

EFC NEWSLETTER

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

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EUROCORR 2013

ESTORIL, PORTUGAL, 1 - 5 SEPTEMBER 2013

SPM, the Portuguese Society of Materials is extremely proud and enthusiastic to host the most important annual European event in the field of corrosion – EUROCORR 2013. For the second time in its history, next year's EUROCORR, the 33rd in the series, will take place in Portugal at the Estoril Congress Centre, conveniently located in the heart of the beautiful seaside resort of Estoril.



Cascais near Estoril, Portugal (Photo: Turismo Estoril, EM SA)

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Covering a large number of topics in the areas of corrosion science and anti-corrosion technologies, EUROCORR 2013 will focus on "*Corrosion Control for a Blue Sky*" with a hot topic on "*Innovative anti-corrosion strategies for materials in energy production systems*". A stimulating and varied program is planned and will include plenary and keynote lectures, oral presentations and poster exhibitions organized by EFC's 19 Working Parties. An extensive and dynamic exhibition will also be organized in parallel with the Congress.

The chairpersons for the event are **M. Fátima Montemor** and **João S. Fernandes**, two young and distinguished scientists in the corrosion field, who are very pleased to invite you to lovely Estoril, one of the leading conference and event venues in Portugal. They look forward to welcoming you to their beautiful country of Portugal for this impressive, exciting and unforgettable event.

Located on the Atlantic Coast and commuting distance to Lisbon, Estoril's natural beauty, Mediterranean climate, gardens, villas, palaces, restaurants and glamorous history make it a popular international tourist destination.



Palacio da Pena (Photo: Turismo Estoril, EM SA)

SPM intends to provide EUROCORR 2013 guests and their accompanying persons an unforgettable congress in an unforgettable place and we hope that you will join us.

Important Dates:

12 January 2013: Abstract submission deadline
April 2013: Notification to authors
15 July 2013: Submission of full manuscript

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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 European Federation of Corrosion I would like to thank you for your commitment to our organization and remind you that as a member of your national corrosion society you are automatically a member of the European Federation of Corrosion and count as one of the more than 25,000 corrosion professionals in Europe.

The European Federation of Corrosion is the largest corrosion organisation in Europe and in the world, representing over 30 national societies with members from 25 European countries and an increasing number of international members outside of the European Union as well. Our three secretariats are strategically located in London, Frankfurt and Paris.

At the EFC we are dedicated to advancing the science and engineering of corrosion and the protection of materials and to serving as an essential fulcrum for the promotion of cooperation throughout Europe and beyond. As part of your EFC membership you have access to exceptional services including human resources, networking opportunities, participation in the activities of the 19 corrosion specialty areas of our Working Parties, reduced attendance fees at our

annual EUROCORR conference - our flagship event and the largest corrosion conference in Europe - as well as a substantial discount on our continuously published EFC Greenbook Series covering all areas of corrosion and produced by world renown corrosion experts, most of whom are our Working Party members. We are continuously working to improve the services to our members and your comments or suggestions would certainly help us in this task.



Philippe Marcus

I look forward to your participation in our many EFC activities and to meeting you personally at EUROCORR 2012 in Istanbul this 9th-13th of September.

Sincerely yours,

Philippe Marcus

EFC ADMINISTRATION UPDATE

In Remembrance of Dr. Paul McIntyre

We are very sorry to announce that **Paul McIntyre** – former EFC Scientific Secretary and honorary Life Member - passed away on June 26th of this year.



Paul died at home in Surrey, surrounded by his family. He leaves Helen, his wife of 42 years, three children and four grandchildren.

Upon entering the rather imposing Regency building that houses the EFC London secretariat for the very first time expecting to encounter that propriety and reserve that the British are so famous for, I was immediately approached by a man so overtly friendly and welcoming that I couldn't help but feel at ease; this was Paul. The following comments gathered from those who had the good fortune to have worked with Paul McIntyre throughout his long career are proof that first impressions are, more-often-than-not, spot-on.

Juliet Ippolito, EFC Scientific Secretary/Public Relations Officer

"Paul was not just an excellent colleague, he was also, for so many of us, a friend. We will all miss him."

Philippe Marcus, EFC President

"With his friendly and precise nature, Paul was a key person in keeping contact with our member associations and running the FEMS administration."

Ehrenfried Zschech, President of the Federation of European Materials Societies (FEMS)

"I just want to convey to you, the working party chairs, and other colleagues my heartfelt sympathy on the loss of this fine gentleman. Paul worked to the highest standards and was such a nice person. He was always professional, had impeccable manners and was extremely organized and dedicated. I know you will miss him very much, as will everyone who knew him."

Linda Goldberg, Director, Technical Activities NACE International

"Paul's entire career, whether in industry or as an independent consultant, has been developed to promoting professionalism in his field."

Stuart Lyon, Corrosion and Protection Centre, School of Materials The University of Manchester.

"Following a career in the energy industry, Paul contributed with great generosity to the corrosion community by being on various committees, NACE, ICorr, EFC and British standards. I got to know Paul when he kindly accepted my invitation to be on the steering committee for the MSc in Corrosion of Engineering Materials at Imperial College and where I witnessed and appreciated his selfless contributions and caring attitude. He will be sadly missed."

Paulette Sidky, The Institute of Corrosion

"...the introduction of Paul McIntyre into the EFC was probably the most beneficial task I had performed for the EFC. Thus, as Paul grew into the post it became clear that in addition to his scientific and technical qualifications, his attributes of thoroughness, patience, integrity, and unswerving dedication to all aspects of the work - minute-taking, technical editing of publications, even negotiations with relevant government departments and many other activities - constantly ensured the continuing, indeed accelerating, progress of the Federation. We owe him a lot not only for his work within Europe, but also in improving the visibility and reputation of the EFC worldwide.

Thank you Paul."

Tony Mercer, (in retirement, Seaford, Sussex, UK)

“Paul received two notable awards in recognition of this side of his work: the 2003 T B Marsden prize of the IoM3 for his considerable professional achievements in promotion of standards, education and publishing in corrosion and materials; and most recently, Honorary Membership of the EFC - one of a very select few, which number no more than 5 so far in the 52 year history of the EFC. This award was presented to him at the Eurocorr 2011 Congress in Stockholm, before an international audience of over 800 of his long standing contemporaries as well as those just starting out on their careers.

Today’s European corrosion community would look markedly different, and for the poorer, if Paul had not devoted a significant part of his life to the EFC. His lasting memory and contributions are undoubtedly writ large and long in the annals of the EFC.”

Don Harrop, former EFC President

In memory of Dr. Paul McIntyre (1945-2012)

You have fought the good fight, you have finished the race, you have kept the faith.



MEMBER SOCIETY NEWS AND PROFILES

News from CEFRACOR, the “Centre Français De l’anticorrosion”



The "JST 2012", les “Journées Scientifiques et Techniques 2012 du CEFRACOR »

A successful initiative to be renewed next year!

Opened by Philippe Marcus, president of the Scientific and Technical Committee and Marcel Roche, CEFRACOR president, the "JST 2012" took place from **May 31st to June 1st 2012**, at the *Ecole Nationale Supérieure de Chimie de Paris / Chimie ParisTech*. This unprecedented event, which was open to all CEFRACOR members free of registration and fee, gave all those present the opportunity to learn more about the activities of the 13 “Commissions d’études” (Working Parties) of CEFRACOR. The

“Commissions d’études” gave presentations on their organizations including the research and studies they are currently conducting, taking into consideration the normative regulations, and reported on their scientific and technical interactions with the corresponding Working Parties of the European Federation of Corrosion. All those present took full advantage of the opportunity of better define common interests and interact with their professional counterparts and colleagues. Some of the attendees utilized the "JST 2012" as a venue to hold their regularly-scheduled meetings while others focused on more scientific or technical aspects.

From 60 to 80 members attended the 13 sessions of the commissions that were held in two parallel rooms. Presentations are available to CEFRACOR members

and can be found in the “restricted area” of the website.



