



WP18@EUROCORR 2017

Minutes of the WP18 session at Eurocorr2017 (Prague, September 3-7 2017)

The city of Prague (Czech Republic) was the magnificent frame of a series of remarkable tribocorrosion events held in conjunction with Eurocorr2017 (September 3-7, 2017) that, together with the fantastic conference dinner, made this Eurocorr edition unforgettable for participating tribocorrosionists. Participants could not only appreciate the perfect organization of the congress but also the friendly atmosphere and, most important, the high scientific quality.

The first event consisted in the first **Tribocorrosion course** organized by Anna Igual Munoz (WP18 education manager) in the frame of the Eurocorr2017. Thanks to the much appreciated help and logistic organization by Milan Kuril, the event was held at the University of Chemistry and Technology of Prague in an agreeable atmosphere.

The course included three blocks of lectures divided along one single day. The first part introduced the fundamental tribocorrosion concepts (tribology and wear corrosion interactions). The second one was focused on the measurements techniques to evaluate tribocorrosion together with the theoretical tools for the results interpretation (tool-box for tribocorrosion). And the third group of lectures consisted in the discussion of practical cases in which the introduced tribocorrosion concepts were used. Five lecturers were involved in the course.

A total of 31 participants from 11 different nationalities (Spain, Switzerland, UK, Germany, Finland, Norway, Sweden, Chile, Colombia, Singapore, Iran) and representing different sectors such as academia, research institutes or industries attended the course.

The participants could assess the quality of the course through an ad hoc form. According to this evaluation, the course was found overall excellent and the content was found corresponding to the expectations. Recommendations for improvement included a larger presentation in electrochemical aspects and holding the course over two days in order to have more interaction time with the teachers and “digesting” the topic. These recommendations will be considered for future editions (the next one is expected to take place at Eurocorr2019 in Sevilla).

The second event was the **regular Tribocorrosion session** in the frame of the Eurocorr2017 conference. This session included 20 oral and 7 poster presentations, a new record (last year in Montpellier there were 12 oral and 3 poster presentations) showing the increasing popularity of tribocorrosion in the scientific community. The fact that Eurocorr2017 was jointly held with the 20th International Corrosion Congress (ICC) certainly largely contributed to this success. I would like to thank here the ICC representative Prof. J.A. Calderon for the good collaboration we had in organizing this session.

Concerning the content, I was personally impressed by the extremely high scientific quality of the presentations. Even more pleasing was the fact that the majority of talks and posters was given by young scientists (PhD students and PostDocs). The participation of young motivated scientists is a fundamental premise for the further development of tribocorrosion. So, in these sense Eurocorr2017 was more than reassuring.

The scientific content confirmed the evolution seen in Montpellier in 2016. A large fraction of the presented papers (14 over 26) dealt with tribocorrosion issues related to medical implants. The role of third bodies and organo-metallic tribolayers on tribocorrosion was highlighted. Other topics

treated were fundamentals aspects, modeling (numerical and analytical), new composite materials and coatings for tribocorrosion applications, tribocorrosion in polishing and seawater environments. An interesting novelty was the first studies of non passive materials were the object of two presentations studying carbon steel operating in seawater, carat gold alloys and novel self lubricating Cu-WS₂ composite materials. Another interesting issue was the use of statistical multi parameter analysis for the characterization of tribocorrosion in complex environments such as copper tailing slurries. A very reach and high quality session that was followed in average by 40 to 50 attendants and characterized by intense discussions during and after the oral and poster presentations.

The last but not least event held at Eurocorr2017 was the **WP18 business meeting**. This year Manel Rodriguez Ripoll (AC2T Research GmbH), the WP18 technology transfer manager, organized and directed a special 40 minutes meeting on “Mitigation of tribocorrosion in industrial applications: Identification of its causes, material selection and surface protection technologies”. In particular the meeting aimed at assessing following points:

- Awareness of the tribocorrosion problematic among engineers, managers and customers
- Quality criteria in industry for selecting tribocorrosion resistant materials (test methodologies, test conditions, lab to field upscale)
- Need for standards

For this, after a short introduction by M. Rodriguez Ripoll, two invited senior representatives of a large company producing biomedical implants and a coating manufacturer kindly shared their opinion on the topics. These presentations prompted a very intense and open discussion with the audience. Several outcomes of the discussion are listed in the following. Increasing awareness of tribocorrosion issues is needed especially for laypersons such as for example medical doctors or engineers without materials science background. In this sense educational activities are welcome. The fundamental knowledge and modelling developed by academia constitute a valid asset for R&D staff in industrial companies. Guidelines for developing dedicated tribocorrosion bench tests would be also welcome.

The industrial representatives stressed out the crucial importance of developing appropriate tribocorrosion standards, as they are the prerequisite for establishing the necessary common dialog reference between device or material producer and their customers. For the time being no standards or widely accepted guidelines are available.

In short, the tribocorrosion community should further develop training actions and fundamental research. In additional a particular effort should be devoted to developing standards. A nice road map for the WP18 community!

So, Eurocorr2017 was an extremely intense but fruitful meeting for tribocorrosionists. This success could be achieved only by the engagement of the WP18 board and in particular by Anna and Manel who did a really great good job in organizing the course and the business meeting, respectively. I would like to thank the invited industrial speakers, the oral paper and poster presenters, the course participants as well as the whole audience for the stimulating atmosphere characterising WP18@Eurocorr2017.

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Chair of WP18 Tribocorrosion

European Federation of Corrosion

http://efcweb.org/WP+Tribo_Corrosion-p-104114.html