

Issue April 2018

<http://www.efcweb.org>

Dear Readers,

This will be the last newsletter in the current format. From now on the print EFC newsletter will contain some advertising and will be published by SAS Nouvelle Page Communication and the e-newsletter format will change as well. Nevertheless, editorial control will remain with myself, Ruth Bingham and Ines Honndorf (DECHEMA). As mentioned by our President in his letter below, this newsletter is sent out on Corrosion Awareness Day, an initiative of the World Corrosion Organisation (WCO). The WCO is presently experiencing a resurgence; it ran a session at the recent EUROCORR/20th ICC in Prague (see report below) and will hopefully be high profile again in Cracow. A couple of other things of note in this issue: EUROCORRs are quite extensively reported in the front end of the journal Corrosion Engineering, Science and Technology (CEST), something that started when it was published by the Institute of Materials with Paul McIntyre as Editor. For more information on this together with a summary of the reports of the Prague meeting see "Reporting on EUROCORR 2017"). Also, as a change from normal corrosion related matters, there is brief but interesting illustrated article on Corrosion and Art.

Anyway, I hope you find all the articles and news herein interesting and informative.

Regards

Douglas Mills

EFC Newsletter Editor

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A FEW WORDS FROM THE EFC PRESIDENT

To all the members of the European Federation of Corrosion

It is a great pleasure to send you my greetings for the Corrosion Awareness Day, 24th April 2018.

I would like to take advantage of this EFC e-newsletter edition for the Corrosion Awareness Day to highlight the links between the World Corrosion Organization (WCO) and the EFC. I did this last year, but I feel it is important to repeat that the EFC co-founded the WCO as a non-profit charitable organization independent from states. The WCO is based in New York and is the only corrosion Non-Governmental Organization (NGO) of the United Nations (UN). With both its President, Prof. En-Hou Han of the Institute of Material Research-Chinese Academy of Science (Shenyang, China) and its Director General, Prof. Willi Meier of DECHEMA (Frankfurt, Germany) present, an inaugural WCO Session took place during EUROCORR 2017, entitled "Impact of corrosion on potable water supplies".



More than sixty delegates from the international corrosion community gathered at the Prague Congress Centre for this session, which is detailed in an article within the present newsletter.

The WCO has a major role in: (i) raising the corrosion awareness of governments, corporations and the public, (ii) Identifying the world's best practices of corrosion mitigation, and (iii) facilitating provision of corrosion control expertise. I believe that these goals are in accordance with the EFC objectives and I am pleased that several EFC member societies have already taken the opportunity to become WCO members with preferential conditions as the EFC is offering to pay part of the annual membership fee.

In many countries, including European ones, the NGO status, which the WCO has, is important to put pressure on government or local authorities to become involved in corrosion issues like protection of infrastructures, educational opportunities, academia and research programs.

I invite all of you to be proactive for the Corrosion Awareness day (April 24th), to increase the awareness of the public concerning the need to control corrosion for safety and financial considerations and also for environmental issues. Do not hesitate to report your intended actions for mention in the next EFC newsletter!

This is an exciting time for the EFC. The official journal of the Kingdom of Belgium, *Moniteur Belge*, published our new statutes at the end of last December and the EFC has successfully registered for VAT in Belgium. The creation of EFC "branches" is covered in these new statutes and is actively pursued. These should be proactive in promoting the EFC worldwide: new branches are under discussion in several countries, not only in Europe. The "Young EFC network" initiative is growing fast. Do not miss the opportunity to meet and discover the young generation of corrosion and protection people (<http://efcweb.org/YoungEFC.html>). These actions will be continued and improved to make the EFC more and more attractive to researchers and engineers in the field of corrosion and protection of materials.

The EFC is looking forward with much anticipation to EUROCORR 2018 in Cracow, September 9th – 13th 2018. I would like to thank very much the Polish Corrosion Society that has been charged with organizing this flagship event, which is a major opportunity to bring together researchers, engineers, experts in corrosion science and engineering from all parts of Europe. EUROCORR 2018 is the right place for networking, identifying new partners, initiating new collaborations, exchanging new results, improving new ideas, etc.

Looking forward to meeting you in Cracow, next September.

