

EFC Working Party “Coatings” (WP14) Minutes of the Annual Business Meeting 2015

The official meeting of the Working Party “Coatings” is held in Graz on the occasion of the Eurocorr 2015 Congress, on Tuesday 8th September with 19 participants (list attached).

- Intro

The WP Chairman gives a Welcome to all participants and especially the EFC officials as well as the delegates officially nominated by their national member societies. He apologizes for an overlap of the WP meeting with the joint session on anodising. The agenda of the 2015 meeting is adopted.

The minutes of the 2014 meeting in Pisa are approved. They are also shown on the WP website. Anybody who has not received minutes or invitation is encouraged to contact the chairman or one of the EFC secretariats to be put onto the list.

- Report of the Chairman

The WP14 Chairman reports on the 2015 working party activities.

The Chairman reports that for EUROCORR 2015 around 75 papers had been submitted for the coatings sessions which is much less than in the years before. Paper selection has been done together with the vice-chair. As only 50 slots were available by filling the usual session lasting over the whole conference it was tried to shift as many papers as possible to other sessions (automotive, aerospace, ...). However, nevertheless not all wishes for oral presentations could be fulfilled. Unfortunately some gaps occurred afterwards in the programme due to cancellations which have not been communicated with the chairpersons and thus could not be filled.

A successful joint session has again been organised as usual with WP 3 on coatings for high temperatures. Moreover a joint session with WP 22 (Aerospace) on anodising layers for Al or Ti could successfully be organised.

AETOC 2015 has been held on Ile de Re near La Rochelle organized by Sebastien Touzain. An official report has been shown in the EFC newsletter as well as on the WP webpage. Next AETOC will be organized in Germany.

The chairman reports that the WP web page in the frame of the official EFC web pages is updated regularly by including the AETOC report and WP business meeting minutes.

The chairman reports that the task force to update NATO standards on marine corrosion and coatings has been set up between EFC and NACE. The only official EFC delegate remaining in this activity is Christian Favennec who also serves as vice-chair of this task force. During EUROCORR the 3rd meeting is to be held. EFC participation has to be discussed further in STAC and BoA.

The Chairman reports on the issues discussed during the EFC Science and Technology Advisory Committee (STAC) meeting held on Sunday 6th September. The new EFC presidency has started with Fatima Montemor as president and Damien Feron as vice president. H el ene Illaire has started as new EFC managing officer being part-time employed by EFC and CEFRACOR. A task force was formed to build up an EFC Young Scientist Community. The task force on corrosion in microelectronics led by Rajan Ambat has started its work successfully. One topic in conjunction with WP14 is also polymer/metal interfaces on PCBs. The WP Corrosion Education should be reactivated with a new focus on EFC corrosion courses as well as on young corrosionists.

Forthcoming EUROCORRs will take place 2016 in Montpellier, 2017 in Prague together with the ICC and 2018 in Krakow. A more intense cooperation with the Australasian Corrosion Association is still under construction. Relationship with NACE suffers from their attempts to establish a

NACE-EUROCORN conference. The further development of the WCO and EFCs participation is under discussion.

- *EUROCORN 2016*

The coatings session will again be organised as usual over the whole duration of the conference being divided into an organic, inorganic, metallic, pretreatments and self-healing coatings part. The following joint sessions with other EFC working parties are considered:

- Coatings for High Temperatures (with WP 3, Mathias Galetz)
- Tank/pipeline coatings and cathodic protection (with WP16, on initiative of Marcel Roche)

Further joint initiatives could be started concerning Coatings for Automotive (WP 17, Fouzia Hannour), Tribocorrosion (WP 18, Jean-Pierre Celis), Electrochemical Methods (WP 8, Arjan Mol), Corrosion in Microelectronics (TF). A joint session for protection of cultural heritage is planned for 2017 with WPs 21 and 1.

- *European projects and related activities*

Maria Lekka reported shortly about the new COST action e-MINDS "Electrochemical processing methodologies and corrosion protection for device and systems miniaturization". A summary is attached to the minutes.

Further activities for COST actions or an Innovative Training Network (Marie-Sklodowska-Curie Action) are discussed without decision.

- *Further activities of the WP14:*

The next AETOC workshop will be organised by Wolfram Fürbeth and Patrick Keil in April 2017 in Germany. Exact date and place still have to be determined.

- *Report on ISO activities*

The activities on standardisation of electrochemical methods in coatings investigations in the frame of ISO are still in progress. Concerning the published standards on EIS a widening on corrosion investigations in general is being worked out. Application of Electrochemical Noise is to be described in a Technical Report instead of a standard.

- *Date and place of the next meeting*

The next WP14 business meeting will be organised in Montpellier during EUROCORN 2016.

