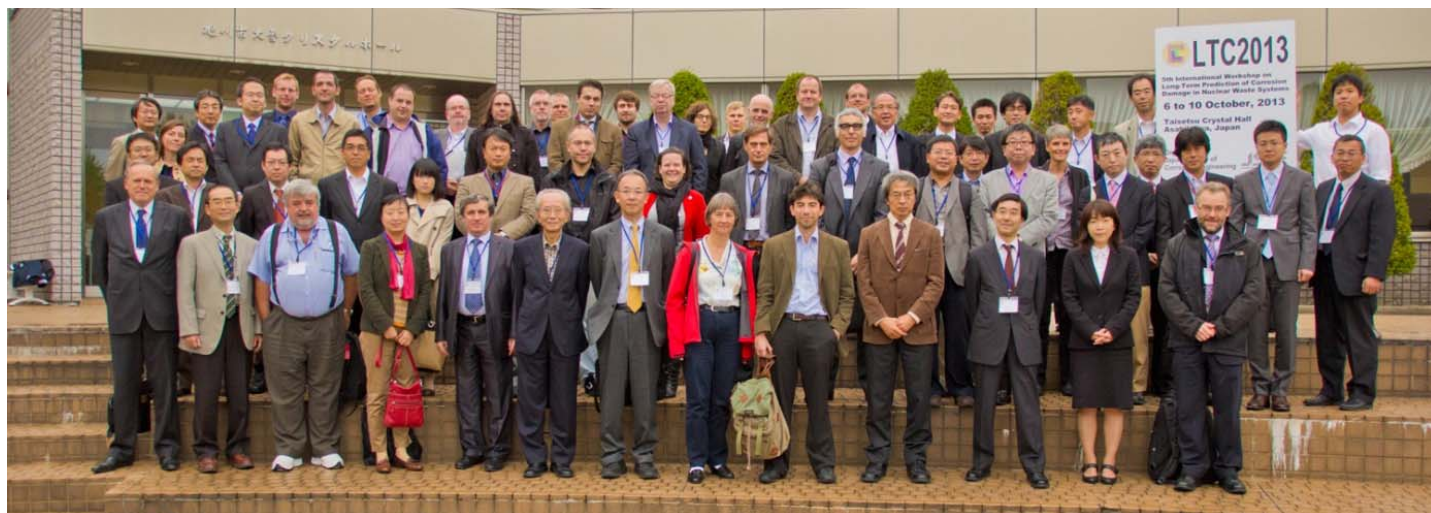
Allocation of Prof. K. Azumi during the workshop banquet

The attendees thanked their Japanese colleagues for the excellent organisation of the workshop and its outstanding scientific and technical content. The exchanges that took place will continue to be useful to scientists and engineers active in developing appropriate technologies for high level nuclear waste isolation and extremely valuable to operating nuclear waste authorities and regulators who evaluate solutions to nuclear waste disposal issues.

Amongst the options considering how to deal with radioactive wastes, geological disposal is the one recommended at a global level.

Observing the degradation process and predicting the lifetime of metallic barriers in a robust and reliable manner represents one of the greatest scientific and technical challenges for man-made structures, since the required period for their integrity largely exceeds

that of any industrial application. This issue has already been explored during the previous four successful workshops: Cadarache (France, 2001 - EFC Event No 256), Nice, (France, 2004 – in conjunction with Eurocorr 2004), Pennsylvania State University (USA, 2007 - EFC Event No 301) and Bruges (Belgium, 2010 - EFC Event No 329).



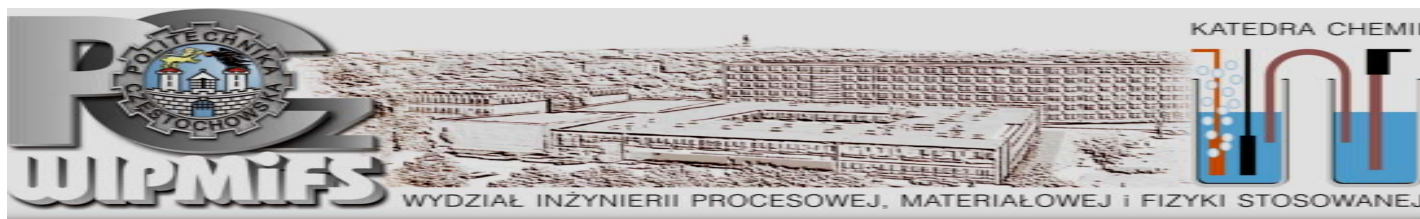
Attendance of the 5<sup>th</sup> International Workshop long-term prediction of corrosion damage in nuclear waste repository (LTC 2013)

EFC Event No 369:

### 17<sup>th</sup> All-Polish Corrosion Symposium (APCS)

#### *“New Achievements in Corrosion Research and Engineering”*

Jastrzab-Poraj, Poland, 27-29 November 2013



The 17<sup>th</sup> Corrosion Symposium “*New Achievements in Corrosion Research and Engineering*” was held at the Conference & Training Centre “Poraj” in Jastrzab-Poraj, near Czestochowa, Poland, between 27<sup>th</sup> and 29<sup>th</sup> November 2013. The Symposium was under the auspices of Polish Corrosion Society and was sponsored by the Rector of Czestochowa University of Technology.

More than 70 attendees from academic/scientific institutions and industry took part in the symposium while most of participants were from Poland. International guests were mainly from Western Europe (France, Italy and Germany) and also from the Ukraine and Egypt. The official languages were Polish and English.



50 original contributions were presented during the symposium (26 oral presentations + 24 posters). Amongst the oral contributions, 8 were presented in the English language, both by Polish and foreign participants.



The Symposium Proceedings were published in a subscribed issue of Polish Corrosion Protection Monthly – *Ochrona przed Korozją (OpK)* vol. 56, No 11, 2013, pages 462- 565) which contains 24 full papers and 20 synopses.

Two plenary lectures were presented by Polish scientists, by Prof. Malgorzata Zubielewicz from the Inst. Engrn Polymer Materials and Dyes, Gliwice entitled “The *Effects of shape and particle size distribution of natural fillers on the barrier properties of organic coatings*”, and by Dr. Andrzej Krolkowski of the Warsaw University of Technology entitled “The *Contribution of Jan Czochralski to the Corrosion*

*Engineering*”. Jan Czochralski (1885-1953) was a famous Polish scientist of German and Polish citizenship who was an expert in the interface of chemistry and metallurgy and made a substantial contribution to the Warsaw University of Technology. The year 2013 was nominated by the Polish Parliament of Poland as the year of Jan Czochralski.

All papers (apart from the briefings) were reviewed by a referee staff of 10 professors. A complete volume of the symposium proceedings (No 11/2013 OpK Monthly) was available for the participants upon registration. Amongst the five topic sessions under the theme “*New challenges in Corrosion Research and Materials Protection*” one was in the *English-language Session*.