Pr Damien Féron

11th EFC President (2017-2018)

UPCOMING EUROCORR 2018 - CRACOW, POLAND – 9-13 SEPTEMBER 2018

As the 2018 hosts of the renowned annual corrosion congress EUROCORR, the Polish Corrosion Society, PSK, together with EFC and DECHEMA, cordially invite you to attend EUROCORR 2018 (EFC Event No. 429). Do not miss the chance to join [EUROCORR 2018](#)!

Under the motto "**Applied Science with Constant Awareness**", the scientific programme of **EUROCORR 2018** gives you an opportunity to catch up with the most recent and reliable scientific results and the latest industrial achievements.



Special joint sessions and workshops in addition to the traditional EUROCORR topics: Cathodic Protection in Marine Environment (WP9 & WP16); Microbial Corrosion in Marine Environment (WP9 & WP10); Cathodic Protection in Civil Engineering (WP11 & WP 16); Corrosion issues in CO₂ environment (WP13 & TF CO₂); Polymers in organic coatings (WP14 & WP19); Accelerated Atmospheric Corrosion Testing – Exchange Platform for Advanced Methods (WP6, WP8, WP14, WP17, WP22 & WP23); Corrosion protection by ZnAlMg coatings in atmospheric conditions (WP14, WP17 & TF); Anticorrosion in sustainable building industry; Implementation and Administration of Corrosion Education Courses; Securing global water supplies through improved corrosion protection (WCO)/Big Data and

Artificial Intelligence serving Corrosion Protection (WCO); Durability of photovoltaic systems (ENSCP).
For the complete listing of the topics, see: <http://eurocorr.org/topics2018.html>

Plenary Speakers: Prof. Carmen Andrade; Dr. Dante Battocchi; Jeffrey L. Didas; Dr. Jörg Vogelsang; Michael Thorup Kruse.

For their CVs, lecture titles and abstracts, see <https://eurocorr2018.org/en/plenary-lectures>

REGISTER ONLINE NOW!

The full registration fee includes: Admission to all scientific sessions; admission to the exhibition area; conference materials; Welcome Party; Poster Party; Exhibition Party; refreshments during the coffee and lunch breaks; Organum Academic Choir concert on 11 September.

Key dates:

Notification of acceptance to authors: **30 April 2018**

Early registration deadline: **16 May 2018**

Submission of full manuscripts: **19 June 2018**

EUROCORR 2018 sponsors (as of April 2018):

Jotum (Platinum Sponsor); Sika Poland, PPG, Polskie Towarzystwo Cynkownicze (Silver Sponsors); Polyguard Products (Remainder Sponsor).

Details about sponsorship opportunities are available at: <https://eurocorr2018.org/en/sponsorship>

Exhibition:

Companies and organizations are invited to present their products, technologies, services and the latest developments in the fields of corrosion science, electrochemical methods, surface analysis, spectroscopy and microscopy, corrosion monitoring, non-destructive testing and corrosion protection by means of coatings, advanced corrosion resistant materials, inhibitors, electrochemical ways of protection, and others at the EUROCORR 2018.

Exhibition prospectus including detailed information and prices: https://eurocorr2018.org/upload/EuroCorr-2018/ENG-Broszura-PSK-EUROCRR_2018_druk_18-08-2017.pdf

Courses in conjunction with EUROCORR 2018:

- **Electrochemical methods of corrosion research for non-electrochemists**

9 September 2018, 12:00-16:00 h

Target group: This course is aimed at graduated students, beginners and more experienced users of electrochemical corrosion tests working in academic or industrial environments. An interest in proving and expanding their understanding of electrochemical methods used in corrosion research is a prerequisite. The introductory lecture covers necessary background information.

- **Painting control - training for future inspectors**

9 September 2018, 9:00-16:00 h

Target group: Corrosion specialists, graduates and students wishing to expand their knowledge of practical anti-corrosion protection practices or individuals planning to become inspectors of anti-corrosion work. This course is also suitable for individuals who want to expand their knowledge and gain practical experience on the topic.