The “Grande Médaille du CEFRACOR” 2011 awarded to Dr. Stuart LYON

The “Grande Médaille du CEFRACOR” for 2011, bearing the image of Prof. Chaudron, was awarded to a non-French laureate, **Dr. Stuart Lyon** and was presented by Damien Féron. Presently Head of the Corrosion and Protection Centre and the AkzoNobel Professor of Corrosion Control Technology at the School of Materials, University of Manchester, UK, Dr. Lyon has an MA (1976) and a PhD (1983) from Cambridge University and a DSc (2002) from UMIST.

He is also a Fellow of the U.K.’s Institute of Corrosion (ICorr) and of the Institute of Materials Minerals and Mining (IoM3).

Dr. Lyon has published 86 papers in peer-reviewed journals and a further 20 in peer-reviewed conference proceedings, plus 15 additional conference papers. Upon receiving his distinction, Dr. Lyon gave a speech at the conclusion of the annual General Assembly of CEFRACOR on June 21st, 2012.



Stuart Lyon and Marcel Roche



Damien Féron, Stuart Lyon and Marcel Roche (left to right)



News from ACA, the Australasian Corrosion Association

Australasian Corrosion Association 2012 Conference – Melbourne, Australia

After hosting a successful 18th International Corrosion Congress in 2011, The Australasian Corrosion Association Inc (ACA) returns its focus to its annual conference in 2012.

As an island continent with the majority of its infrastructure built on the coast, Australia is highly vulnerable to corrosion. This environment allows the ACA to conduct regular technical activities throughout the year as well its three day annual conference which attracts 500 delegates.

The ACA's Corrosion & Prevention 2012 conference is themed '**Corrosion Management for a Sustainable World: Transport, Energy, Mining, Life Extension and Modelling**' and will be held in Melbourne, Australia on **the 11-14 November 2012**.

The conference has attracted speakers from across the globe with over 120 abstracts submitted. Papers will be peer reviewed to ensure a high quality technical congress and published for all delegates. The conference will also conduct open industry related forums which allow delegates to openly discuss experiences and issues amongst industry peers.

Delegates will network, learn and exchange information on the latest international research and professional practice in corrosion mitigation with world class researchers, practitioners and users. Topics will range from the practical aspects of coating application, corrosion modelling to advances in cathodic protection; so there will be something available for everyone.

"The science and engineering of corrosion remains an important issue for all engineers. In fact, the combination of the world's ageing infrastructure and the demand for materials to enter next-generation applications and environments fuels the need for corrosion R&D. The range of corrosion issues that cover design, materials selection, predictive modelling and application of protective measures such as coatings or cathodic protection - are all critical to the our modern way of life. The ACA's 2012 conference is a great opportunity to visit such topics in one of the world's corrosion research hubs in Melbourne" said Technical Chair Dr. Nick Birbilis.

The ACA conference is also strongly supported by industry with supplier of protective coatings Dulux as the major sponsor and a 60 booth exhibition which will also be open to the public during set times. A full list of sponsors and exhibitors can be viewed on the conference website – www.acaconference.com.au.

Registrations are now open and the ACA encourages the international corrosion industry to venture to Melbourne, Australia which is consistently voted the most liveable city in the world.

The Australasian Corrosion Association is a not-for-profit industry association established in 1955 to service the needs of Australian and New Zealand companies, organisations and individuals involved in the fight against corrosion. For further details: www.corrosion.com.au



NEW EFC MEMBER SOCIETY:

The Association for Protection against Electrolytic Corrosion

APCE, the *Associazione Protezione Contro Corrosioni Elettrolitiche*, Milan, Italy, is a non-profit cultural and scientific association created in 1981 in response to the diverse needs of industries and managers of underground and buried structures. Its purpose is to improve understanding and join together applicable entities with the common goal of guaranteeing the essential security and quality control to enable gas distributors to furnish safe and efficient service to its clients.

APCE's purpose is to promote and coordinate collaborative initiatives between its associates in order to study and resolve the problems connected with the protection of metallic structures from electrolytic corrosion including the electrical interference that can take place between structures, and to promote the development of techniques to monitor and protect metallic underground structures. It also promotes and organizes congresses, meetings and courses to educate and divulge corrosion phenomenon knowledge.

Its membership is made up of public and private entities (societies, companies and institutes) that deal with metallic structures or emit continuous underground currents or are in some way connected to the protection of said structures from electrolytic corrosion. It is recognized by the Italian Authority for Electric Energy and Gas as a competent, technical organism for the creation of guidelines in the field of cathodic protection of metallic pipelines for the transport and distribution of natural gas and connecting flow lines to nearby storage sites.

Local Members include gas and water management companies and boards, Local Councils, Oil and Gas Companies, Licensed rail lines, Research, Design and Service Companies and Associations, including the Italian Ministry for Infrastructures and Transport, the Ministry for Economic Development, Communications Dept., ANIGAS, CIG, the Italian Gas Committee, ENEL Rete Gas, Italgas, RFI (the Italian Railway) and Snam Rete Gas.

EFC Member Societies and Affiliate Members

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

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

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

RECENT EFC SPONSORED EVENTS

EFC Event No 352:

"Corrmat 2012"

20th Symposium on the Protection of Materials and Industrial Finishes

Zgrebu, Croatia, 17 April 2012

On April 17, 2012 the Croatian Society for Materials Protection organized their 20th Symposium in Zgrebu on the protection of materials and industrial finishes - **Corrmat 2012**. The one-day symposium gathered together over 50 participants from industry and scientific institutions; all of whom are involved in corrosion processes and protection of materials.

The program included:

- Various aspects of corrosion and material protection
- A plenary lecture by J. W. Erning entitled: *"Qualification of stainless steels for drinking water applications: from Round-robin testing to EN 16056"*
- The influence of surface treatment on corrosion property of material for turbine blades
- Monitoring of cathodic protection on boats
- Corrosion risk analysis as decision criterion for the application and optimization of drinking water corrosion inhibitors
- Corrosion inhibition of carbon steel in water using gluconates
- Preparation and protection of artificial patina on bronze
- Influence of deformation-induced martensite on properties of austenitic stainless steel
- Microstructural aspects of pitting in commercial Al-alloys in as-cast condition
- Surface preparation by sodium and dry ice, application and results
- The risk of environment pollution through the application of organic paints

- Passivation procedure in hot dip galvanizing process
- Modeling of corrosion in reinforced concrete structures exposed to mechanical damages and chlorides.

Papers from the Symposium were peer reviewed and published in the proceedings.



Participants in Corrmat 2012

The symposium was deemed a great success by all who attended and met the objectives of contributing to the exchange of experience between experts in the field of corrosion of materials, application of inhibitors, surface pretreatment and industrial finishes, while further strengthening cooperation amongst all those present.

EFC Event No 356:

5th Annual Technical and Scientific Conference of the Polish Corrosion Society on

“Modern anticorrosive Technologies – MOLO 2012”

Smardzewice, Poland, 23-25 April 2012



From the 23rd to the 25th of April at the MOLO hotel Smardzewice, Poland, PSK's annual scientific and technical conference entitled **“Modern anticorrosion Technologies”** took place. The conference, strategically held over April 24th Corrosion Awareness Day, was sponsored by Graco, International Protective Coatings, Jotun, Lankwizter, Malchem, PPG Coatings Poland, Sika SPZP Corropol, Teknos, Zingametall Poland, ZinkPower and the Polish Ministry of Education. All electronic conference materials were prepared, as they are every year, by Teknos.

