

Minutes

Fall Business Meeting of the EFC Working Party 4 'Nuclear Corrosion'

August 31, 2022, 16:30 – 17:30

Written by:

Laure Martinelli & Stefan Ritter

Diffusion:

WP 4 members & friends

Roman Bender (EFC Scientific Secretary)

Stefan Ritter (EFC STAC Chair)

Tomáš Prošek (EFC President)

Attendees (26):

A. Barou (Framatome), M. Bullock (Univ. of Leeds), M. Caruso (Laborelec), C. Christophe (CEA), A. Couet (Univ. of Wisconsin Madison), D. Féron (CEA), A. Fouchereau (CEA), Z.-W. Fu (NTH Univ.), H. Hänninen (Aalto Univ.), R. Kilian (Framatome GmbH), A. Legat (ZAG), E. Lopes Maia (SCK CEN), A. Mackiewicz (PSI), L. Martinelli (CEA), F. Marti (CEA), E. Parker (NNL), V. Pellouard (Framatome), C. Petersson (KTH), J. Piippo (Cormet), S. Ritter (PSI), P. Szakalos (KTH), V. Tsisar (SCK CEN), A. Vernouillet (CEA/CNRS), K. Yuan (Univ. of Bristol), B. Zajec (ZAG), M. Zecho (Framatome GmbH).

Apologies for absence received from:

W. Bogaerts (KU Leuven), C. Guerre (CEA), Ch. Lilja (SKB), H.P. Seifert (PSI).

Agenda:

- 1) Opening of the meeting, apologies for absences, approval of the agenda
- 2) WP 4 awards ceremony
- 3) Approval of the minutes of the 2021 Fall Meeting
- 4) EFC WP 4 internal matters
 - Members and “friends”
 - WP 4 prizes
 - Call for nominations for the 2023 Coriou Award and Jury selection
- 5) EFC WP 4 publications
 - Books & special issues published or under publication
 - Future publications
- 6) EFC WP 4 past events
 - LTC 2022
 - 3rd Nuclear Corrosion Online Seminar
 - European-Chinese Corrosion Online Seminar
 - ICCPA 2022
- 7) EFC WP 4 future events (other than EUROCORRs)
 - NuCoSS-23
- 8) EUROCORR's
- 9) Discussion about other WP 4 activities
- 10) Any other business (website, next meeting, EU-projects, etc.)
- 11) Closure

Appendix:

Appendix 1) Meeting slides presented by Stefan Ritter.*

**) Document available only on the private space of the EFC WP 4 website, for WP 4 members/friends only.*

1. Opening of the meeting, apologies for absences, approval of the agenda

Stefan Ritter opened the Fall Meeting and thanked the audience for coming. The agenda was presented and has been approved (see above).

2. EFC WP 4 awards ceremony

The ceremony began with presenting the prizes, which are the same for the best poster and best oral presentation. They consisted of the new Green Book (“Nuclear corrosion: research, progress and challenges”, No. 69) kindly sponsored by Elsevier, a backpack, a Swiss army knife (engraved with “WP4 2022”), a drinking bottle (all sponsored by PSI) and a 100.- € AMAZON gift card sponsored by Cormet.

Stefan Ritter emphasized that all presentations of the young presenters were on a very high level, but that finally one needed to be selected and this was Annabelle Vernouillet (CEA, CNRS, France) for her presentation on “Corrosion of carbon-steel casing used in deep geological radioactive waste repository”. Because the ranking was very tight and as an extra Green Book was available, also the second place was awarded and went to Eloa Lopes Maia (SCK CEN, Belgium) for her talk “The characterization of austenitic stainless steel 316L thermal oxides and their effect on the initiation of liquid metal corrosion”.

The poster prize was given (already for the second time after 2021) to Adrianna Mackiewicz (PSI, Switzerland) who presented an excellent poster titled “Microstructural investigation of oxide films on Alloy 182 weld metal formed under BWR zinc water chemistry”.

WP 4’s honorary medal, the Henri Coriou Award, which is given every year to an expert (or group), highly recognized in the nuclear corrosion field, has also been awarded this year. A Jury, composed of the Chair, Vice-Chair of the WP 4 and three members nominated during the Fall Meeting (the year before the medal is awarded), was selecting the recipient from a number of excellent nominees. In 2022, the Coriou Award has been attributed to Pål Efsing from Ringhals AB (Sweden) in recognition of the outstanding contributions to corrosion science and engineering in the nuclear field. The prize, which consists of a medal, a diploma and the Green Book on the “Coriou Effect” (No. 67), could not be given during the EUROCORR, but was already handed over by Stefan Ritter in May 2022 during the ICG-EAC Meeting in Tampere (Finland). The sponsorship of the medal and book by CEA has been gratefully acknowledged.