- **Graduate Course – Corrosion Science**

7-9 September 2018 (3 days, 7.5 ECTS)

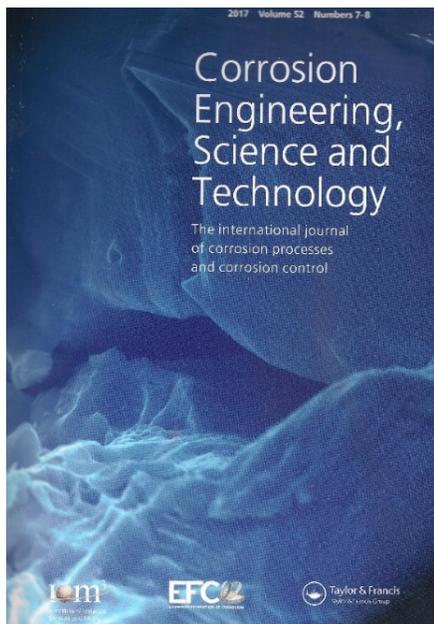
Target group: The course is intended for graduate students or researchers working in academic or industrial environments with an interest in materials science and engineering. The participants are assumed to be graduate students at some university or researchers working in industry with a background in physics, chemistry or materials science. The introductory lecture covers necessary background information.

For further information and registration, please refer to: <http://eurocorr2018.org/en/workshops-courses>

For general information concerning EUROCORR 2018, please visit the congress website at:
<http://www.eurocorr2018.org>.

We look forward to meeting you in Cracow!

A detailed report, in four parts, on the proceedings of EUROCORN 2017 incorporating the 20th International Corrosion Congress and the Process Safety Congress can be found in the Journal: Corrosion Engineering, Science and Technology, published by IOM3 in conjunction with Taylor and Francis. These reports select what are considered to be the most novel, interesting and important papers from each session. From the chosen papers (typically about 25% of the total presented in each session) the lead author, his/her affiliation and a short (100-150 word) synopsis are given. Most of the papers selected are full papers available on the memory stick published by DECHEMA and provided to delegates at the conference. The sessions covered in the EUROCORN 2017 report are as follows:



Part 1: atmospheric corrosion, automotive corrosion, corrosion in aerospace, corrosion of steel in concrete, and various coatings-related topics (metallic, inorganic, organic/self-healing, bio-based and bio-applied coatings, coating pre-treatments, and chromate replacement) - R. V. Bingham & D. Nuttall (2017), Corrosion Engineering, Science and Technology; link: <https://doi.org/10.1080/1478422X.2017.1410318>

Part 2: Mechanisms Methods Modelling and Monitoring, Corrosion of Archaeological and Historical Artefacts, Corrosion in the Refinery Industry, Marine Corrosion, Cathodic Protection in the Marine Environment, Microscopy and Corrosion, and Non-destructive testing - R. V. Bingham & D. Nuttall (2018): Corrosion Engineering, Science and Technology; link: <https://doi.org/10.1080/1478422X.2018.1436054>

Part 3: Microbial Corrosion, Corrosion and Scale Inhibition, Tribocorrosion, Corrosion of Polymers and Advanced Materials, CO₂-Corrosion, Corrosion Reliability of Electronic Devices, Corrosion by Hot Gases, Coatings for High Temperatures, Corrosion in oil and gas production, Impact of H₂ Charging, and Cathodic Protection – R. V. Bingham & D. Nuttall (2018), Corrosion Engineering, Science and Technology; link:

<https://doi.org/10.1080/1478422X.2018.1449358>

Part 4: Corrosion of Biomaterials, Environment Sensitive Fracture, Techniques for SCC Testing, Accelerated Corrosion Testing, Nuclear Corrosion, WSCO Drinking Water, and Impact of Corrosion on Potable Water Supplies, plus the process safety sessions – R. V. Bingham & D. Nuttall (2018), Corrosion Engineering, Science and Technology; link: <https://doi.org/10.1080/1478422X.2018.1459426>

Prior to the forthcoming EUROCORN 2018, the full proceedings from the 2017 conference will be made available on the EFC website in the members' area.

WCO Session at EUROCORN 2017: "Impact of corrosion on potable water supplies"

Safe water supplies, hygienic sanitation and good water management are fundamental to global health. Investment to improve potable water, sanitation, hygiene and water resource management systems makes strong economic sense. The World Corrosion Organisation (WCO) has a major role in ensuring that governments, industry, academia, and the general public understand that by following appropriate strategies and obtaining sufficient resources for corrosion programs on potable water, the best engineering practices can be achieved. In addition to the value of saved human lives, other benefits include higher economic productivity, more education, and health-care savings.