Some of the papers presented in the plenary sessions were as follows:

- *“Paints – their history and the direction of their development”* presented by Andrzej Kubacki of Teknos who gave a history of the development of paint products starting with prehistory up to the present day, providing a historical sequence for the introduction of synthetic resins, alkyds, chlorinated rubber and polyvinyl paints and epoxy resins which are currently the most frequently used for anticorrosion protection today and are still being modified to increase their protection and application features.
- *“European Union Regulation on building materials and their practical aspects with respect to circulation and use in Poland”* presented by Mr Michał Wójtowicz, the Director of the Polish Building Institute who spoke about former European Regulations which have been replaced with building directive nr 89/106/EWG by regulation PE&R(UE) nr 305/2011 and will bring about a series of changes in national domestic regulations concerning the production and introduction of building materials and requirements for a balanced use of natural resources.
- *“Science combating corrosion”* presented by Mrs Małgorzata Zubielewicz of the IMPIB Institute who presented the results of a number of research projects in Poland from 2005 to 2011 related to

corrosion protection and the viability of their practical application.

- Anna Gerymska from the Office of Technical Supervision spoke about surface protection within the context of the PN-EN 1090 series of standards for the manufacturing of steel and aluminum structures and the application of anticorrosion protection.
- On April 24th's Corrosion Awareness day, Mr. Andrzej Królikowski presented his highly original paper entitled: *“Tortuous sources of corrosion awareness”* where, in a light-hearted manner, he spoke about the anticorrosion awareness of the average citizen. Sławomir Cebo of Skanska S.A. Department, Cracow, gave a presentation on the technical and organizational aspects of solutions used on part of the A1 highway, specifically the bridge over the Vistula river MA-91 between Nowe Marzy and Grudziądz.
- Mr Michał Jaczewski of Tikkurila Polska presented a topic on design errors after analyzing 59 projects and tender specifications concerning anticorrosion protection and fire protection with the use of paint material. Design errors and improper workmanship was the theme presented by Mr Wojciech Sokólski of SZPP Corropol who demonstrated the resulting errors made in the design and installation of the cathodic protection application to underground structures which often lead to economic loss due the diminishing lifetime of protected structures in malfunctioning installations and undermine the trust in cathodic protection technology.

Over the following 2 days some of the other presentations included:

- Mrs Agnieszka Królikowska of IBDIM Institute: *“The influence of applied technology and products on lifetime, cost and the environmental friendliness of anticorrosion protection.”*

- Mr Robert Chrzanowski of the Municipal Road Authority of Warsaw on investors' requirements of the Warsaw Municipal Road Authority with regards to anticorrosion protection of new and existing steel and concrete structures.
- Mr Andrzej Brandt of the Anticor Agency on the optimization of anticorrosion protection costs in the manufacturing of steel structures.
- Mr Paweł Franczak and Mr Wiesław Pieniążek (PPH Anticor, Wieliczka) on methods to repair pipeline damages by the 3XE method.
- Mr Edward Firek of the Technical-Commercial office AKO, Warsaw on the variety of program courses for paint applicators offered within the scope of PSK.

PSK awards were presented for the best master's thesis in the field of anticorrosion protection. The esteemed "Chapter of Awards" was given to **Mr. Bartosz Jarzębiński** who took first place for his thesis "*The influence of chosen methods of welding to the properties of zinc coatings on steel plates*" while a distinction went to **Mr. Paweł Ficek** for his thesis "*Designation of influence of additives in zinc alloys to anticorrosion protection.*" Both of these studies were carried out at Silesian Technical College.

In the category of licentiate thesis, first prize was awarded to **dr eng. Stefan Kurek** for his paper "*Anticorrosion and adsorption properties of additives to lubrication oils tested by electrochemical methods*" and a distinction went to **Ms Katarzyna Gbur** from Warsaw Technical College for her work entitled "*The influence of electrical field on the speed of transportation of penetrating inhibitors of corrosion of steel in concrete.*"

At the end of two of the conferences a draw for the winners of the competition sponsored by the journal "Protection against Corrosion" took place and a

yearly subscription was won by **Stanisław Pniewski** (Kaefer) while the book: "The Corrosion of Character" was won by **Mrs Teresa Rybak** (Polimex Mostostal) and a CD entitled: "Corrosions" went to **Katarzyna Gbur** (1st prize for thesis awardees).



Presentation of the PSK thesis award to Katarzyna Gbur

During the traditional "round table" discussion, topics for next year's conference were established and will include sessions on: concrete structures, zinc hot dip coatings, public tenders and guarantees by the applier, paint producer or investor and securing safety on anticorrosion works.

At the conference's conclusion, the President of the Polish Corrosion Society, Mrs Agnieszka Królikowska, thanked the current PSK secretary Mrs Irena Pękala who was leaving her position by June and will be replaced by the new secretary, Urszula Paszek from the Road and Bridge Research Institute.

Małgorzata Zubielewicz
PSK spokeswoman

EFC Event No 355:

“Metals and their Corrosion Behaviour in Marine Environments”

- A one day seminar

Rotherdam, South Yorkshire, UK, 30 May 2012

The marine environment is harsh and unforgiving and due to ever-increasing materials' performance requirements, careful selection of the appropriate metals is more challenging than ever. To address this, European Federation of Corrosion's Working Party 9 Marine Corrosion and NACE STG 44 drew together specialists from across the metals engineering spectrum to publish a definitive reference book for the selection and performance of metals in seawater applications. No. 63 in the EFC Green book series, the book, entitled “*The Corrosion Performance of Metals for the Marine Environment: a Basic Guide*”, was written as an informative guide for engineers working in marine applications from oil & gas, renewable energy, naval and maritime transport through to subsea communications.

Back in May of this year, a one day marine corrosion seminar was hosted by the National Metals Technology Centre, NAMTEC, in Rotherham, South Yorkshire, U.K. Considered a unique event, the seminar provided an overview of each chapter of the EFC/NACE joint-publication, bringing together all of its original authors. The aim of the book, and of the seminar itself, was to provide engineers who are new to the marine environment, as well as those requiring an update, with an overview of the main alloys, basic properties, corrosion behaviour and applications metals are used for. Focus was on the knowledge required to allow each type of alloy group to be used successfully to their full potential, rather than discussion of how they might compete against each other. Nevertheless, upon coupling alloys together, galvanic behaviour is one area where consideration across the alloy groups is required and, with this in mind, a special section was dedicated to this topic.

In order to cover such a wide spectrum of information effectively, the presenters were a mixture of invited speakers and authors including:

Irons and Carbon Steels: Stuart Bond, TWI

Stainless Steels: Alan Harrison, British Stainless Steel Association

Aluminium Alloys: Clive Tuck, Lloyds Register

Copper Alloys: Carol Powell, Copper Development Association

Nickel Alloys: David Jordan, Nickel Institute

Titanium Alloys: Ron Schutz, RTI, USA

Galvanic Corrosion: Roger Francis, Rolled Alloys

60 delegates attended the event, including roughly 20 from metals semi-fabricators and suppliers, 20 from plant and equipment producers, and 10 from corrosion services companies. Although the day was unusually hot for the UK, all delegates showed their interest and provided many searching questions right up to the end of the afternoon and ensuing feedback was excellent. Each delegate received a complimentary copy of EFC publication as a key reference source for the future.

The seminar and publication were a culmination of work by EFC's Working Party 9 on Marine Corrosion under the chair of Ulf Kivisäkk. Carol Powell, the deputy chair, and Roger Francis, ex NACE director, were instigators and joint editors of the publication which was created in response to the growing need they foresaw in the queries arising and the problem areas they were being asked to consider.



Roger Francis



Carol Powell

“The Corrosion Performance of Metals for the Marine Environment: a Basic Guide” is published by Maney Publishing and can be purchased through the EFC website under the Publications section.

EFC Event No 347:

XI International Conference

“Problems of Corrosion and Corrosion Protection of Structured Materials – CORROSION-2012”

Lviv, Ukraine, 4-6 June 2012

The XIth International Conference “*Problems of Corrosion and Corrosion Protection of Structural Materials*” (CORROSION-2012) organized by the Ukrainian Association of Corrosionists, Karpenko Physico-Mechanical Institute, and the Ivano-Frankivsk National Technical University of Oil and Gas under the auspices of the European Federation of Corrosion, the National Academy of Sciences of the Ukraine, the Ministry of Education and the Youth and Sports of Ukraine, was held in Lviv from 4th to 6th June 2012.