3. Approval of the minutes of the 2021 Fall Meeting

No comments were received and no corrections have been asked for. Therefore, the 2021 minutes were approved by all.

4. EFC WP 4 internal matters

Stefan Ritter reminded that the list of members and friends is visible on the internal area of the WP 4 website (password protected). Then he informed the participants about members and friends of the WP 4. The members of the WP include delegates nominated by the member societies of the EFC and individuals nominated by the Chair. Those who are interested in the activities of the WP but not member of their national EFC member society are called ‘Friends’. People who currently have no national EFC member society can create a local branch (information about it can be found on the website of the EFC).

Thereafter, Stefan presented the WP 4 objectives for the 2021-2023 period. These objectives are the same as those of the 2018-2020 period, which were approved in 2017 and confirmed in 2020:

- To provide links between European teams and EU-funded programs in the nuclear corrosion field, with an opening on to the world.
- To initiate and stimulate opportunities of exchange of scientific and technical subjects related to nuclear corrosion, particularly on today’s main nuclear research areas (waste systems, water reactors, generation IV and fusion reactors).
- To promote corrosion science and technical developments through events such as seminars, workshops, publications, etc.

Then Stefan asked if any changes to the WP 4 prize rules are needed. It was discussed about the eligibility criterion of the oral presentation prize that a full paper or at least an extended abstract needs to be submitted to the conference proceedings, but currently no changes were proposed. It should be decided every year if exceptions from this rule can be made. The discussion about the low number of full papers being submitted to the conference proceedings continued for a while. Laure Martinelli proposed to continue also during the next years what has been organized by Raul Rebak this year (if he would agree): to publish the EUROCORR full papers in a special issue of the Corrosion Review journal (edited by R. Rebak). Publication in a reviewed journal could attract young scientists and

encourage them to write a full paper. By this way the number of oral award candidates could increase.

Thereafter Stefan introduced the composition of the Juries of the prizes and Coriou Award for this year (see slide 10 in Annex 1) and proposed the Jury composition for next year's Coriou Award: Chair, Vice-Chair, the 2022 winner (Pål Efsing) and Christina Lilja. But Christina announced beforehand that she is member of the Jury already since a long time and would be happy to make space to a new face for 2024. For the last Jury seat Stefan proposed Raul Rebak to remain member and he accepted. The meeting attendees silently approved the proposed persons. Stefan recalled that all members and friends can nominate candidates (persons or groups) for the 2023 Henri Coriou Award until February 28, 2023.

5. EFC WP 4 publications

Stefan Ritter reminded all on the last two WP 4 publications: (1) The EFC Green Book based on the 50 years WP 4 anniversary, which has been published in August 2020: Woodhead Publishing, August 2020, 497 pages, ISBN: 978-0-12-823719-9. (2) A special issue of the LTC 2019 workshop proceedings has been published in Materials & Corrosion (Volume 72, Issue 1-2, January 2021).

Publications planned for 2023 are: a Green Book on "Corrosion modelling with cellular automata", edited by D. Féron (CEA) and D. Di Caprio (Chimie ParisTech), a special journal issue from the LTC 2022 workshop in Materials & Corrosion and, as mentioned in the previous section, a special issue "EUROCORR 2022 - Nuclear Corrosion" in the Corrosion Reviews journal, edited by Raul Rebak. Raul presented the special issue and welcomed presenters to submit a full paper.

If anyone has ideas for other publications, the WP Chair is happy to support such actions or Green Book proposals.

6. EFC WP 4 past events

Since the last EUROCORR, an online seminar was organized by the Surface Science Editorial Department (Chongqing, China) together with the EFC/WP 4 in March 2022 (lecturers: C. Padovani (Jacobs, UK), D. Engelberg (University of Manchester, UK), Th. Couvant (EdF, France), S. Ritter (PSI, Switzerland)), which was attended by approx. 60 persons.

The third Nuclear Corrosion Online Seminar took place on April 25, 2022. A very interesting talk was given by Peter L. Andresen on "Environmentally-assisted cracking of structural materials in light water reactors". Approx. 50 participants attended and the slides and video are available via the WP 4 website or EFC Hub.