Hence the theme of the inaugural WCO Session at EUROCORN 2017 was "impact of corrosion on potable water supplies".

More than sixty delegates from the international corrosion community gathered at the Prague Congress Centre on Monday, 4th September 2017. The session was chaired by WCO President En-Hou Han.

Five speakers presented various problems associated with corrosion in potable water supplies from around the world.

The titles and authors of the presentations were:

“Testing - Inspection - Certification: Qualification of plastic pipes at a glance” by Jürgen Heinemann, Germany; “Corrosion Effect on Potable Water in China - Current status and future challenges” by En-Hou Han, PR China; “Hygienic evaluation and qualification of materials in contact with drinking water” by Wilhelm Erning, Germany; “Major concerns of future potable water and smart cities aspects” by Amir Eliezer, Israel; “Mitigating Corrosion in Potable Water Systems in Russia” by Anna Sushkova, Russia.

The proceedings from the contributing authors will be used to produce a white paper due for publication in late 2018. The purpose of this white paper is to inform readers about the complex issue of corrosion in potable water supplies and launch a debate with the public, governments and the United Nations in order to arrive at a political consensus. This white paper will be made available on the WCO web site free of charge to all those interested in taking part in the discussion.

Feedback from delegates at the session was extremely positive and a similar session has been proposed for EUROCORR 2018 in Cracow.



IN MEMORIUM

Professor Ewald Heitz

The corrosion world is mourning the loss of **Professor Dr. Ewald Heitz** who passed away on 11 January 2018. For decades he was an influential figure in corrosion research.

Ewald Heitz was born in Lörrach in 1931, the son of a locksmith. At the early age of twelve, his love for chemistry became evident in daring backyard experiments with chlorine and acetylene. After graduating from high school in 1951, he studied chemistry in Basel, Karlsruhe and Würzburg. In 1958 he passed the main diploma examination and only two years later he received his doctorate with Professor Walther Jaenicke in Karlsruhe with an electrochemical thesis in the field of photographic development. After a period as a research associate in the USA, he was hired in 1961 as one of the first scientists for the DECHEMA Institute, which was founded in the same year.

As a young scientist, he was very focused on corrosion in organic media, a field of work that was not very well developed at the time, and which offered the best opportunities for his own scientific profile. His publications in the field became ubiquitous and, in 1969, his ground-breaking work qualified him to teach at the University of Frankfurt, where he was appointed honorary professor in 1975. There he continued to lecture on corrosion and electrochemistry until his retirement in 1996.

In addition to research in the field of corrosion in organic media, he expanded his activities to include further topics. From 1971 onwards, he was one of the few corrosion scientists to deal intensively with flow-induced corrosion. In 1989, the field of microbial corrosion followed. He has also published ground-breaking review articles on electrochemical measuring methods in corrosion.

For many years, Ewald Heitz headed the department of Materials and Corrosion at the DECHEMA-Forschungsinstitut, being appointed the first director of the institute in 1994. In addition to research, DECHEMA-Forschungsinstitut scientists have been involved in continued vocational training from the very beginning.



When the concept of one-week experimental courses was introduced, Ewald Heitz designed and initiated courses on corrosion and corrosion protection and technical electrochemistry.

These activities led to the publication of two recognised manuals under his authorship. He was also internationally active, for example, in the context of international seminars for lecturers from developing countries, which were organised under the auspices of the TH Karlsruhe.

From 1990-95 Ewald Heitz served as general secretary of the International Society of Electrochemistry. He was honoured by the European Federation of Corrosion with the Marti Franqués Medal, which was awarded to him shortly after his retirement in 1996 at the EUROCORR Congress in Nice.

The world of corrosion is indebted to Ewald Heitz for his invaluable contribution to the development of corrosion sciences in research, teaching and committee work. Ewald Heitz will be remembered not only as a scientist, but also as an outstanding and multifaceted personality in the national and international corrosion community. He will be sadly missed and remembered with great respect.

Gerhard Kreysa

Michael Schütze

Wolfram Fürbeth

Professor Sebastian Feliu Matas

It is with deep sadness that we announce the death of the greatly admired Prof. Sebastian Feliu Matas, who passed away on Thursday 8th February 2018 at the age of 92. Prof. Feliu has been considered the cornerstone of Corrosion Science in Spain.