Two evening social events included a *Welcome Reception held on the 27<sup>th</sup> November* and a *Beer Party on the 28<sup>th</sup>*. A Round Table Discussion summarized the debates and presented new suggestions and proposals addressed to the Organizing Committee. The international nature of the Symposium was appreciated by all.

Three forthcoming corrosion events were announced during the Round Table meeting: the **Corrosion-2014 Conference** organised by Silesian University of Technology on 18-21 November in Gliwice, the **22<sup>nd</sup> Anticorrosion Conference** in Ustron-Jaszowiec on 8-10 April 2014, and the **8<sup>th</sup> Annual PSK Conference** in Ostroda on 19-21 May 2014.

Participants were enthusiastic about the high scientific level of the symposium and the excellent organization of the event. More information and a detailed programme of the Symposium Poraj-2013 are available on our web site:

<http://www.symp-kor-apcs.wip.pcz.pl>

The next APCS Corrosion Symposium is will be held in Poraj, Poland in November 2015.

*Prof. Henryk Bala*  
APCS Chairman

EFC Event No 373:

## Corrosion & Coatings 2014

Antwerp, Belgium, 12-13 February 2014



On the 12<sup>th</sup> and 13<sup>th</sup> of February the *Corrosion & Coatings 2014* congress took place in the harbour of Antwerp, Belgium. Organised by IIR with the scientific support of EFC Dutch Member Society Bond voor Materialenkennis, corrosion experts from the Benelux countries of Belgium, Holland and Luxembourg gathered together representing the academic, scientific and industrial corrosion worlds. The official language of the congress was Dutch with the first day being devoted to international topics for which all presentations were given in English.

This year, for the 9<sup>th</sup> edition of the *Corrosion & Coatings* congress, the organisers decided to move it across national borders into Belgium for an enriching and dynamic programme. Two full and stimulating days were filled with interaction, knowledge applied to real life corrosion problems as presented by industry, as well as case studies and a recounting of experience within each of the nations represented as well as abroad; experiences of problems and solutions which were shared by all and contributed to a stimulating environment.

The congress kicked-off with a "Knowledge Committee" consisting of a panel of four experts who were introduced to the audience and posed various statements on how best to capture and build on the corrosion expertise available in the market. Throughout the day, participants were able to personally respond to these statements posed by the experts via supplying their feedback in a form which was distributed to the audience. One of the most important questions was how industry can attract young people in the employment market and entice them to develop their careers as corrosion experts. Of the conclusions drawn at the end of the conference emanating from the exchange of ideas discussed, was that teaching methods should strive to match the interests of the younger generation. The example of the hit series 'Breaking Bad' was given to illustrate how this popular television programme has hugely improved the image of becoming a scientist and, as a consequence, the number of chemistry

students has actually been on the rise. The programme also included lively discussion on innovations in the corrosion and coatings fields including monitoring and inspection. Insights were shared on corrosion simulation, corrosion and asset management (with examples from off-shore wind turbines, the infrastructure sector and old airplanes) and funding opportunities in international collaborative research programmes within the EU. Round table sessions on organic coatings, corrosion in drinking water systems, MIC and cathodic protection gave the congress attendees an opportunity to go more in depth on these topics by interacting with each other and sharing and discussing the typical issues they encounter on a daily basis.

Arjan Mol, Chairman of the EFC's Scientific and Technology Advisory Committee gave a presentation on the major activities of the EFC that are meaningful to European industry.

The conference concluded at the end of the second day with an excursion to the production facility of Smulders Projects, a manufacturer of foundations for off-shore wind turbines. One could feel the hearts of all the corrosion and



coatings fanatics beating faster as they were led through the facility and were explained each and every step from producing the turbine foundations to placing them at the bottom of the ocean.

For upcoming events of IIR Industry in the Benelux go to <http://www.iir.nl/corrosie> or subscribe to the LinkedIn group: IIR Industry.

EFC Event No 382:

## KORMAT 2014

21th International Conference of Materials Protection and Industrial Finishes

Zagreb, Croatia, 10 April 2014

On April 10, 2014 the Croatian Society for Materials Protection organised its 21<sup>th</sup> International Conference of Materials Protection and Industrial Finishes entitled “KORMAT 2014”, which took place at the Zagreb Fair in Zagreb, Croatia. The Conference gathered scientists and experts from Croatia and abroad with the aim of presenting the results of the latest scientific research, experience exchange and discussions on important issues in the fields of corrosion and corrosion protection. This year was particularly special due to the fact that the Croatian Society for Materials Protection celebrated its 60<sup>th</sup> Anniversary of continuous work which was celebrated at the Conference with various awards given out to noteworthy members.

The one-day Conference programme consisted of 14 scientific presentations with lecturers from Croatia and Germany, two of whom were invited lecturer J.W. Erning from BAM, the Federal Institute for Materials Research and Testing in Berlin on “*High Lead concentrations in a hot water circulation system: A Case study*”, and B. Runje from the Faculty of Mechanical Engineering and Naval Architecture of the University of Zagreb entitled “*Quality management in the field of corrosion protection coatings*”. The programme covered the topics of stainless steel, protection by coatings, application of corrosion inhibitors, cathodic protection, corrosion management, corrosion in concrete, stray current corrosion, quality assurance, education and environmental impact. Papers from the Conference were peer reviewed and published in the Proceedings.

Also within the framework of the Conference, an exhibition of regionally-based companies engaged in corrosion protection was held including IDEF, STOPAQ, INSTITUT IGH, MORLAK, ENDAL, AKZ-M, INHIBITOR SISA, MIAB, PA-EL, and ECO-CORTEC and IVEKOVIĆ-TZM.



The Conference was attended by 117 participants from Croatia, Slovenia, Germany and Algeria as well as students from the Faculty of Mechanical Engineering in Slavonski Brod. Within the Croatia corrosion community the KORMAT congress series has once again proven its value as providing a biennial event where scientists and industry can connect to promote their profession in the corrosion sector and establish permanent contacts and cooperation with domestic and foreign institutions.

The next KORMAT conference will take place in 2016.

## News from our Brazilian Member Society ABRACO

EFC Event No 385:

### INTERCORR 2014

Fortaleza/CE, Brazil, 19-23 May 2014



INTERCORR is the largest international corrosion event in Brazil which brings together the technical and scientific community of universities, research institutes, companies and professionals in the field of corrosion, providing for a greater exchange of knowledge and experience.