In June 2022 the 8th International Workshop on Long-term Prediction of Corrosion in Nuclear Waste Systems (LTC 2022) took place in Baden (Switzerland). 70 participants from 15 countries visited the Grimsel Test Site, Nagra's underground research facility, followed by three days of cutting-edge corrosion science presentations and posters.

Finally, Laure Martinelli reported that four invited lectures, organized by WP 4, were given during the 2022 International Conference on Corrosion Protection and Application (ICCPA 2022, July 2022) in the "Corrosion Protection of Nuclear Engineering and Nuclear Power Materials" session. This conference was held both, remotely and face-to-face in China.

7. EFC WP 4 future events (other than EUROCORRs)

Stefan Ritter listed some future events that are (co-)organized by the WP 4:

- Stefan suggested to organize a fourth edition of the Nuclear Corrosion Online Seminar (e.g., around the Corrosion Awareness Day 2023, April 24) and asked for topics or contributors. Some positive feedback was received. Stefan said that the duration of the seminar is approx. 1 to 2 hours and that suggestions are welcome any time until early-2023.
- The third edition of the Nuclear Corrosion Summer School – NuCoSS-23, will be organized from July 2 to 7, 2023. It will be held in Slovenia, in the same place as the last one (NuCoSS-19). The registration fee will be very reasonable and contains almost everything (accommodation, meals, breaks, lectures and even one excursion). The registration will open around October and two student grants are sponsored by the EFC.

8. EUROCORRs

Stefan Ritter gave a summary of some facts about EUROCORR 2022. He underlined the rather high number of attendees (29 to 61 persons with an average of approx. 45) in the nuclear corrosion session and the very high quality of presentations, constituting of 29 oral presentations and 4 posters. The total number of registered EUROCORR attendees was approx. 820 (approx. 520 talks and 110 posters).

Then Stefan recalled the future EUROCORRs:

- EUROCORR 2023, August 27 – 31, 2023, Brussels: Regular nuclear corrosion session and proposed a repetition of the joint session on 'EAC initiation' together with WP 5 & 22, which was accepted by all.

Stefan asked for other possible topics for special sessions. Damien Féron proposed a topic on nuclear waste corrosion with Bruno Kursten (who is in charge of the LTC workshops). Discussion then focused on the importance of characterization in corrosion. Adrien Couet proposed "In-situ characterization methods" as a special session topic.

- EUROCORR 2024, Sep. 1 – 5, 2024, Paris, France: Regular nuclear corrosion session; proposals for special sessions are welcome.
- EUROCORR 2025, Sep. 7 – 11, 2025, Stavanger, Norway: Regular nuclear corrosion session; proposals for special sessions are welcome.

9. Discussion about other WP 4 activities

Stefan Ritter reminded that there is a possibility of requesting some money from the EFC (up to approx. 2000 €) to support WP 4 activities (e.g., WP 'extra' meetings, grants, support of young colleagues/students, publications, etc.). But this money, given by the EFC, cannot be used to invite a special guest or lecturer to the EUROCORR. Any ideas are very welcome and for 2024 they should be submitted to the WP 4 Chair no later than July 2023.

Any other ideas for WP 4 activities are always welcome!

10. Any other business

Stefan Ritter announced that he has been elected or "promoted" to act as Chair of the Scientific and Technology Advisory Committee (STAC) for the period of 2023 to 2025.

He reminded that the up-to-date WP 4 website contains lots of information and that also the EFC Hub should be used (was not used too much so far). He encouraged everyone to participate in WP 4 activities and to send any nuclear corrosion-related information to the WP 4 Chair for adding it to the website.

He also mentioned some European projects related to WP 4: MEACTOS (finished), INCEFA-SCALE and POEAM (proposal rejected in 2022 and to be re-submitted in October 2023) and that suggestions for any additional WP 4 meetings are welcome.

Finally, Stefan announced that next year probably the WP 4 Vice-Chair and Chair mandates will officially end and that we will have to elect or confirm them (and thereafter every three years).

11. Closure

As no other point was raised, the meeting was closed. Stefan Ritter thanked the participants for attending the meeting and for their support of the WP 4 activities. As always, he emphasised that an active participation in the activities of the WP 4 is essential to be able to fulfil its objectives and that any wishes, suggestions or ideas are always welcome.