It was in 1949 that Prof. Feliu began his career as a Lecturer at the University of Barcelona. In 1952 he was appointed as a researcher to the Spanish Iron and Steel Institute, the precursor to the National Center for Metallurgical Research CENIM. This marked the beginning of a prolific career in the field of Corrosion and Protection with hundreds of publications in scientific journals, books, chapters and communications given at conferences on corrosion, both nationally and internationally. He was also responsible for introducing the technique of Electrochemical Impedance Spectroscopy in Spain. In 1993, at the 10th European Corrosion Congress held at Barcelona, he was awarded with the Martí í Franqués Medal in recognition of his outstanding contribution to the advancement of the science and technology of corrosion through international cooperation within the EFC. Although officially retired at the end of the 90's, he continued to be a supportive presence in Spanish corrosion life.

Our thoughts are with his wife, Maria Teresa, and sons, Vicente, Jaime, Juan and Sebastian, who have shown remarkable fortitude during the last year.

Prof. Feliú will be remembered with great respect and admiration as a principled leader and individual, and as a thoughtful and supportive colleague. He will be sorely missed.

NEWS FROM WORKING PARTIES AND TASK FORCES

Conversion of Task Force Corrosion Reliability of Electronics to a new Working Party

In September 2017, the EFC General Assembly approved the conversion of the Task Force Corrosion Reliability of Electronics to a new Working Party.

New Task Force on Atmospheric Corrosion

At their meetings in Prague in September 2017 the EFC committees decided to establish a new EFC Task Force (TF) on Atmospheric Corrosion. The mission and programme of the TF were discussed and approved in their first meeting on September 4, 2017.

Mission: Atmospheric corrosion is controlled by complex electrochemical and physical processes taking place in a thin film on a metal surface with dynamically changing composition and properties. A number of mainly in situ analytical techniques introduced in past decades helped to improve our understanding of these processes dramatically.

Still, the complexity of real systems exposed under varying conditions due to external factors such as the relative humidity, temperature and concentration of air pollutants and internal factors such as composition and physicochemical properties of precipitated corrosion products and interplay between metal micro elements make any transfer of the scientific knowledge into practical means of corrosion prevention challenging. The TF's principal goal is to foster collaboration and exchange between academia and industry in order to help in the development of solutions to reduce the costs of corrosion protection for structures and objects exposed to the atmosphere. This can be done only by bringing together academic research groups with deep fundamental knowledge and modelling capabilities and industry end-users with their practical needs in terms of efficient anticorrosion measures applicable in atmospheric exposure conditions, user-friendly modelling tools and long-term predictive models.

Objectives: The TF on Atmospheric Corrosion will provide a platform for exchange of knowledge, information and ideas between scientists, researchers and industry on the following fundamental and practical topics: Improving the understanding of corrosion processes in thin electrolytes formed under atmospheric conditions; Development of better predictive models, both statistical and mechanistic; Best practices of field and laboratory testing; Development of corrosion monitoring techniques applicable in atmosphere; Corrosion in new environments, e.g. severe marine industrial atmospheres and micro climate; Protection of novel materials including weathering, stainless and coated carbon steels and aluminium and magnesium alloys; Practical experience in corrosion protection of structures and objects exposed to outdoor and indoor atmospheres; Standardization activities.

At EUROCORR 2018 the TF will organize a regular session focused mainly on fundamental aspects of atmospheric corrosion. A joint session on "Corrosion protection by ZnAlMg coatings in atmospheric conditions" will be held in collaboration with WP 14 Coatings and WP 17 Automotive Corrosion.

The TF is chaired by Dr. Tomáš PROSEK, University of Chemistry and Technology Prague, Czech Republic. Further information: <http://efcweb.org/TF+Atmospheric+Corrosion.html>

Ongoing activities of working parties

To view the ongoing activities of all twenty-one of the EFC's working party corrosion specialty areas, please go to the individual Working Party web pages on the EFC website at: <http://www.efcweb.org/wp.html>

EFC EVENT REPORTS

12th Giornate Nazionali sulla Corrosione e Protezione (EFC Event No. 422)

The 12th edition of the "Giornate Nazionali sulla Corrosione e Protezione" took place in Milan from 28 to 30 June 2017. This is one of the most important national events to discuss the scientific, technological and productive aspects, in the field of corrosion and protection of materials.