At this INTERCORR 2014 edition, we also hosted the annual event of the ASOCIACIÓN IBEROAMERICANA DE CORROSIÓN Y PROTECCIÓN - AICOP, (THE IBERAMERICAN ASSOCIATION FOR CORROSION AND PROTECTION) thereby consolidating INTERCORR as a centralised reference for industrial development in Brazil and abroad. This provided an excellent forum for companies from a variety of industrial sectors to present their technologies, to divulge their brands and to make their businesses visible which, in turn, serves to strengthen and expand relationships and further disseminate knowledge.

- The 34<sup>th</sup> Exhibition of Technologies for Prevention and Control of Corrosion

The first day of the congress started with a series of mini corrosion courses and ended with a Welcoming Cocktail for general participants and the final day ended with a formal closing and the distribution of awards.



The following Events took place at INTERCORR 2014 this year:

- The 34<sup>th</sup> Brazilian Congress for Corrosion
- The 5<sup>th</sup> International Corrosion Meeting
- The X Congreso Iberoamericano de Corrosión y Protección
- The 19<sup>th</sup> Picture Contest for Corrosion and Degradation of Materials

The themes covered under these events included:

Biomaterial, Corrosion associated with mechanical factors, Atmospheric corrosion, Corrosion in high temperatures, Corrosion in transport systems (ducts and ships), Microbiological corrosion, Corrosion in civil construction, Corrosion in the industry – onshore and offshore, Corrosion in the marine industry, Corrosion by water (natural and industrial), Corrosion from alcohol and biodiesel, Corrosion from soil, Nanotechnology applied to corrosion protection, Cathodic and anodic protection amongst others including a presentation on how to teach corrosion.

The languages of the congress were Portuguese, English and Spanish. The next INTERCORR congress will be held in Brazil in 2016.



EFC Event No 363:

## CEFRACOR – 6<sup>th</sup> Cathodic Protection Days

Palais des Congrès d'Antibes Juan-les-Pins, France, 24-26 June 2014



As a continuation of similar events held with great success in 1994, 1999, 2002, 2006 and 2011 that had taken place in Aix-en-Provence and organised by CEFRACOR, the *Centre Français de l'Anticorrosion's* Working Party on Cathodic Protection and Associated Coatings put on their 3-day seminar on Cathodic Protection, *Journées Protection Cathodique* which, once again, proved to be very popular.

This year, the new Palais des Congrès d'Antibes in Juan-les-Pins on the French Riviera offered a beautiful venue for exchange on the progress that has taken place within the scope of scientific context, industrial applications, design and monitoring techniques, European and international standardisation and certification of persons in all application sectors of cathodic protection and associated coatings.



CEFRACOR's Cathodic Protection Days series has become a widely acknowledged opportunity for experts, specialists or anyone who is not yet very

familiar with cathodic protection techniques to learn from one another. 150 attendants came from France as well as from Algeria, Belgium, Denmark, Germany, Italy, Monaco, Morocco, the Netherlands, the Republic of Congo, Spain, Switzerland, and the UK. 57 oral presentations (in French and English) were presented and organised into four sessions: general, buried structures, marine structures and reinforced concrete structures.



The CD-ROM of papers is available at CEFRACOR (<http://www.cefracor.org>).

A highly informative exhibition accompanied the conference with 31 exhibitors which was appreciated by all. CEFRACOR was represented with a booth on their CFPC branch in charge of Certification of persons specialised in cathodic protection.

The dedicated web site <http://www.protectioncathodique.net>

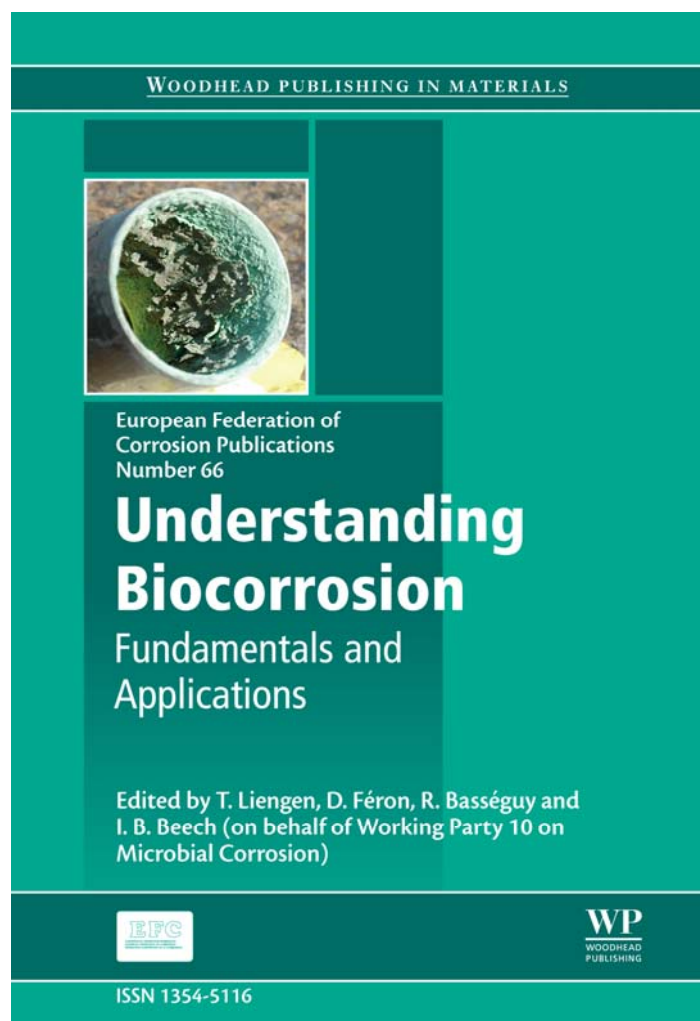
offers the procedures for Certification of persons using the "CEFRACOR Certification / Protection cathodique" scheme (Accredited by COFRAC under the referential EN ISO/IEC 17024 and EN 15257), in addition to scientific and technical information on cathodic protection.



## ADDITIONS TO THE EFC PUBLICATIONS SERIES

### EFC 66: UNDERSTANDING BIOCORROSION: FUNDAMENTALS AND APPLICATIONS

*Edited by Turid Liengen, Statoil, Norway; Damien Féron, CEA, France, Régine Basséguy, CNRS-LGC, France; and Iwona B. Beech, University of Portsmouth, UK (co-ordinating editor to 1.11: Vincent Birrien, CNRS-LGC, France; co-ordinating editor after 1.11: Régine Basséguy)*



**Understanding Biocorrosion**, produced by EFC Working Party 10 on Microbial Corrosion is an important reference work for researchers approaching biocorrosion from a variety of different backgrounds including the analytical sciences, electrochemistry, materials and surface science, biochemistry and molecular microbial ecology.

Biocorrosion pertains to corrosion influenced by bacteria adhering to surfaces in biofilms. It is a major problem in areas such as cooling systems and marine structures where biofilms can develop.