Over 150 people attended the conference where more than 140 oral and posters presentations were given by scientists from the Ukraine, Italy, Germany, Poland, Portugal, India, Japan, Russia, Turkey, Kazakhstan, Azerbaijan and others countries.

Papers were devoted to fundamental aspects of corrosion and corrosion assisted mechanical fracture, hydrogen and gas corrosion, new corrosion resistant materials and protective coatings, inhibitor and biocidal protection, electrochemical protection, testing methods and corrosion control, corrosion protection of pipelines, power and chemical equipment, and the environmental problems related to corrosion. Focus was on the corrosion-mechanical fracture of materials as one of the most dangerous types of corrosion of metal structures and to the development of methods of equipment corrosion monitoring including gas and oil main pipelines and the creation of protective coatings.

Three round table discussions took place on:

- The use of thermal spraying and other coatings for corrosion protection of metal constructions;
- Corrosion protection in oil and gas industry; and

- Corrosion protection of power and chemical equipment.

CORROSION-2012 proceedings - 800 printed pages in total - are published in a two-volume special issue of the journal: “Physico-Chimicna Mehanika Materialiv”. Best presentations by young scientists were honoured with Conference Diplomas.



Head of Conference Organizing Committee, the President of the Ukrainian Association of Corrosionists, Prof. V. Pokhmurskii presents Conference Diploma to Dr. Gökhan Gece from Bursa Technical University (Turkey) for best presentation.

The next XII International Conference “Problems of Corrosion and Corrosion Protection of Structural Materials” will be held in June 2014 in Lviv.

NEWS FROM THE WORKING PARTIES

EFC Working Party 15: Corrosion in Refinery Industry

Report EFC Working Party 15 annual Spring meeting

Working Party 15's annual spring meeting entitled "Corrosion in refineries" took place on the 26th of April 2012 in Amsterdam where it was generously hosted at the Amsterdam Shell Technology Centre. 33 participants from Europe, the USA and Singapore, attended the meeting where the main topic of information exchange and discussion was on corrosion failures in specific refinery conditions, high temperature hydrogen attack of carbon, stress relaxation cracking of stainless steels and new technologies for the treatment of water in boilers. Advanced monitoring techniques were also presented in relation to their application in refinery plants. A part of the meeting was also dedicated to non-conventional materials such as graphite and silicon carbide that can be valuable when used for specific corrosive refinery applications. An update of the EFC guideline n°55 "Corrosion under insulation" was also discussed during a specific part of the meeting.



For more information on Working Party 15 "Corrosion in Refineries" activities, please visit their homepage at:

<http://www.efcweb.org/Working+Parties/WP+15.html>

EFC WP 15 Refinery Corrosion Group led by Dr. Francois Ropital, would like to express thanks to Shell Technology Centre for hosting this meeting in Amsterdam with special thanks to Johan van Roij for organising the meeting.

EFC Working Party 11: Corrosion of Steel in Concrete

Task Group on the Planning, execution and evaluation of Corrosion Surveys of steel in concrete

In remembrance of our colleague Thomas Frølund

Contributors:

Michael Raupach, Ulrich Schneck (chairmen), Ueli Angst, Günter Binder, Dubravka Bjegović, Mahdi Chini, Thomas Frølund, Roberto Giorgini, Joost Gulikers, Karla Hornbostel, Sylvia Kessler, Jürgen Mietz, Roar Myrdal, Peter Nygaard, Kai Osterminski, Rob Polder, Kenji Reichling, Marijana Serdar, George Sergi, Yves Schiegg, Guy Taché, Øystein Vennesland, Henryk Wojtas

Preface

Authors: Michael Raupach, Ulrich Schneck

In 2007 a new Task Group from Working Party 11 of the European Federation of Corrosion working in the area of corrosion of steel in concrete was initiated on the topic of the planning, execution and evaluation of corrosion surveys of steel in concrete. This newly formed Task Group, created out of previous task groups, met at COWI in Copenhagen and at CiTec in Dresden. The Task Group chaired by Ulrich Schneck and Michael Raupach, Chairman of EFC Working Party 11, has met five consecutive times to discuss the topic and prepare the papers for a special issue of Materials and Corrosion: 2008 in Utrecht, 2009 in Paris, 2010 in Trondheim, 2011 in Zadar and in Aachen.

As its contributors reflect, Working Party members from Croatia, France, Germany, Great Britain, the Netherlands, Norway and Switzerland all participated in the activities of the Task Group which provided a forum for essential accumulated experience and opinions-swapping from different European countries to take place. .

Non-destructive testing (NDT) is increasingly being utilized for detecting and localising corrosion problems in steel reinforced concrete structures. Nowadays many tools and measurement systems are available either for single (on-time) condition surveys of large concrete surfaces, or as sensor devices embedded at specified locations in concrete structures for continuous health monitoring.

Alternately, the corrosion of reinforcement materials cannot be reliably evaluated by the taking of single readings or by sampling data of only one parameter for no individual type of measurement in itself allows an appropriate, direct correlation with corrosion activity or even with the electrochemical state of the embedded steel, because the readings are influenced by several factors. Consequently, the data evaluation and conclusions cannot be provided in a prescriptive way – and the interpretation has to be developed for individual structures or even individual components and the criteria adopted is valid for the weather conditions prevailing during the survey. A typical example is potential mapping and the suggested interpretation according to ASTM C 876, which is valid only under certain conditions (normal, evenly-distributed concrete humidity, concrete made with ordinary Portland cement) and may result in severe misinterpretations if not handled with great care and understanding.

In practice often measurement methods are chosen inappropriately, and attempts are made to formally interpret the results according to recommendations provided in guidelines and prescriptions. Furthermore, there is a gap between the measurement (data sampling), the diagnosis (data interpretation) and the therapy (conclusions, actions against corrosion).

This publication intends to help close this observed gap between executing measurements and obtaining the appropriate interpretations and conclusions. Owners and consultants who are not specialised in corrosion science shall receive helpful information on

- existing measurement methods: working principles, merits and limitations
- how to plan corrosion surveys
- how to interpret non-destructive data obtained on site (i.e. during the survey) for an appropriate localisation of areas suspect of reinforcement corrosion
- how to combine the information from data readings by different measurement methods to achieve a sound understanding of the condition, the future performance and the maintenance of a corroding reinforced concrete structure
- experiences from case studies
- what to expect from corrosion surveys.

Certainly, this cannot replace the investigators own long-term experience, but it is intended to promote a better understanding of the backgrounds and the beneficial possibilities of corrosion surveys.

The results of the discussions of the task group are accumulated in a series of papers contained a special issue of “Materials and Corrosion”.

WP 11 Authors believe that the work presented in this special issue is valuable information for owners of buildings, designers, engineers and executing companies in the field of maintenance of structures

We would like to thank all active members for their contributions and especially Kenji Reichling for his excellent job as secretary of the task group!

Ulrich Schneck

Michael Raupach

EFC Task Force: CO₂-Corrosion in CCS-Applications



Chairman:

Dr. Ralph **Bäbler**
BAM - Bundesanstalt für
Materialforschung und
-prüfung
Fachbereich 6.2:
Korrosionsschutz von
technischen Anlagen und
Geräten
Unter den Eichen 87
12205 Berlin, Germany
Phone: +49-30 8104 3155
Fax: +49-30 8104 1737
Email:
ralph.baessler@bam.de

Mission

With the increase of awareness related to Carbon Capture and Storage (CCS) technology and the worldwide introduction of this technique to many fields in order to minimize carbon dioxide emission to the atmosphere, the safety of this technology is a widely discussed problem.

Regarding corrosion, CO₂ and its precipitations can interact with the materials used for compression/transportation/injection of emission gasses from combustion processes. Therefore, selection of appropriate material and understanding the mechanisms are key factors in order to increase the safety and reliability of the CCS technology as a basis of its realizability.