The Congress concerned both the theoretical and practical aspects with particular regard to the development of monitoring techniques and innovative technologies for prevention and protection. The conference was attended by more than two hundred participants, with over one hundred presentations being given in parallel sessions, as evidence of the great interest for this subject.



This event has been also an excellent opportunity for all the companies that sponsored it, reinforcing their presence in the market, showing products and innovations.

SMT31 – 31st International Conference on Surface Modification Technologies

(EFC Event No. 421)

The 31st International Conference on Surface Modification Technologies was hosted by the University of Mons on July 5-7 2017 in Belgium. 152 participants and speakers from Europe, Asia, North and South America, Africa and the Middle East attended the meeting during which more than 90 talks were presented.

The plenary speakers were Prof. M. Zheludkevich who talked about 'active protective coatings with nanocontainers of corrosion inhibitors', Prof. M. Jeandin: 'Cold spray under the banner of thermal spray in the whirlwind of additive manufacturing', Prof. S. Pane i Vidal: 'Electrochemical Processing technology: a versatile approach for manufacturing micro and nano machines' and Dr. TS Sudarshan: 'Emulate to Innovate'.

The talks were organized in several sessions: Surface characterization; Coatings for electronics, photovoltaics and sensors; wear and tribological applications; conversion and plasma electrolytic oxidation; Electro and electroless plating; Functional coatings; Special topics; Cold spray; Thermal spray; corrosion and corrosion protection; Hydro/oleo/ice phobic/philic surfaces; Surface modification of non-metallic materials.

31 posters were presented and the best poster prizes were awarded to Chaewon Kim: 'Development of high performance catalyst support on metallic substrate for passive auto-catalytic recombiner application'; Alexandre Emelayenko: 'Nanosecond laser micro and nanotexturing for the design of superhydrophobic coatings robust to long-term contact with water, corrosion active medium, cavitation, and abrasion'; David Mercier: 'Mechanical properties and decohesion of sol-gel coatings on metallic and glass substrates'. There was a small exhibition with 7 stands from scientific equipment providers.

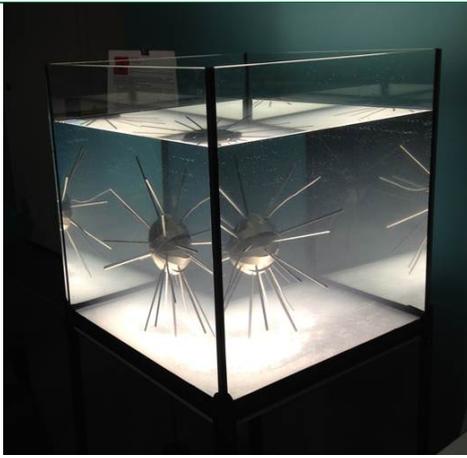
The next edition of the conference will take place in San Sebastian, Spain, June 26-29, 2018.



CORROSION AND ART

For the 7th edition of the Artistic Science Biennial of the "Art & Sciences festival" in Essone on the theme "Culture of Risk" (November 2017), Anna Mano, a French artist who creates unprecedented assemblages from industrial metals, has chosen to exhibit an evolutionary work entitled "Corrosion" (<https://annamano.com/portfolio/corrosion/>).

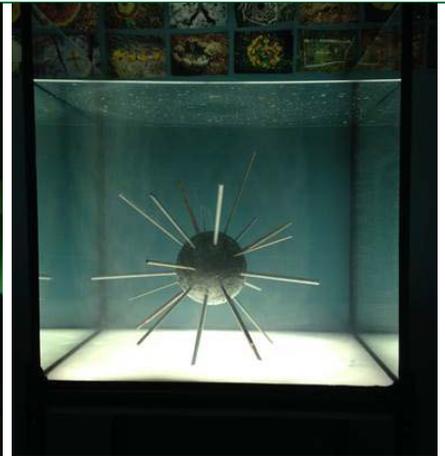
This original work is composed of three sculptures arranged in three aqueous media that are representative of seawater, volcanic water and industrial water. Each sculpture is made up of various metals and alloys (iron, stainless steel, aluminium, bronze, copper, brass etc.) assembled around a metal body made of nickel alloy (seawater), titanium (industrial water) and aluminium with stainless steel (volcanic waters). Galvanic coupling phenomena are therefore expected to lead to specific evolutions of the sculptures over time. The principle of the ephemeral work is to accentuate the mechanisms of corrosion to create sculptures that continue to evolve, once completed, in terms of both the metal materials and the solution.



a) Industrial water



b) Seawater



c) Volcanic water

The artist, Anna Mano, in tandem with Damien Féron for the technical & scientific aspects, seeks to produce an evolutive work in the risky gap where the work escapes its creator. It is the emancipation of the work that is sought and exposed, although not always visible. This is an artistic, original and philosophical use of corrosion.