This book summarises key recent research in this subject. Part one looks at theories of biocorrosion and measurement techniques while Part two discusses how bacteria and biofilms result in biocorrosion. Chapters in the final part of the book include case studies of biocorrosion in areas as diverse as buildings, fuels, marine environments and cooling systems.

#### Part I Diagnosing and Investigating biocorrosion

- 1 Understanding corrosion and biocorrosion (Duret; F)
- 2 Biofilms and biocorrosion: (Beech et al.)
- 3 Molecular methods for studying biocorrosion (Kuever)
- 4 Sulphate-reducing bacteria (SRB) and biocorrosion (Moura; F)
- 5 Electroactive biofilms (Basseguy et al.)
- 6 Immobilisation and trapping of bacteria to study biocorrosion (Avci; F)

#### Part II Evaluating and Modelling Biocorrosion

- 7 Physical and local electrochemical techniques for measuring rates of corrosion in metals (Tribollet/Vivier; F)
- 8 Surface analysis techniques for analysing biocorrosion (Marcus; F)
- 9 Modelling long term corrosion of steel infrastructure in natural marine environments (Melchers; F)
- 10 Modelling mechanisms in biocorrosion (MacDonald; F)

#### Part III Case studies

**To be released in November 2014**

For further information on this and all previously-published EFC publications please revert to our EFC website: <http://www.efcweb.org/List+of+EFC+Publications.html>

All EFC members are entitled to a 30% discount on all current and previously-published EFC “Greenbook” Series titles.

EFC-appointed publisher for our noteworthy EFC “Greenbook” Series, **Woodhead Publishing** based in Cambridge, UK was acquired by Elsevier in August 2013.

For all EFC books published by **Woodhead Publishing** (EFC 38, 41-51, 53-55 and 65-66) and all new and forthcoming EFC titles, please revert to the Elsevier Book Store ([http://store.elsevier.com/Woodhead-Publishing/IMP\\_209/](http://store.elsevier.com/Woodhead-Publishing/IMP_209/))



To order any EFC “Greenbook” titles published with our former EFC “Greenbook” publisher **Maney Publishing**, please place orders through Oxbow Books ([orders@oxbowbooks.com](mailto:orders@oxbowbooks.com) or online at <http://www.oxbowbooks.com>) Purchasers in North America can be directly supplied by Casemate Academic ([info@casemateacademic.com](mailto:info@casemateacademic.com))

View more books in the EFC series at [http://www.maney.co.uk/web/series/efc\\_series](http://www.maney.co.uk/web/series/efc_series)

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## EFC ADMINISTRATION UPDATE

### EFC Administration

<b>President:</b>	Lorenzo Fedrizzi, Udine, Italy
<b>Vice President:</b>	Fatima Montemor, Lisbon, Portugal
<b>STAC Committee Chairman:</b>	Arjan Mol, Delft, The Netherlands
<b>Scientific Secretary:</b>	Roman Bender, Frankfurt am Main, Germany
<b>Public Relations Officer:</b>	Juliet Ippolito, Naples, Italy
<b>Frankfurt Secretariat:</b>	Willi Meier / Ines Honndorf / Dagmar Glänzer
<b>Paris Secretariat:</b>	Marcel Roche / Pascale Bridou Buffet
<b>London Secretariat:</b>	Julija Bugajeva

## PREVIEW: EUROCORR 2016 & 2017



### NEWS ON EUROCORR 2016

Montpellier, France, 11-15 September 2016 (EFC Event No 390)

CEFRACOR, the French Center for Anticorrosion and the French Federation for the sciences of Chemicals (FFC) are proud to host the EFC's annual EUROCORR 2016.



#### Invitation to EUROCORR 2016

EUROCORR, the annual event of the **European Federation of Corrosion**, is the premier Corrosion Congress in Europe, attracting an ever-increasing international participation. September 2016's EUROCORR will take place in **Montpellier, France**, from the **11<sup>th</sup> to the 15<sup>th</sup> of September 2016**.



EUROPEAN CORROSION CONGRESS

Montpellier, capital of France's Languedoc-Roussillon region, is a beautiful and charming Mediterranean city offering a blend of history, culture and modernity.

After the success of EUROCORR 2004 and 2009 in Nice, CEFRACOR and the Fédération Française pour les sciences de la Chimie (FFC), both EFC Member Societies, in cooperation with Chimie ParisTech, have been designated by the EFC to co-organise this major event. EUROCORR 2016 will cover all aspects of corrosion science, technology, and engineering, with emphasis on a main theme: **Advances in linking science to engineering**. This will be achieved by bringing together corrosion experts from universities, research centers, and industries. EUROCORR 2016 will be a forum for the presentation and discussion of advances in understanding corrosion phenomena and progress in corrosion prevention.

The programme will include plenary lectures, keynote lectures, oral and poster presentations in all the areas covered by the EFC working parties, with additional topical workshops. A large exhibition is planned which will feature the latest developments in corrosion resistant materials, corrosion monitoring, coatings, inhibitors and cathodic protection.

"Le Corum", Montpellier's state-of-the-art Conference Centre, is ideally located in the heart of the city with a large choice of hotels and restaurants within walking distance.



Conference Centre "Le Corum"

Social events will include receptions, a conference dinner and, of course, French wines, which will contribute to the warm and friendly atmosphere that you will find in Montpellier.



We look forward to welcoming you in Montpellier for EUROCORR 2016.

**Please save the date!**

*Philippe Marcus*

Chairman of EUROCORR 2016

**Important deadlines:**

**Submission of abstracts:** 17 January 2016

**Notification of acceptance**

**to authors:** 15 April 2016

**Submission of full manuscripts:** 15 June 2016



**Contact:**

CEFRACOR

28 rue Saint-Dominique

75007 Paris, France

Phone: +33 147053926

Fax: +33 145559074

E-mail: [eurocorr2016@cefracor.org](mailto:eurocorr2016@cefracor.org)

**Website:** <http://www.eurocorr2016.org/>

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## NEWS ON EUROCORR 2017

Prague, Czech Republic, September 2017

**Theme:** *Corrosion Control for Safer Living*

Prague, an architectural, musical and cultural jewel of a city will be the location for EUROCORR 2017 which will be jointly hosted by The Czech Association of Corrosion Engineers and DECHEMA e.V., so put a trip to enchanting Prague on your calendar!



**Contact:**

Czech Association of Corrosion Engineers (AKI)

VSČT Praha (106), Technická 5

16628 Praha 6 - Dejvice, Czech Republic

Phone: +420 22044 4275

Fax: +420 22044 4400

E-mail: [aki@vscht.cz](mailto:aki@vscht.cz)

**Website:** <http://www.aki-koroze.eu>

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**Note:** If your European Member Society would like to bid on hosting a future EUROCORR in your country, please contact our EFC Frankfurt secretariat, Ines Honndorf (e-mail [honndorf@dechema.de](mailto:honndorf@dechema.de)) for details.