This task force is devoted to the evaluation of the behavior of different materials in certain CO₂-media considering process related circumstances and technical possibilities in Europe and worldwide. Open questions shall be addressed, possible solutions shall be elaborated and shown.

The new task force aims at using the European network of experts to collect and merge the present understanding in the field of CO₂-related corrosion, identify the needs for further research, both in basics and application, evaluate existing testing methods, promote new investigation methods, and foster normative work on an international basis.

The task force addresses the following general topics:

Research

- Identification of the most important factors influencing the corrosion system as the basis of research and development.
- Improvement of the understanding of the reaction mechanisms and interactions of precipitations with the different materials used in gaseous, dissolved and supercritical CO₂, where appropriate cooperation with other EFC Working Parties, especially WP 13 and NACE International is intended.

Investigation and Testing

- Evaluation and optimization of existing and new methods for investigation and testing of the corrosion resistance of materials.
- Emphasis shall be put on the evaluation and further development of short term testing for life time prediction.

Knowledge transfer

- Review, systematization, equalization and dissemination of the current knowledge of corrosion resistance and application limits of the respective materials.
- Organization of workshops, seminars, and symposia with respect to basic understanding and industrial application. This shall include mechanism analysis and service strategies.

This task force will deal with following items of major interest:

- Test methods
- CO₂-effect concerning scaling, general and pitting corrosion
- Interactions with typical precipitations like SO_x, NO_x, H₂S and water
- Qualification of carbon and stainless steels
- Special considerations within the different parts of an installation (separation, compression, transport and injection)
- Problems of composition variations in practice

First TF meeting

At EUROCORR 2012, Istanbul, Turkey

Working Party Spotlight:

EFC Working Party 10: Microbial Corrosion



Chairman:
Turid Liengen
Statoil ASA
Technology, Projects and
Drilling
Technology Excellence
Facilities and
Operational Technology
Materials technology
P.O. Box 1004
3905 Porsgrunn, Norway
Phone: +47-481 29 357
Fax: +47-35 56 36 59
Email: turl@statoil.com

As of January 2012 Turid Liengen of Statoil ASA has taken over this chairmanship of this working party on behalf of BIOCOR, a Marie Curie Initial Training Network funded under the EU Seventh Framework “People” that was initiated back in 2009 by Working Party 10 and running under the coordination of Regine Basséguy of CNRS-Toulouse, France

Working Party Aims:

The main purpose of the working party is to increase basic understanding of biocorrosion. This general theme is organised in three thematic areas:

1. Mechanisms of biocorrosion and analytical approaches

2. From basic understanding towards knowledge-based risk assessment, monitoring and mitigation techniques
3. From basic understanding towards new processes.

Active Working Party Members:

Currently, active members in the Working Party are AREVA (Germany), Commissariat à l'Energie Atomique (France), Det Norske Veritas AS (Norway), Lab. Interfaces et Systèmes Electrochimiques (France), Laboratoire de Génie Chimique (France), Laboratoire Physico-Chimie des Surfaces (France), M-I SWACO (Norway), Nanochem (Hungary), Research Centre for Natural Sciences (Hungary), Ricerca sul Sistema Energetico SpA (Italy), Statoil (Norway), Swerea KIMAB AB (Sweden), Universidade Nova de Lisboa (Portugal), Université Catholique de Louvain (Belgium), University of Duisburg-Essen (Germany) and University of Portsmouth (United Kingdom). All members are via national Corrosion Societies members of the EFC.

Working Party Activities:

Since EUROCORR 2011, the working party organizes a special session dedicated to BIOCOR, whose main focus is within two large industrial sectors: the oil and gas industry and the power supply facilities. Within these two sectors four research sub-programmes were selected:

- Water injection systems
- Systems for handling stabilized oil
- Cooling systems in energy facilities
- Nuclear waste geological disposal

For a complete listing and full details on the people, history, aims, projects, publications, prizes, scheduled events and any other activities taking place within the EFC's 19 working parties of corrosion specialty areas, please refer to <http://www.efcweb.org> under our “Working Parties” section on the home page.

PREVIEW: EUROCORR 2014 & 2015



NEWS ON EUROCORR 2014

Pisa, Italy

8-12 September 2014

Associazione Italiana di Metallurgia – AIM is very pleased to announce that the **European Corrosion Congress EUROCORR 2014** will be held in **Pisa, Italy, from 8 to 12 September 2014**. The Congress – organized by AIM on behalf of the European Federation of Corrosion EFC - will take place at Pisa's

Palazzo dei Congressi located just a few steps away from the city's historical center.



The city of **Pisa** is host to treasures of priceless value, making it one of Italy's most important cities of art and Piazza dei Miracoli, with its world-famous leaning tower, is the hub of its prized artistic and architectural offerings.

Following the prestigious tradition of the previous congresses in the EFC's EUROCORR series, AIM intends to build upon past successes and reconfirm EUROCORR as the premier forum in the field of corrosion science and engineering, while fostering information transfer and experiences amongst delegates with common academic and industrial backgrounds so as to yield information on recent developments in all areas of corrosion protection. The main Theme of EUROCORR 2014 will be ***“Improving materials durability: from cultural heritage to industrial applications”*** and its aim will be to assert the critical role of corrosion science, technology and engineering in extending the lifecycle of materials in different fields of application.

The scientific program will be comprised of plenary meetings, keynote lectures, workshops and oral and poster presentations articulated into sessions referring to the 19 EFC Working Parties specialty areas of corrosion.

The Congress will be accompanied by an exhibition where companies, institutes and other concerns dealing with corrosion prevention will have an opportunity to showcase products and services.

Also on offer will be a rich social program designed to give delegates pleasurable opportunities to meet informally and to enjoy the very attractive city of Pisa - known all over the world thanks to its unique leaning tower - and the charming surrounding region of Tuscany, offering many important tourist destinations.

Pisa is the perfect solution in terms of accessibility, quality and variety of services, attractions, efficient organization, tradition in hospitality, welcoming comfort and affordable prices for accommodation.



The EUROCORR local Conference Organising committee and Conference Chairmen Lorenzo Fedrizzi and Luciano Lazzari invite you to submit your contributions and look forward to hosting you all in Pisa.

Important dates:

31 January 2014: Term for abstracts submission
April 2014: Notification of acceptance
June 2014: Submission of full manuscripts

Contact:

Congress Secretariat
AIM, P. le R. Morandi, 2
20121 Milano, Italy
Phone: +39 0276021132
Fax: +39 0276020551
Email: info.aim@aimnet.it



NEWS ON EUROCORN 2015

Graz, Austria

6-10 September 2015

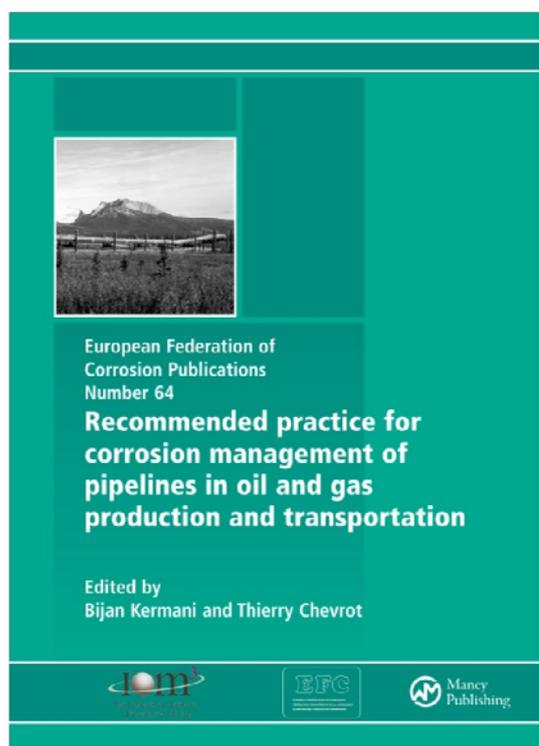
Theme: “*Earth, Fire, Water, Air, Corrosion happens Everywhere*”

EFC Member Society ASMET, The Austrian Society for Metallurgy and Materials, will be the proud host of **EUROCORN 2015**. Graz, a student city and the capital of the Styria region of Austria, is in a peaceful, green and heavily forested area southwest of the Alps and 200 km from Vienna so **put a trip to Austria on your calendar!**

Note: If your European member society would like to consider hosting a future EUROCORN, please contact the EFC Frankfurt office, Ms. Ines Honndorf, honndorf@dechema.de for details.