FUTURE EUROCORRS THE EUROPEAN CORROSION CONGRESS

EUROCORR 2019

09-13 September 2019, Seville, Spain

Theme: *New times, new materials, new corrosion challenges*

EUROCORR 2019 is hosted by EFC's Spanish Member Society, SOCIEMAT.

Contact:

Spanish Materials Society (SOCIEMAT)

Urb. Los Arroyos c/25 n° 78, 28292 El Escorial, Madrid, Spain

E-mail: sociemat1996@gmail.com

Website: <http://www.eurocorr2019.org>



EUROCORR 2020

06-10 September 2020, Brussels, Belgium

EUROCORR 2020 is hosted by VOM asbl, the Belgian Association for Surface Treatment, in cooperation with VUB – SURF, UMONS and the Materia Nova Research Centre.

Contact:

VOM asbl, Kapeldreef 60, 3001 Leuven, Belgium

Website: <http://www.vom.be>

EUROCORR 2021

19-23 September 2021, Budapest, Hungary

EUROCORR 2021 is hosted by the Hungarian Corrosion Society – HUNKOR.

FORTHCOMING EFC EVENTS

25 April 2018, Zagreb, Croatia (EFC Event No. 435)

KORMAT 2018 - 23rd Conference of materials protection and industrial finish

Scope: corrosion, corrosion in drinking water, corrosion resistant materials, corrosion inhibitors, protective coatings, corrosion in concrete, cathodic protection, design consideration, shipbuilding, case histories

Website: <https://www.fsb.unizg.hr/hdzama/>

23-25 May 2018, DTU, Lyngby, Denmark (EFC Event No. 428)

17th Nordic Corrosion Congress

Scope of the programme: Monitoring and testing for research and industrial control; Concrete and steel constructions – corrosion and protective strategies; Degradation of non-metallic materials; Durable materials in aggressive environments (chemical industry, HTHP); Environmental and health consequences of corrosion; Corrosion protection of marine constructions (coatings, off-shore wind turbines); Advanced analysis techniques for corrosion investigations; Water and building installations (atmospheric corrosion, metal release, materials selection); Corrosion and reliability of electronics and micro mechanics (testing, failure analysis, corrosion prevention); Corrosion in the energy sector; Corrosion properties of advanced materials, surface coatings and new manufacturing techniques.

The programme is online available!

Website: http://www.atv-semapp.dk/arr2018/180523_nkm/pg_nkm.html

27-31 May 2018, Helsingør (near Copenhagen), Denmark (EFC Event No. 438)

ASST 2018 - 8th International Aluminium Surface Science and Technology symposium

The scope of the Symposium encompasses all aspects of aluminium surface science including state-of-the art surface modification methods and technological advances, characterization methods, performance evaluation, and industrial process development. Focused industrial sectors are aerospace, automotive, heat exchangers, architecture, electronics, lithography, packaging, nanotechnology, and others. Further, green technology solutions using aluminium will be part of the ASST 2018 symposium. Specific fields of interest for ASST 2018 include, but are not limited to, rolling and extrusion processes, material deformation effects, joining processes, multi-material assemblies, wet chemical surface processing, electrolytic processing, adhesion and organic interactions, plasma-based surface modification technologies, corrosion and protection mechanisms, self-healing, and other functional properties of products.

Website: <http://www.asst2018.com/>

11-15 June 2018, Frankfurt am Main, Germany (EFC Event No. 430)

ACHEMA 2018

32nd International Exhibition-Congress on Chemical Engineering, Environmental Protection and Biotechnology

Website: <http://achema.de>

20-22 June 2018 (EFC Event No. 437)

7. Korrosionsschutz-Symposium

Language: German

Das 7. Korrosionsschutz-Symposium stellt die aktuellen Trends und Entwicklungen des Korrosionsschutzes durch Beschichtungen in den Focus.