## EFC WORKING PARTY INDEX

The EFC currently has twenty 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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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, Delft, The Netherlands;  
E-mail: [j.m.c.mol@tudelft.nl](mailto: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](mailto:ulf.kivisakk@sandvik.com)

### **EFC Working Party 10: Microbial Corrosion**

*Chair:* Dr. Pierangela CRISTIANI, RSE - Ricerca sul Sistema Energetico S.p.A., Milan, Italy;  
E-mail: [pierangela.cristiani@rse-web.it](mailto:pierangela.cristiani@rse-web.it)

### **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](mailto:raupach@ibac.rwth-aachen.de)

### **EFC Working Party 13: Corrosion in Oil and Gas Production**

*Chair:* Mr. Steve PATERSON, Shell U.K. Ltd., Aberdeen, United Kingdom;

E-mail: [steve.paterson@shell.com](mailto:steve.paterson@shell.com)

### **EFC Working Party 14: Coatings**

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

E-mail: [fuerbeth@dechema.de](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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, Berlin, Germany;

E-mail: [wilhelm.erning@bam.de](mailto:wilhelm.erning@bam.de)

### **EFC Working Party 21: Corrosion of Archeological and Historical Artifacts**

*Chair:* Dr. Delphine NEFF, Archaeomaterials and Alteration Prediction Laboratory, SIS2M/LAPA CEA/CNRS, CEA Saclay, Gif-sur-Yvette, France;

E-mail: [philippe.dillmann@cea.fr](mailto:philippe.dillmann@cea.fr)

### **EFC Working Party 22: Corrosion Control in Aerospace**

*Chair:* Mr. Theo HACK, EADS Innovation Works, Munich, Germany;

E-mail: [theo.hack@eads.net](mailto:theo.hack@eads.net)

In addition:

### **EFC Task Force on CO<sub>2</sub>-Corrosion in CCS-Applications**

*Chair:* Dr. Ralph BÄSSLER, Bundesanstalt für Materialforschung und –prüfung, Berlin, Germany

E-mail: [ralph.baessler@bam.de](mailto:ralph.baessler@bam.de)

## EFC CALENDAR OF FORTHCOMING EVENTS AND COURSES AS OF JULY 2014

Date/Venue	Conference / Course	Contact
<b>08–12 September 2014</b> Pisa, Italy	<b>EUROCORR 2014</b> <i>“Improving materials durability: from cultural heritage to industrial applications”</i>  (EFC Event No 364)	Associazione Italiana di Metallurgia (AIM) Dr. Federica Bassani P.le R. Morandi, 2 20121 Milano, Italy Tel: +39 0276021132 Fax: +39 0276020551 E-mail: <a href="mailto:eurocorr2014@aimnet.it">eurocorr2014@aimnet.it</a> Website: <a href="http://www.eurocorr2014.org/">http://www.eurocorr2014.org/</a>
<b>16–19 September 2014</b> Paderborn, Germany	<b>Industrielle Lackiertechnik in Theorie und Praxis im Bereich metallische Werkstoffe</b> <i>Held in German</i>  (Course)	DFO Service GmbH Nicole Dopheide Tel: +49 2131 40811 24 E-mail: <a href="mailto:dopheide@dfo-online.de">dopheide@dfo-online.de</a> Website: <a href="http://www.dfo.info/">http://www.dfo.info/</a>
<b>21–24 September 2014</b> Chicago, IL, USA	<b>Titanium 2014</b> <i>30<sup>th</sup> 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: <a href="mailto:conference@titanium.org">conference@titanium.org</a> Website: <a href="http://www.titanium.org/">http://www.titanium.org/</a>
<b>21–24 September 2014</b> Darwin, Australia	<b>Corrosion &amp; Prevention 2014</b>  (EFC Event No 383)	Australasian Corrosion Association, Inc. Mr. Wesley Fawaz Tel: +61 3 9890 4833 Fax: +61 3 9890 7866 E-mail: <a href="mailto:wesley.fawaz@corrosion.com.au">wesley.fawaz@corrosion.com.au</a> Website: <a href="http://www.acaconference.com.au/">http://www.acaconference.com.au/</a>
<b>28 September–02 October 2014</b> Chia, Domus de Maria (CA), Sardinia, Italy	<b>ESEE 2014</b> <i>10<sup>th</sup> European Symposium of Electrochemical Engineering</i>	AIDIC Manuela Licciardello Via Giuseppe Colombo 81/a 20133 Milano, Italy Tel: +39 02 70608276 Fax: +39 02 70639402 E-mail: <a href="mailto:10thesee@aidic.it">10thesee@aidic.it</a> Website: <a href="http://www.10thesee.it/">http://www.10thesee.it/</a>
<b>29 September–02 October 2014</b> Jastrzębia Góra near Gdańsk, Poland	<b>Anticorrosion Protection on Steel Bridges (Part 3 of 3)</b> <i>Held in Polish</i>  (Course)	Agnieszka Królikowska Instytutowa 1 03-302 Warszawa, Poland Tel: +48 604553244 E-mail: <a href="mailto:akrolikowska@ibdim.edu.pl">akrolikowska@ibdim.edu.pl</a> Website: <a href="http://www.ibdim.edu.pl/">http://www.ibdim.edu.pl/</a>
<b>05–10 October 2014</b> Cancun, Mexico	<b>226<sup>th</sup> ECS Meeting</b>	The Electrochemical Society 65 South Main Street, Building D Pennington, New Jersey 08534-2839, USA E-mail: <a href="mailto:ecs@electrochem.org">ecs@electrochem.org</a> Website: <a href="http://www.electrochem.org/meetings/biannual/fut_mtgs.htm">http://www.electrochem.org/meetings/biannual/fut_mtgs.htm</a>