Frankfurt am Main, in July 2016
Wolfram Fürbeth, WP14 Chairman

e-MINDS: Electrochemical Processing methodologies and Corrosion Protection for Device and Systems Miniaturization - a networking COST initiative

Cost-effective device miniaturization is one of the most significant challenges faced by process engineering and industry. As systems are further miniaturized, component machining and assembly become increasingly complex and manufacturing costs grow. Electrochemical processing and corrosion science are key disciplines for the integration and the protection of small functional parts in complex micro- and nanosystems. A transfer of knowledge among the electrochemical community, micro- and nanosystems researchers and associated industry is timely and urgently required.

To this aim, in June 2015, the **COST Action e-MINDS** “Electrochemical Processing methodologies and Corrosion Protection for Device and Systems Miniaturization” was launched. This Action focuses primarily on the development of novel electrochemical fabrication processes with strong commitment to the requirements of European micro- and nanosystems industry. The innovative elements of the proposals include the identification of target materials for critical industrial applications at micro- and nanoscale. There is a need for materials with increased electrical performance, magnetic properties, high surface-area and **enhanced corrosion and tribocorrosion resistance**.

The Action is arranged in four WGs, which cover the most important aspects to develop and integrate materials by means of electrochemical processes in micro- and nanodevices. WG1: Electrochemical processing methods which focuses in the development of new electrolytes and the optimization of electrochemical parameters. WG2: Substrates, electrodes and templates which is in charge in finding solutions enabling the patternability of electrodeposits. **WG3: Protection against degradation of components by corrosion and corrosion-wear** which focuses on the **study of corrosion mechanisms** and in finding effective ways to protect materials in micro- and nanoscale; The two main objectives of WG3 are the identification of the **corrosion phenomena** operating at **small scales** by scaling down of the methodologies operative at the macro scale and development of new tools to assess the corrosion behaviour of miniaturized materials and the design and implementation of **protective coatings** to slow down or preclude the progress of corrosion and wear. WG4: Modelling, upscaling and integration.

The e-MINDS action involves researchers from 22 COST countries and 3 Non-COST countries. The Get together Workshop, organized in Cracow (October 28-30th 2015), involved more than 40 participants from different countries to form the WGs. In e-MINDS the education and participation of Early-Stage-Researchers is also enhanced. During the first year 5 Short terms Scientific Missions have been approved, and 10 are foreseen for the next year. Four Training schools for PhD students and early-stage researchers are programmed in the frame of the Action. The first Training school has been held in Brno University of Technology (Czech Republic) from the 11th until the 15th April 2016 with the participation of 60 PhD students from different European countries, highlighting the interest of young scientists in the Action topics. Next years Training schools are programmed at Schwäbisch Gmund (Germany), Cluj-Napoca (Romania) and Mons (Belgium).

From these lines, we would like to encourage an invite everybody to join this exciting networking platform, which will be continued for the next three years.

More information about the e-MINDS action and related activities can be found at:

1. http://www.cost.eu/COST_Actions
 2. http://www.cost.eu/COST_Actions/mpns/Actions/MP1407
- Follow us in facebook: <https://www.facebook.com/emindsMP1407/>

EFC-WP14 Coatings - Business Meeting on 8th September 2015 in Graz - List of Participants

NAME	AFFILIATION	E-MAIL ADDRESS
Wolfram Fürbeth	DECHEMA-Forschungsinstitut, Frankfurt/D	fuerbeth@dechema.de
<i>Oliver Royjoux</i>	<i>University of Mons</i>	<i>royjoux.oliver@umons.ac.be</i>
FATIMA MONTENOR	IST-UL (EFC)	fmontenor@ist.utl.pt
Patrick Keil	BASF Coatings GmbH	patrick.keil@basf.com
Santiago GARCIA	TU Delft (NovAM)	s.j.garciaespallargas@tudelft.nl
Douglas MILLS	University of Northampton, UK	Douglas.Mills@Northampton.ac.uk
OLE KNUDSEN	SINTEF	OLE.KNUDSEN@SINTEF.NO
Clarina Carneiro	CIN	clarina.carneiro@cin.gov.br
Christine Schille	University Hospital Tübingen	christine.schille@med.uni-tuebingen.de
FLAVIO DEFLOMAN	University of Trento	flavio.defloman@unitn.it
MICHELE FEDEL	UNIVERSITY OF TRENTO	michele.fedel@unitn.it
LEONZO FEDRIZZI	University of Udine	leonzo.fedrizzi@uniud.it
Krzysztof Augustyniak	PSK	krzyszek.augustyniak@akzonobel.com
Urszula Parniak	Polish Coatings Society	sekreteria@psk.org.pl

NAME	AFFILIATION	E-MAIL ADDRESS
Agnieszka Krolowicz	Polish Conversion Society	akrolowicz@ibdim.edu.pl
Jörg Vogelsson	Siber Technology Ah Zürich	vogelsang.jorg_a@ch.sike.com
Maria Lehka	University of Udine	maria.lehka@uniud.it
FRANCESCO ANNUNZIATA	UNIVERSITY OF UDINE	francesco.annunziata@uniud.it
Leila Khatai	Allnex	leila.khatai@allnex.com