ADDITIONS TO THE EFC “GREENBOOK” SERIES

Listed here below are 2 new additions to the EFC Series. A 30% discount off full listed prices is available to all EFC Member Societies and – per reciprocal agreement - to NACE International members. For further information or for information on previously published EFC series books, please see our EFC website: <http://www.efcweb.org> or <http://www.maney.co.uk> directly.



EFC 64

“Recommended practice for corrosion management of pipelines in oil and gas production and transportation”

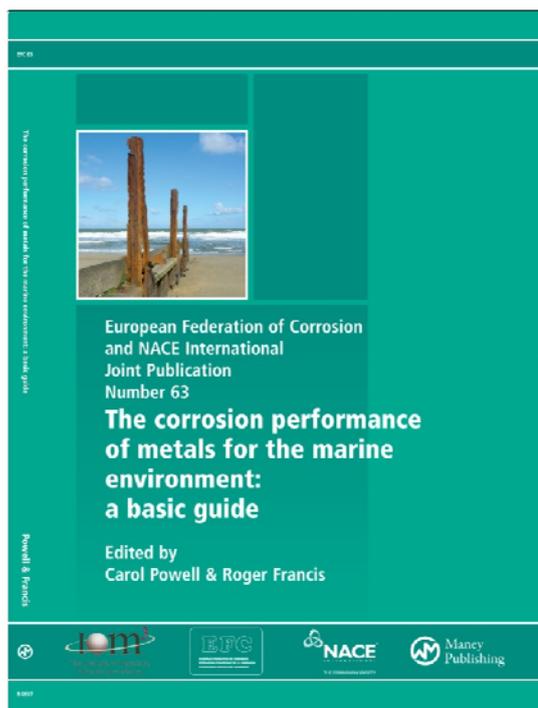
Edited by Bijan Kermani and Thierry Chevrot

Pipeline integrity is key to maintaining operational success, safety and security, and minimising harm to the environment. Corrosion is a dominant contributory factor to failures, leaks and integrity threat in pipelines. Therefore, its optimum control within an integrity management framework is paramount for the cost effective design of facilities and ensuring continued, uninterrupted and safe operations within the expected design life.

This recommended practice (RP) is a compendium of current best practices and state of the art knowledge by major operators, engineering contractors and service companies involved in hydrocarbon production and transportation. The RP incorporates some minimum operational requirements and practices to ensure that when managing corrosion in pipelines, fundamental principles are followed. It covers management of corrosion for pipelines carrying hydrocarbons, injection water and/or produced water from design to decommissioning. It is structured to follow the logical steps of a basic corrosion management process and makes references to relevant and available international standards and/or recommended practices. It is intended for use by personnel from the petroleum industry having knowledge of corrosion and materials.

The aim of this RP is to provide a key reference document for engineers, suppliers and contractors working in the oil and gas industry, paving the way for corrosion free operation of pipelines with the ultimate goal of improving safety, security and minimising the impact on the environment.

February 2012, Paperback, 88 pages, ISBN: 978 1 907975 33 2



EFC 63

“The Corrosion Performance of Metals for the Marine Environment: A Basic Guide”

Edited by Carol Powell and Roger Francis

Scientists and engineers have been studying and recording marine corrosion, its effects and the solutions for over 60 years. Many of these experiences have been written down, but not always in accessible places. Marine corrosion failures tend to recur in cycles as one group of engineers ages and retires and a younger generation takes over. Clearly, not all the experiences of senior engineers have been passed on. This has become more acute in the last ten years or so with early retirements and reduced manning, leaving even less time to educate new engineers. This book was envisioned and created as a way of encouraging engineers new to the marine environment, and those just wanting to update their knowledge, to take advantage of the many years of accumulated experience with corrosion of metals in marine environments in a quick and concise manner.

It is designed to encourage regular reference, avoiding complicated technicalities and has been instigated and supported by many of the members of WP 9 (Marine Corrosion) of the EFC (European Federation of Corrosion) and STG 44 (Marine Corrosion) of NACE International. Steels, stainless steels, as well as alloys of copper, nickel, aluminium and titanium are covered within each section providing a wealth of information. Applications, commonly used alloy compositions, mechanical properties and the types of corrosion that the alloy groups are susceptible to are all described. It is intended that, armed with this knowledge, optimum service performance and corrosion resistance can be achieved from each alloy system.

Few marine systems or structures are made of one type of alloy and so the concluding section provides an explanation of galvanic corrosion in seawater and how each alloy group behaves when coupled to others. It also discusses common solutions to avoid galvanic corrosion.

Chapters include:

- Chapter 1: Introduction
- Chapter 2: Iron and Carbon Steel
- Chapter 3: Stainless Steel
- Chapter 4: Copper Alloys
- Chapter 5: Nickel Alloys
- Chapter 6: Aluminium Alloys
- Chapter 7: Titanium Alloys
- Chapter 8: Galvanic Corrosion

March 2012, Paperback ISBN: 978-1-907975-58-5

Look for these 2 new upcoming books in our EFC series !

WP 21 Corrosion of Archaeological and Historical Artifacts' Chairman Dr. Philippe Dillmann, together with his EFC Working Party contributors is currently producing an EFC Greenbook book on Corrosion and Conservation of Metals of Cultural Heritage. Publication target is the end of 2012/beginning of 2013.

Chapters will include:

- Conservation issues – past, present, future, including climatic and anthropic change
- Analytical techniques for the study of cultural heritage corrosion, including current laboratory techniques, preservation goals utilizing metallographic and metallurgical investigation, electrochemical analysis techniques
- Specific alterations processes including Bronzes, Silver, precious and gilded artefacts, aluminium alloys, underwater corrosion, iron, copper alloys and lead
- On-site monitoring using electrochemical EIS methods, reactivity studies, oxygen and environmental monitoring
- Protection mediums, methods and strategies including dechlorination, coatings, plasma treatments and inhibitors.

WP 4 Nuclear Corrosion: Stress corrosion cracking of nickel base alloys: “THE CORIOU EFFECT”

The publication target date is late 2012 and historical views and valuable experience will be recounted on Alloy 600, the stress corrosion cracking of Ni base alloys (The “Coriou” effect and syndrome), fundamental and experimental techniques of stress corrosion cracking including recent developments on the understanding, prediction and reports on the initiation of stress corrosion cracking including crack propagation, hydrogen embrittlement and mitigation.

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

EFC WORKING PARTY INDEX

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

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 a particular WP should apply to the appropriate Chairman (see listing here below and the EFC website at <http://www.efcweb.org/wp> for more details) or contact the EFC Scientific Secretary, Juliet Ippolito (e-mail: juliet@unina.it). If your society or institution is currently not an EFC member, please contact the Scientific Secretary for membership details.