Date/Venue	Conference / Course	Contact
<b>12–17 October 2014</b> La Rochelle, France	<b>BIODEMAT 2014</b> <i>Biodétérioration des matériaux:                      inter-actions biofilms-alliages                      métalliques ou bétons</i>  <b>(EFC Event No 377)</b>	Isabelle Frateur Laboratoire Interfaces et Systèmes Electrochimiques (LISE), Université Pierre et Marie Curie 4, place Jussieu 75252 Paris Cedex 05, France Fax: +33 1 44 27 40 74; E-mail: <a href="mailto:isabelle.frateur@upmc.fr">isabelle.frateur@upmc.fr</a> Website: <a href="http://www.polechimie-balard.fr/actualites/542/ecole-thematique-cnrs-biodemat-2014-couplee-au-xiieme-forum-jeunes-chercheurs-biodeterioration-des-materiaux-interactions-biofilms-alliages-metalliques-ou-betons.htm">http://www.polechimie-balard.fr/actualites/542/ecole-thematique-cnrs-biodemat-2014-couplee-au-xiieme-forum-jeunes-chercheurs-biodeterioration-des-materiaux-interactions-biofilms-alliages-metalliques-ou-betons.htm</a>
<b>13–15 October 2014</b> Frankfurt am Main, Germany	<b>Korrosion - Grundlagen und                      Untersuchungsmethoden</b> <i>Held in German</i>  <b>(Course)</b>	DECHEMA-Forschungsinstitut Nicola Gruß / Heidi Weber-Heun Theodor-Heuss-Allee 25 60486 Frankfurt am Main, Germany Tel: +49 69 7564 253 / 202 Fax: +49 69 7564 414 E-mail: <a href="mailto:kurse@dechema.de">kurse@dechema.de</a> Website: <a href="http://dechema-dfi.de/Korrosion.html">http://dechema-dfi.de/Korrosion.html</a>
<b>15–16 October 2014</b> Amsterdam, The Netherlands	<b>Corrosion under Insulation                      MasterClass Training</b>  <b>(Course)</b>	Eva Baskova Fleming Europe Tel: +421 257 272 116 E-mail: <a href="mailto:eva.baskova@flemingeurope.com">eva.baskova@flemingeurope.com</a> Website: <a href="http://energy.flemingeurope.com/corrosion-insulation-training">http://energy.flemingeurope.com/corrosion-insulation-training</a>
<b>15–17 October 2014</b> Elazig, Turkey	<b>XIII International Corrosion                      Symposium</b>  <b>(EFC Event No 375)</b>	Assist.Prof. Dr. Hulya Demiroren FIRAT University Faculty of Technical Education 23119 Elazig, Turkey E-mail: <a href="mailto:hulyademiroren@gmail.com">hulyademiroren@gmail.com</a> Website: <a href="http://www.korozyondernegi.org.tr/">http://www.korozyondernegi.org.tr/</a>
<b>16 October 2014</b> Frankfurt am Main, Germany	<b>Biokorrosion und Biofouling in                      wasserführenden Systemen</b> <i>Held in German</i>  <b>(Course)</b>	DECHEMA-Forschungsinstitut Nicola Gruß Theodor-Heuss-Allee 25 60486 Frankfurt am Main, Germany Tel: +49 69 7564 253 Fax: +49 69 7564 414 E-mail: <a href="mailto:gruss@dechema.de">gruss@dechema.de</a> Website: <a href="http://dechema-dfi.de/Biokorrosion.html">http://dechema-dfi.de/Biokorrosion.html</a>
<b>22–23 October 2014</b> Sosnowiec, Poland	<b>SURFPROTECT 2014</b> <i>6<sup>th</sup> International Fair of Surface                      Protection</i>	Expo Silesia Sp. z o.o. ul. Braci Mieroszewskich 124 41-219 Sosnowiec, Poland Tel: +48 32 7887 500 E-mail: <a href="mailto:exposilesia@exposilesia.pl">exposilesia@exposilesia.pl</a> Website: <a href="http://exposilesia.pl/surfprotect">http://exposilesia.pl/surfprotect</a>

Date/Venue	Conference / Course	Contact
<b>22–24 October 2014</b> Dresden, Germany	<b>Nano-scale Materials</b> <i>"Characterization Techniques and Applications"</i>  <b>(Course)</b>	DGM Susanne Grimm Senckenberganlage 10 60325 Frankfurt am Main, Germany Tel: +49 69 75306 757 E-mail: <a href="mailto:fortbildung@dgm.de">fortbildung@dgm.de</a> Website: <a href="http://www.dgm.de/">http://www.dgm.de/</a>
<b>28–30 October 2014</b> Jülich, Germany	<b>Hochtemperaturkorrosion</b> <i>Held in German</i>  <b>(Course)</b>	DGM Susanne Grimm Senckenberganlage 10 60325 Frankfurt am Main, Germany Tel: +49 69 75306 757 E-mail: <a href="mailto:fortbildung@dgm.de">fortbildung@dgm.de</a> Website: <a href="http://www.dgm.de/">http://www.dgm.de/</a>
<b>02–06 November 2014</b> Jeju Island, Korea	<b>19th International Corrosion Congress (ICC)</b> <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: <a href="mailto:icc2014.korea@gmail.com">icc2014.korea@gmail.com</a> Website: <a href="http://www.icc-net.org/">http://www.icc-net.org/</a>
<b>10–11 November 2014</b> Frankfurt am Main, Germany	<b>Korrosionsschutz verstehen</b> <i>Held in German</i>  <b>(Course)</b>	DECHEMA-Forschungsinstitut Nicola Größ / Heidi Weber-Heun Theodor-Heuss-Allee 25 60486 Frankfurt am Main, Germany Tel: +49 69 7564 253 / 202 Fax: +49 69 7564 414 E-mail: <a href="mailto:kurse@dechema.de">kurse@dechema.de</a> Website: <a href="http://dechema-dfi.de/Korrosionsschutz.html">http://dechema-dfi.de/Korrosionsschutz.html</a>
<b>13–14 November 2014</b> Frankfurt am Main, Germany	<b>Keeping your cool</b> <i>"Coatings for process industries, corrosion under insulation, process safety and corrosion, fire proofing"</i>  <b>(EFC Event No 379)</b>	DECHEMA e.V. Heike Geiling Theodor-Heuss-Allee 25 60486 Frankfurt am Main, Germany Tel: +49 69 7564 280 Fax: +49 69 7564 304 E-mail: <a href="mailto:geiling@dechema.de">geiling@dechema.de</a> Website: <a href="http://www.dechema.de/kyc2014">http://www.dechema.de/kyc2014</a>
<b>18–21 November 2014</b> Gliwice, Poland	<b>Corrosion 2014 (Gliwice, Poland)</b> <i>International Scientific Conference</i>  <b>(EFC Event No 376)</b>	Professor Maria Sozańska Faculty of Materials Engineering and Metallurgy Silesian University of Technology 40-019 Katowice, Poland Fax: +48 32 6034400 E-mail: <a href="mailto:maria.sozanska@polsl.pl">maria.sozanska@polsl.pl</a> Website: <a href="http://www.corrosion2014.polsl.pl/index.php?lang=en">http://www.corrosion2014.polsl.pl/index.php?lang=en</a>