Website: <http://www.gfkorr.org>

22-27 July 2018, Cambridge, United Kingdom (EFC Event No. 418)

EMCR 2018 - Electrochemical Methods in Corrosion Research

This triennial conference covers all aspects of electrochemistry as applied to corrosion, including electrochemical methods (e.g. impedance, noise, polarisation, high-temperature), scanning and microprobe techniques (e.g. SECM, SVP, LEIS, AFM-based), electrochemical modelling from the atom to the application, in-situ and in-operando approaches, and complementary methods (e.g. eQCM, spectroscopy, diffraction, synchrotron) as applied to: environmentally assisted cracking and hydrogen detection, coatings; energy materials (e.g. oil and gas, nuclear, non-conventional); cathodic protection; inhibition and water chemistry; biomaterials.

Opportunities are currently available to sponsor events including: tea and coffee breaks, welcome reception, wine tasting, tour of Cambridge and punting, banquet. Sponsors will be acknowledged at the relevant event and will be able to display appropriate promotional material at the event. A small exhibition will be held in the same room as meals and the poster sessions. Sponsors will have priority for places at the exhibition, but we expect additional places to be available.

The call for papers is open. Abstract submission deadline: **30 April 2018**

Website: <http://www.emcrconference.org/>

9-13 September 2018, Krakow, Poland (EFC Event No. 429)

EUROCORR 2018

This is covered in some detail earlier in the present newsletter.

Website: <http://www.eurocorr2018.org>

26-28 September 2018, Hatay, Turkey (EFC Event No. 436)

CORSEM 2018 - XV. International Corrosion Symposium

Scope of the programme: Theoretical and experimental aspects of corrosion and corrosion control methods including material selection and design for corrosion services.

The call for papers is open. Abstract submission deadline: **25 June 2018**

Website: <http://korseme18.mku.edu.tr/>

26-28 September 2018 (EFC Event No. 433)

EFC-Workshop 2018: High Temperature Corrosion under Complex Conditions, Deposits and Salts: Towards Greener Energy

The workshop will bring together experts and young scientists with research interests in the high temperature corrosion of metallic materials and coatings in existing and emerging applications for greener energy conversion and transportation. The topics for oral and poster presentations may address, but are not limited to, experimental evaluation of corrosion kinetics, mechanistic understanding and modelling of corrosion processes and related degradation of material microstructures, using advanced analytical techniques for elucidating the complex corrosion phenomena including those induced by deposits and salts. All those interested in the workshop with or without a contribution are cordially invited to attend. The event continues the very successful series of EFC-workshops organised over the past two decades by Michael Schütze and Willem (Jo) Quadackers.

Website: <http://dechema.de/en/efcws2018.html>

3-5 July 2019, Palermo, Italy (EFC Event No. 439)

GN CORR 2019 - Giornate Nazionali sulla Corrosione e Protezione - XIII edizione

The most important national event on corrosion organised by AIM with the support of APCE and University of Palermo.

Language: Italian

Website: <http://www.aimnet.it/gncorrosione>

7-12 July 2019, Slovenia (EFC Event No. 440)

NuCoSS-19 - Nuclear Corrosion Summer School 2019

The summer school is primarily intended for people from nuclear authorities, industry and research organisations who would like to get a comprehensive overview on the field of nuclear corrosion. The programme is designed in a way that networking and a knowledge transfer from experienced experts to the «young generation» is facilitated.

This event is co-organised by the EFW Working Party on Nuclear Corrosion and the Horizon 2020 project MEACTOS.

Website: <https://icg-eac.org/event/nuclear-corrosion-summer-school-nucoss-19/>

9-13 September 2019, Seville, Spain

EUROCORR 2019

Website: <http://www.eurocorr2019.org>

Save the date! More detail to follow in subsequent newsletters.

6-10 September 2020, Brussels, Belgium

EUROCORR 2020

Save the date! More detail to follow in subsequent newsletters.

19-23 September 2021, Budapest, Hungary

EUROCORR 2021

Save the date! More detail to follow in subsequent newsletters.

For full details of these and a complete listing of many other future corrosion events held in Europe and throughout the world, go to the EFC Calendar of Events at: <http://www.efcweb.org/Events.html>

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