EFC Working Party 1: Corrosion and Scale Inhibition

Chairman: Prof. Günter SCHMITT, IFINKOR, Iserlohn, Germany;
Email: gue.schmitt@t-online.de

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

Chairman: Prof. Michael SCHÜTZE, DECHEMA-Forschungsinstitut, Frankfurt am Main, Germany;
Email: schuetze@dechema.de

EFC Working Party 4: Nuclear Corrosion

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

EFC Working Party 5: Environment Sensitive Fracture

Chairman: Dr. Krzysztof WOLSKI, Département PMI, Centre SMS - UMR CNRS 5146, Ecole des Mines de Saint-Etienne, Saint-Etienne, France;
Email: wolski@emse.fr

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

Chairman: Prof. Philippe MARCUS, Ecole Nationale Supérieure de Chimie de Paris, Laboratoire de Physico-Chimie des Surfaces, Paris, France;
Email: Philippe-Marcus@chimie-paristech.fr

EFC Working Party 7: Corrosion Education and Computer Applications

Chairman: Prof. Andreas HEYN, Otto-von-Guericke-Universität Magdeburg, IWF, Universitätsplatz 2, 39106 Magdeburg, Germany;
Email: andreas.heyn@ovgu.de

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

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

EFC Working Party 9: Marine Corrosion

Chairman: Dr. Ulf KIVISÄKK, AB Sandvik, Materials Technology R&D, Sandviken, Sweden;
Email: ulf.kivisakk@sandvik.com

EFC Working Party 10: Microbial Corrosion

Chairman: Ms. Turid LIENGEN, STATOIL ASA, Technology, Projects and Drilling Technology Excellence Facilities and Operational Technology, Materials technology, Porsgrunn, Norway;
Email: turl@statoil.com

EFC Working Party 11: Corrosion of Steel in Concrete

Chairman: Prof. Michael RAUPACH, Aachen University, Institute for Building Materials Research, Aachen, Germany;
Email: raupach@ibac.rwth-aachen.de

EFC Working Party 13: Corrosion in Oil and Gas Production

Chairman: Mr. Michel BONIS, TOTAL E&P, Technology/Corrosion, CSTJF, CA179, Pau, France;
Email: michel.bonis@total.com

EFC Working Party 14: Coatings

Chairman: Priv.-Doz Dr. Wolfram FÜRBETH, DECHEMA-Forschungsinstitut, Frankfurt am Main, Germany;
Email: fuerbeth@dechema.de

EFC Working Party 15: Corrosion in the Refinery Industry

Chairman: Dr. François ROPITAL, IFP Energies nouvelles, Direction Chimie et Physico Chimie Appliquées, Département Electrochimie et Matériaux, Solaize, France;
Email: francois.ropital@ifpen.fr

EFC Working Party 16: Cathodic Protection

Chairman: Mr. Jérôme CROUZILLAC, BAC Corrosion Control, Voisins-le-Bretonneux, France;
Email: j.crouzillac@bacfrance.com

EFC Working Party 17: Automotive Corrosion

Chairman: Dr. Fouzia HANNOUR, TATA Steel Research Development & Technology, Ijmuiden, The Netherlands;
Email: fouzia.hannour@tatasteel.com

EFC Working Party 18: Tribocorrosion

Chairman: Prof. Jean-Pierre CELIS, Katholieke Universiteit Leuven, M.T.M., Leuven, Belgium;
Email: jean-pierre.celis@mtm.kuleuven.be

EFC Working Party 19: Corrosion of Polymer Materials

Chairman: Jürgen HEINEMANN, TU Darmstadt, Zentrum für Konstruktionswerkstoffe, Darmstadt, Germany
Email: heinemann@mpa-ifw.tu-darmstadt.de

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

Chairman: Dr. Johann Wilhelm ERNING, Bundesanstalt für Materialforschung und –prüfung, Fachbereich 6.2: Korrosionsschutz von technischen Anlagen und Geräten, Berlin, Germany;
Email: wilhelm.erning@bam.de

EFC Working Party 21: Corrosion of Archaeological and Historical Artifacts

Chairman: Dr. Philippe DILLMANN, Archaeomaterials and Alteration Prediction Laboratory, SIS2M/LPS CEA/CNRS and IRAMAT LMC CNRS, CEA Saclay, Gif-sur-Yvette, France;
Email: philippe.dillmann@cea.fr

In addition:

EFC Task Force on CO₂-Corrosion in CCS-Applications

Chairman: Dr. Ralph BÄSSLER, Bundesanstalt für Materialforschung und –prüfung, Fachbereich 6.2: Korrosionsschutz von technischen Anlagen und Geräten, Berlin, Germany
Email: ralph.baessler@bam.de

EFC CALENDAR OF FORTHCOMING EVENTS AS OF AUGUST 2012

Date/venue	Conference	Contact
9-13 September 2012 Istanbul, Turkey	EUROCORR 2012 (EFC Event No. 330)	Ms. Sinem Özyalcin ZED Congress Organizer Istanbul, Turkey Fax: +90 312 219 57 01 Email: info@eurocorr2012.org Website: www.eurocorr2012.org
19-20 September 2012 Frankfurt am Main, Germany	EFC Workshop "Beyond Single Oxidants" (EFC Event No. 350)	Prof. Michael Schutze/Ms. Xueqing Wu DECHEMA e.V. Theodor-Heuss-Allee 25 6048 Frankfurt am Main, Germany Fax: +49 69 7564304 Email: wu@dechema.de
7-10 October 2012 Atlanta, Georgia, USA	Titanium 2012 <i>87th 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 Email: conference@titanium.org Website: www.titanium.org
7-12 October 2012 Honolulu, Hawaii	222 nd ECS Meeting <i>PRiME 2012</i> <i>Joint international meeting: 222nd Meeting of ECS and 2012 Fall Meeting of The Electrochemical Society of Japan</i>	The Electrochemical Society 65 South Main Street, Building D Pennington, New Jersey 08534-2839, USA Fax: +1 609 737 2743 Email: ecs@electrochem.org Website: www.electrochem.org/meetings
23-25 October 2012 Stuttgart, Germany	parts2clean 2012 <i>International Trade Fair for Industrial Parts and Surface Cleaning</i>	Website: www.part2clean.de
10-14 November 2012 Melbourne, Australia	Corrosion & Prevention 2012 (EFC Event No. 353)	Australasian Corrosion Association, Inc. Mr. Wesley Fawaz Fax: +61 3 9890 7866 Email: wesley.fawaz@corrosion.com.au Website: www.acaconference.com.au
12-15 November 2012 Cadarache, France	NUCPERF 2012 <i>Long-Term Performance of Cementitious Barriers and Reinforced Concrete in Nuclear Power Plant and Radioactive Waste Storage and Disposal</i> (EFC Event No. 351)	Valerie L'Hostis CEA-Saclay, LECBA Bat 158 91191 Gif-sur-Yvette Cedex, France Email: valerie.lhostis@cea.fr Website: www.nucperf2012.fr
18-22 November 2012 Maragogi, Alagoas, Brazil	10 th International Symposium on Electrochemical Methods in Corrosion Research (EMCR 2012)	Dr. Idalina Vieira Aoki and Dr. Hercílio G. de Melo (Chairpersons) Email: emcr.2012@gmail.com

Date/venue	Conference	Contact
28-20 November 2012 Poraj, Poland	16th All-Polish Corrosion Symposium (APCS) <i>New Achievements in Corrosion Research & Engineering</i> (EFC Event No. 357)	Professor Henryk Bala Department of Chemistry Czestochowa University of Technology Al. Armii Krajowej 19 42-200 Czestochowa, Poland Tel/Fax: +48-34 3250602 Email: hbala@wip.pcz.pl Website: www.symp-kor-apcs.wip.pcz.pl
10-14 December 2012 Saclay, France	Winter School "Modelling of Corrosion" <i>organised by CEFACOR</i> (EFC Event No. 354)	Website: www-instn.cea.fr
10-13 December 2012 Hurghada, Egypt	EGYCORR 2012 <i>30th Egyptian Corrosion Conference and 2nd International Conference on Corrosion Mitigation and Surface Protection Technologies</i>	Email: egyccorr2012@yahoo.com Website: www.egy-corr.org
17-21 March 2013 Orlando, FL, USA	CORROSION 2013/NACE Conference and Exposition EFC endorsed Event	Jackie Hune NACE Headquarters 1440 South Creek Drive Houston, Texas 77084-4906 USA Fax: +1 281 228 6300 Email: firstservice@nace.org Website: www.nace.org
17-21 March 2013 Bochum, Germany	12 th Spring Meeting of the International Society of Electrochemistry	International Society of Electrochemistry Rue de Sébeillon 9b, 1004 Lausanne, Switzerland Fax: +41 21648 39 75 Email: events@ise-online.org Website: www.ise-online.org
8-11 April 2013 Pretoria, South Africa	ISE Spring Meeting South Africa <i>13th Spring Meeting of the International Society of Electrochemistry</i>	International Society of Electrochemistry Rue de Sébeillon 9b, 1004 Lausanne, Switzerland Fax: +41 21648 39 75 Email: events@ise-online.org Website: www.ise-online.org
24-27 April 2013 Emmetten, Switzerland	AETOC 2013 <i>International Workshop "Application of Electrochemical Techniques to Organic Coatings"</i> (EFC Event No. 359)	Dr. Jörg A. Vogelsang Sika Technology AG Zurich, Switzerland Email: vogelsang.joerg_a(at)ch.sika.com
12-17 May 2013 Toronto, ON, Canada	223 rd ECS Meeting	The Electrochemical Society 65 South Main Street, Building D Pennington, New Jersey 08534-2839, USA Fax: +1 609 737 2743 Email: ecs@electrochem.org Website: www.electrochem.org/meetings