Date/Venue	Conference / Course	Contact
<b>19–20 November 2014</b> Frankfurt am Main, Germany	<b>Korrosion be-greifen</b> <i>Held in German</i>  <b>(Course)</b>	DECHEMA-Forschungsinstitut Nicola Gruß Theodor-Heuss-Allee 25 60486 Frankfurt am Main, Germany Tel.: +49 69 7564 253 / 202 Fax: +49 69 7564 414 E-mail: <a href="mailto:kurse@dechema.de">kurse@dechema.de</a> Website: <a href="http://dechema-dfi.de/Korrosionsschaeden.html">http://dechema-dfi.de/Korrosionsschaeden.html</a>
<b>24–28 November 2014</b> Le Corum, Montpellier, France	<b>Matériaux 2014</b>	Pascale Bridou Buffet FFC 28, rue Saint-Dominique 75007 Paris, France Tel: +33 1 5359 0218 Fax: +33 1 4555 4033 E-mail: <a href="mailto:pascale.bridou@wanadoo.fr">pascale.bridou@wanadoo.fr</a> Website: <a href="http://www.materiaux2014.net/">http://www.materiaux2014.net/</a>
<b>30 November– 05 December 2014</b> Boston, MA, USA	<b>MRS Fall Meeting 2014</b> <i>2014 Fall Meeting &amp; Exhibit of the MRS</i>	Materials Research Society 506 Keystone Drive Warrendale, PA, 15086-7537, USA Tel: +1 724 779 3003 Fax: +1 724 779 8313 E-mail: <a href="mailto:info@mrs.org">info@mrs.org</a> Website: <a href="http://www.mrs.org/fall2014/">http://www.mrs.org/fall2014/</a>
<b>02–04 December 2014</b> Düsseldorf, Germany	<b>Valve World 2014</b> <i>9<sup>th</sup> Biennial Valve World Conference &amp; Exhibition</i>	Messe Düsseldorf GmbH Stockumer Kirchstrasse 61 40474 Düsseldorf, Germany E-Mail: <a href="mailto:valveworldexpo@messe-duesseldorf.de">valveworldexpo@messe-duesseldorf.de</a> Website: <a href="http://www.valveworldexpo.com/">http://www.valveworldexpo.com/</a>
<b>2015</b>		
<b>19–23 January 2015</b> Brussels, Belgium	<b>Electrochemical Doctoral School</b> <b>"Corrosion: from analysis to modeling"</b>  <b>(Course)</b>	Research group SURF Tom Hauffman Pleinlaan 2 1050 Brussels, Belgium Tel: +32 2 693538 Fax: +32 2 6293200 E-mail: <a href="mailto:thauffma@vub.ac.be">thauffma@vub.ac.be</a> Website: <a href="http://www.surfgroup.be/events">http://www.surfgroup.be/events</a>
<b>15–19 March 2015</b> Dallas, TX, USA	<b>CORROSION 2015 / NACE</b> <i>Conference and Exposition</i>	CaLae McDermott NACE Headquarters 1440 South Creek Drive Houston, Texas 77084-4906, USA Tel: +1 281-228-6263 E-mail: <a href="mailto:calae.mcdermott@nace.org">calae.mcdermott@nace.org</a> Website: <a href="http://www.nace.org/">http://www.nace.org/</a>
<b>22–25 March 2015</b> Angra dos Reis, Brazil	<b>16<sup>th</sup> ISE Topical Meeting</b>	International Society of Electrochemistry Rue de Sébeillon 9b 1004 Lausanne, Switzerland E-mail: <a href="mailto:events@ise-online.org">events@ise-online.org</a> Website: <a href="http://www.ise-online.org">http://www.ise-online.org</a>

<b>Date/Venue</b>	<b>Conference / Course</b>	<b>Contact</b>
<b>25–27 March 2015</b> Ravenna, Italy	<b>OMC 2015</b> <i>12th Offshore Mediterranean Conference &amp; Exhibition</i>	OMC Viale L.C. Farini 48121 Ravenna, Italy E-mail: <a href="mailto:conference@omc.it">conference@omc.it</a> Website: <a href="http://www.omc2015.it/?Lang=en&amp;">http://www.omc2015.it/?Lang=en&amp;</a>
<b>12–16 May 2015</b> Florence, Italy	<b>9<sup>th</sup> World Congress Aluminium Two Thousand</b> <i>together with the International Conference on Extrusion and Benchmark - ICEB 2015</i>	Interall Srl Tel: +39 059 282390 Fax: +39 059 280462 E-mail: <a href="mailto:aluminium2000@interall.it">aluminium2000@interall.it</a> Website: <a href="http://www.aluminium2000.com/">http://www.aluminium2000.com/</a>
<b>17–21 May 2015</b> Madeira Island, Portugal	<b>ASST VII</b> <i>7<sup>th</sup> International Aluminium Surface Science and Technology Symposium</i>  <b>(EFC Event No 387)</b>	E-mail: <a href="mailto:demac-asst2015@ua.pt">demac-asst2015@ua.pt</a> Website: <a href="http://www.ASST2015.com">http://www.ASST2015.com</a>
<b>24–28 May 2015</b> Chicago, IL, USA	<b>227<sup>th</sup> ECS Meeting</b> <i>Spring Meeting 2015 of the Electrochemical Society</i>	The Electrochemical Society 65 South Main Street, Building D Pennington, New Jersey 08534-2839, USA E-mail: <a href="mailto:meetings@electrochem.org">meetings@electrochem.org</a> Website: <a href="http://www.electrochem.org/meetings/biannual/fut_mtgs.htm">http://www.electrochem.org/meetings/biannual/fut_mtgs.htm</a>
<b>24–29 May 2015</b> Troia, Portugal	<b>EMCR 2015</b> <i>11<sup>th</sup> International Symposium on Electrochemical Methods in Corrosion Research</i>  <b>(EFC Event No 386)</b>	Joao Salvador Fernandes Dept. of Chemical Engineering Instituto Superior Tecnico Av. Rovisco Pais 1049-001 Lisboa, Portugal E-mail: <a href="mailto:scientific@emcr2015.org">scientific@emcr2015.org</a> Website: <a href="http://www.emcr2015.org/">http://www.emcr2015.org/</a>
<b>31 May–03 June 2015</b> Saint-Malo, France	<b>17<sup>th</sup> ISE Topical Meeting</b>	International Society of Electrochemistry Rue de Sébeillon 9b 1004 Lausanne, Switzerland E-mail: <a href="mailto:events@ise-online.org">events@ise-online.org</a> Website: <a href="http://www.ise-online.org">http://www.ise-online.org</a>
<b>10–11 June 2015</b> Leuven, Belgium	<b>Eurofinish 2015</b> <i>European trade fair for surface treatment technologies</i>	Ria Van den Bogaert Tel: +32 2 569 89 05 Fax: +32 2 569 89 06 E-mail: <a href="mailto:ria@eurofinish.be">ria@eurofinish.be</a> Website: <a href="http://www.eurofinish.be/EN/Contact">http://www.eurofinish.be/EN/Contact</a>
<b>15–17 June 2015</b> Ferrara, Italy	<b>Corrosione e Protezione 2015</b> <i>Giornate Nazionali sulla Corrosione e Protezione</i>  <b>(EFC Event No 389)</b>	Associazione Italiana di Metallurgia (AIM) P. le R. Morandi, 2 20121 Milano, Italy Tel: +39 02 76021132 Fax: +39 02 76020551 E-mail: <a href="mailto:info@aimnet.it">info@aimnet.it</a> Website: <a href="http://www.aimnet.it/gncorr2015.htm">http://www.aimnet.it/gncorr2015.htm</a>

Date/Venue	Conference / Course	Contact
<b>15–19 June 2015</b> Frankfurt am Main, Germany	<b>ACHEMA 2015</b> <i>31<sup>st</sup> International Exhibition-                      Congress on Chemical                      Engineering, Environmental                      Protection and Biotechnology</i>	DECHEMA Ausstellungs GmbH Theodor-Heuss-Allee 25 60486 Frankfurt am Main, Germany Website: <a href="http://www.achema.de">http://www.achema.de</a>
<b>(EFC Event No 388)</b>		
<b>24–26 June 2015</b> Skiathos Island, Greece	<b>ICEAF IV</b> <i>4<sup>th</sup> International Conference of                      Engineering Against Failure</i>	Mrs. Archontoula Koutsoliakou Tel: +30 2610 969498 Fax: +30 2610 997190 E-mail: <a href="mailto:ltsm@mech.upatras.gr">ltsm@mech.upatras.gr</a> Website: <a href="http://ltsm.mead.upatras.gr/lab/lang_en/conference/vi&lt;br/&gt;                     ew/6">http://ltsm.mead.upatras.gr/lab/lang_en/conference/vi                      ew/6</a>
<b>20–24 July 2015</b> Christ's College, Cambridge, UK	<b>Advances in Corrosion                      Protection by Organic Coatings</b> <b>(EFC-Event No 381)</b>	Professor Stuart Lyon, School of Materials (Corrosion and Protection), Room E21, The Mill, The University of Manchester, Oxford Rd. Manchester, M13 9PL, UK Tel: +44 161 306 4846 E-mail: <a href="mailto:stuart.lyon@manchester.ac.uk">stuart.lyon@manchester.ac.uk</a>
<b>06–10 September 2015</b> Graz, Austria	<b>EUROCORR 2015</b> <i>"Earth, Fire, Water, Air, Corrosion                      happens everywhere"</i> <b>(EFC Event No 391)</b>	ASMET Prof. Gregor Mori Franz-Josef-Str. 18 8700 Leoben, Austria E-mail: <a href="mailto:Eurocorr2015@asmet.at">Eurocorr2015@asmet.at</a> Website: <a href="http://www.eurocorr2015.org">http://www.eurocorr2015.org</a>
<b>04–09 October 2015</b> Taipei, Taiwan	<b>ISE Annual Meeting 2015</b> <i>66<sup>th</sup> Annual Meeting of the Inter-                      national Society of Electrochemistry</i>	International Society of Electrochemistry Rue de Sébeillon 9b 1004 Lausanne, Switzerland E-mail: <a href="mailto:events@ise-online.org">events@ise-online.org</a> Website: <a href="http://www.ise-online.org">http://www.ise-online.org</a>
<b>11–16 October 2015</b> Phoenix, AZ, USA	<b>228<sup>th</sup> ECS Meeting</b> <i>Fall Meeting 2015 of the                      Electrochemical Society</i>	The Electrochemical Society 65 South Main Street, Building D Pennington, New Jersey 08534-2839, USA E-mail: <a href="mailto:meetings@electrochem.org">meetings@electrochem.org</a> Website: <a href="http://www.electrochem.org/meetings/biannual/fut&lt;br/&gt;                     gs.htm">http://www.electrochem.org/meetings/biannual/fut                      gs.htm</a>
<b>14–16 October 2015</b> Istanbul, Turkey	<b>Paint Expo Eurasia 2015</b>	FairFair GmbH Max-Eyth-Straße 19 72644 Oberboihingen, Germany Tel: +49 7022 60255-0 Fax: +49 7022 6025577 Website: <a href="http://www.paintexpo.com/">http://www.paintexpo.com/</a>

2016

**11–15 March 2016**  
Vancouver, BC, Canada

**CORROSION 2016 / NACE**  
*Conference and Exhibition*

CaLae McDermott  
NACE Headquarters  
1440 South Creek Drive  
Houston, Texas 77084-4906, USA  
Tel: +1 281-228-6263  
E-mail: [calae.mcdermott@nace.org](mailto:calae.mcdermott@nace.org)  
Website: <http://www.nace.org/>

**29 May–03 June 2016**  
San Diego, CA, USA

**229<sup>th</sup> ESC Meeting**  
*Spring Meeting 2016 of the Electrochemical Society*

The Electrochemical Society  
65 South Main Street, Building D  
Pennington, New Jersey 08534-2839, USA  
E-mail: [meetings@electrochem.org](mailto:meetings@electrochem.org)  
Website: [http://www.electrochem.org/meetings/biannual/fut\\_mtgs.htm](http://www.electrochem.org/meetings/biannual/fut_mtgs.htm)

**21–26 August 2016**  
The Hague, The Netherlands

**ISE Annual Meeting 2016**  
*67<sup>th</sup> Annual Meeting of the International Society of Electrochemistry*

International Society of Electrochemistry  
Rue de Sébeillon 9b  
1004 Lausanne, Switzerland  
E-mail: [events@ise-online.org](mailto:events@ise-online.org)  
Website: <http://www.ise-online.org>

**11–15 September 2016**  
Montpellier, France

**EUROCORR 2016**  
*“Advances in linking Science to Engineering”*

**(EFC Event No 390)**

CEFRACOR  
28, rue Saint-Dominique  
75007 Paris, France  
Fax: +33 1 45 55 90 74  
E-mail: [eurocorr2016@cefracor.org](mailto:eurocorr2016@cefracor.org)  
Website: <http://www.eurocorr2016.org>

2017

**18–23 June 2017**  
Rhodes, Greece

**ICF 14**  
*14<sup>th</sup> International Conference on Fracture (ICF 14)*

Chair: Emmanuel E. Gdoutos  
E-mail: [egdoutos@civil.duth.gr](mailto:egdoutos@civil.duth.gr)  
Website: <http://www.icf14.org/>

**27 August–01 September 2017**  
Providence, RI, USA

**ISE Annual Meeting 2017**  
*68<sup>th</sup> Annual Meeting of the International Society of Electrochemistry*

International Society of Electrochemistry  
Rue de Sébeillon 9b  
1004 Lausanne, Switzerland  
E-mail: [events@ise-online.org](mailto:events@ise-online.org)  
Website: [http://www.ise-online.org/annmeet/next\\_meetings.php](http://www.ise-online.org/annmeet/next_meetings.php)