Date/venue	Conference	Contact
14-18 May 2013 Milan, Italy	8 th World Congress Aluminium Two Thousand	Interall Srl Fax:+39-059-280462 Email: aluminium2000@interall.it Website: www.aluminium2000.com
1-5 September 2013 Estoril, Portugal	EUROCORR 2013 <i>“Corrosion Control for a Blue Sky”</i> (EFC Event No. 343)	EUROCORR 2013 Instituto Superior Técnico Av. Rovisco Pais 1049-001 Lisbon, Portugal Fax: +351 21 841 9771 Email: secretariat@eurocorr2013.org Website: www.eurocorr2013.org
8-13 September 2013 Santiago de Querétaro, Mexico	64 th Annual Meeting of the ISE	International Society of Electrochemistry Rue de Sébeillon 9b, 1004 Lausanne, Switzerland Fax: +41 21648 39 75 E-mail: events@ise-online.org Website: www.ise-online.org
16-19 September 2013 Cracow, Poland	6th Kurt Schwabe Symposium <i>“Surface analysis and material engineering in corrosion science and electrochemical technologies “</i> (EFC Event No. 358)	Prof. Jack Banas Dept. of Chemistry & Corrosion of Metals AGH-University of Science & Technology Cracow, Poland Tel. +48 600 322 831 Email: jbs@agh.edu.pl Website: home.agh.edu.pl/~schwabe
16-20 September 2013 Edinburgh, Scotland	Metal 2013	Email: hs.cgoutreach@scotland.gsi.gov.uk
7-11 October 2013 Asahikawa, Hokkaido, Japan	LongTermCor2013 <i>5th International Workshop on Long Term Prediction of Corrosion Damage in Nuclear Waste Systems</i> (EFC Event No. 360)	Damien Feron CEA Director of research Commissariat à l'Energie Atomique et aux Energies Alternatives CEA- Centre de Saclay GIF-SUR-YVETTE Cedex, France Email: damien.feron@cea.fr
9-13 March 2014 San Antonio, TX, USA	Corrosion 2014/NACE Conference and Exposition EFC endorsed Event	CaLae McDermott Tel: +1 281 228 6263 Email: calae.mcdermott@nace.org Website: www.nace.org
31 August-5 Sept 2014 Lausanne, Switzerland	65 th Annual Meeting of the ISE	International Society of Electrochemistry Rue de Sébeillon 9b, 1004 Lausanne, Switzerland Fax: +41 21648 39 75 Email: events@ise-online.org Website: www.ise-online.org

Date/venue	Conference	Contact
8-12 September 2014 Pisa, Italy	EUROCORR 2014 <i>“Improving materials durability: from cultural heritage to industrial applications”</i> EFC Event No. (to be confirmed)	Associazione Italiana di Metallurgia (AIM) Dr. Federica Bassani Centro Corrosione, Piazzale R. Morandi 2 20121 Milano, Italy Fax: +39 02 76 02 05 51 Email: secretariat@aimnet.it Website: www.aimnet.it
6-10 September 2015 Graz, Austria	EUROCORR 2015 <i>“Earth, Fire, Water, Air, Corrosion happens Everywhere”</i> EFC Event No. (to be confirmed)	Austrian Society for Metallurgy and Materials (ASMET) Franz-Josef-Str. 18 8700 Leoben, Austria Email: asmet@unileoben.ac.at Website: www.asmet.at

Corrosion Courses

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

EFC MEMBERSHIP BENEFITS

EFC MEMBER SOCIETIES

(EUROPEAN AND INTERNATIONAL)

Working Parties Activities:

- Appointment of delegates to EFC's 19 working parties, including the possibility of a delegate to become a future Working Party Chairman and/or to organize special topic sessions at EUROCORR
- Appointed delegates have access to the restricted areas of the EFC Working Party pages on the EFC Website which contain specific documents such as unconfirmed meeting minutes, the databank of WP members with their contact details, etc.
- Possibility to install on the restricted areas of members' own web sites a link to permit direct downloading of past EUROCORR proceedings.

Congress and Exhibition advantages:

- Organization of seminars and courses with EFC endorsement and logo.
- Reduced registration fee of the society's members at annual EUROCORR.
- Reduced registration to all EFC-sponsored events (with assigned event number).
- Discounts on exhibitor booths at annual EUROCORR conferences.
- European Member Societies: eligibility to bid to become EUROCORR host organizer

Publications:

- 30% discount for all society members on purchase of our 50+ EFC publications
- The same discounted prices for your society's members on NACE books, standards and journal subscriptions as provided to NACE members
- Possibility of co-authorship and publishing contributions to EFC Working Party Publications (EFC Greenbook Series) and to partner Journals such as "Materials and Corrosion" and "Corrosion Engineering, Science and Technology", including joint-publications with NACE.

AFFILIATE MEMBERS

Working Parties Activities:

- Appointment of delegates to the EFC's 19 working parties, including the possibility of a delegate to become a future Working Party Chairman and/or to organize special topic sessions at EUROCORR.
- Appointed delegates have access to the restricted areas of the EFC Working Parties pages on the EFC Website which contain specific documents such as unconfirmed meeting minutes, the databank of WP members with their contact details, etc.
- Possibility to install on the restricted areas of their own web sites a link to permit Affiliate members' employees downloading of past EUROCORR proceedings.

Congress and Exhibition advantages:

- Organization of seminars and courses with the EFC endorsement and logo.
- Reduced registration fee of the Affiliate's employees at annual EUROCORR conferences.
- Discounts on exhibitor booths at annual EUROCORR conferences.

Publications:

- 30% discount on purchase of our 50+ EFC publications.
- Possibility of co-authorship and publishing contributions to EFC Working Party Publications (EFC Greenbook Series) and to partner Journals such as "Materials and Corrosion" and "Corrosion Engineering, Science and Technology", including joint-publications with NACE.

EFC MEMBER SOCIETIES

(EUROPEAN AND INTERNATIONAL)

EFC Administration:

- Participation in the EFC General Assembly with voting rights
- Opportunity to nominate candidates for EFC awards and medals
- Opportunity to nominate candidates for election to the EFC Board of Administrators and Science & Technology Advisory Committee
- Availability of Affiliate Membership of the World Corrosion Organization (WCO) under the EFC-WCO agreement at no additional cost subject to the approval of the WCO Board of Administrators and the WCO General Assembly
- Access to your organization's website directly from the EFC Website

Advertising:

- Listing, advertising and promotion of any of your society's corrosion-related events in our continually-updated EFC "Calendar of Events" which is posted on our website and included in both our electronic and hard-copy newsletters distributed at EUROCORR.
- Free promotional write-ups of your society's past corrosion-related events in our EFC Newsletters that are circulated in hard-copy at annual EUROCORR conferences and are also sent electronically to over 2,500 corrosionists in our EFC database by our EFC Frankfurt headquarters.

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