

Minutes

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

September 7, 2017

Prague Congress Centre, Prague, Czech Republic

Written by:

Laure Martinelli and Stefan Ritter

Diffusion:

Attendees

WP4 members and friends

Roman Bender (EFC Scientific Secretary)

Hélène Illaire (EFC Managing Officer)

Ines Honndorf (EFC Website)

Damien Féron (EFC President)

Attendees:

Anne-Cécile Bach (CEA), Léa Bataillon (CEA), Quentin Bignon (CEA), Sophie Bosonnet (CEA), Tomas Cernousek (CVR), Sara Chakri (ANDRA), Véronique Dewynter (CEA), Cecilie Duhamel (MINES ParisTech), Ulla Ehrnstén (VTT), Salma El Euch (AREVA NP), Elena Fedorova (Siberian Federal Univ.), Damien Féron (CEA), Hannu Hänninen (Aalto Univ.), Wenle He (Sandvik), Tadeja Kosec (ZAG), Aneta Krausova (UCT Prague), Miroslav Krepec (UJV Rez), Andraz Legat (ZAG), Michael Lowden (Rolls-Royce), Jan Macak (UCT Prague), Dimitry Marchenkov (NIKIET), Laure Martinelli (CEA), Sophia Necib (ANDRA), Juha Piippo (CORMET), Stefan Ritter (PSI), Timo Saario (VTT), Michel Schlegel (CEA), Hans-Peter Seifert (PSI), Kirill Shutko (NIKIET), Konsta Sippilä (VTT), Jana Tonarova (UJV Rez), Lukas Tuma (UCT Prague), Bojan Zajec (ZAG)

Apologies for absence received from:

Séverine De Vroey (Engie Laborelec), Dirk Engelberg (Univ. Manchester), Mirka Ernestova (UJV), Benoit Gwinner (CEA), Renate Kilian (AREVA GmbH), Christina Lilja (SKB), Stuart Lyon (Univ. Manchester), Cristiano Padovani (AMEC FW)

Agenda:

- 1) Opening of the meeting, apologies for absences, approval of the agenda, and WP4 Poster and Oral Prizes award ceremony
- 2) Approval of the minutes of the 2016 Fall Meeting (in Montpellier)
- 3) EFC WP4 internal matters
- 4) EFC WP4 publications
- 5) EFC WP4 past events
- 6) EFC WP4 future events
- 7) EUROCORR's
- 8) Any other business (website, next meeting, EU-projects, etc.)
- 9) Closure

Annex:

Annex 1) Slides presented by S. Ritter*

Annex 2) CV of L. Martinelli*

Annex 3) New versions of the WP4 Prize rules*

**) Document available only on the private space of the EFC WP4 website, for WP4 Members*

1. Opening of the meeting, apologies for absences, approval of the agenda, and WP4 Poster and Oral Prizes award ceremony

S. Ritter opened the Fall Meeting and thanked the audience for coming and announced some apologies received. The agenda was presented and has been approved by all (see above and the slides in Annex 1).

Two prizes are given during each EUROCORR. Each prize includes a diploma and, thanks to generous sponsorship, this year also a book (sponsored by CEA, www.cea.fr) and a beautiful "Finish-style" knife (sponsored by Cormet, www.cormet.fi). The poster prize included also a voucher for a € 100.- purchase at Wiley (sponsored by Wiley, www.wiley.com). S. Ritter recalled that the juries for these two prizes consist of three to five persons, including the WP4 Chairman and/or Vice-Chair and, to be eligible for the prizes, a full paper had to be submitted for the conference proceedings. The best poster presentation award has been attributed to Kazutoshi Fujiwara (Central Research Institute of Electric Power Industry, Japan) for his poster on the "Effect of dissolved oxygen on flow-accelerated corrosion in neutral and alkaline solutions". The best oral presentation prize has been awarded to Anne-Cécile Bach (CEA, France) for her presentation on "Hydrogen trapping by irradiation-induced defects in 316L stainless steel".

2. Approval of the minutes of the 2016 Fall Meeting (in Montpellier)

No comments were received by S. Ritter and no corrections have been asked for. Therefore the 2016 meeting minutes were approved.

3. EFC WP4 internal matters

S. Ritter informed the participants that members of the Working Party include delegates nominated by the member societies of the EFC and individuals nominated by the Chairman. Those who are interested in the WP activities but not member of an EFC member society can get "Friends" of the EFC and can fully participate in the activities of the EFC. Everyone was reminded to fill the meeting attendee sheets.

Because the current WP4 Vice-Chairman D. Féron has been elected President of the EFC for the period 2017 and 2018, a new Vice-Chairman has been proposed by S. Ritter: Laure Martinelli (CEA, France). S. Ritter asked if there would be any other candidates for this position, but no additional nominations were raised. Thereupon L. Martinelli introduced herself showing a few slides (see Annex 2). After this, all WP4 members present were invited to elect a new Vice-Chairman. With no vote against, L. Martinelli has been elected Vice-Chairman of the EFC WP4, her term starting on January 1, 2018.

Thereupon, S. Ritter briefly presented the WP4 objectives for the 2018-2020 period. The objectives remained unchanged and are the following:

- 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.

No comments were received and the objectives were approved.

Then S. Ritter proposed slight adjustments of the rules for the WP4 awards:

- Poster Prize: Beside some minor amendments, S. Ritter proposed to mention the "Young EFC Board" possibly nominating a jury member and to remove the eligibility criterion that a full paper needs to be included in the proceedings (usually this eliminates almost all posters from the nomination list).
- Poster Prize: Beside some minor changes, S. Ritter suggested also here to mention the "Young EFC Board" possibly nominating a jury member.
- Henri Coriou Award: S. Ritter proposed some minor adjustments to the rules.

After a short discussion the assembly approved all proposed adjustments (see the new versions in Annex 3).

The jury of the 2018 Henri Coriou Award will consist of the WP4 Chair, Vice-Chair and the 2017 winner (H. Hänninen), plus two more experts. S. Ritter asked for suggestions to complete the jury. Christina Lilja (SKB, Swedish Nuclear Fuel and Waste Management Co.) was suggested (*update: she*

confirmed her participation). The fifth jury member will be assigned by S. Ritter during the next few weeks. Finally, he asked all attendees to nominate candidates for the prize no later than February 28, 2018.

4. EFC WP4 publications

On behalf of the EFC WP4, two special issues were published in the Corrosion Engineering, Science and Technology journal:

- Proceedings of the 6th Int. workshop (WS) on ‘Long-Term Prediction of Corrosion Damage in Nuclear Waste Systems’ (LongTermCorr 2016), published online on August 23, ‘open access’ in: Corrosion Engineering, Science and Technology, 2017, Vol. 52, No. S1, 1, <https://doi.org/10.1080/1478422X.2017.1344415>.
- Special issue on ‘Corrosion of Nuclear Materials’, consisting of 9 papers from the Nuclear Corrosion sessions of EUROCORR 2015 & 2016 will be published online soon in the Corrosion Engineering Science and Technology journal (*update: in the meantime it is published in: Corrosion Engineering, Science and Technology, 2017, Vol. 52, No 8, <https://doi.org/10.1080/1478422X.2017.1388591>*).

S. Ritter then presented plans for the publication of a green book of the EFC, based on the 50 years WP4 anniversary WS. It would be a nice “follow-up” on the very first EFC book named “Corrosion in the Nuclear Industry” from 1989. Publication is anticipated in early-mid 2019.

No further ideas or suggestions for future WP4 publications were received.

5. EFC WP4 past events

During EUROCORR/ICC 2017, WP4 organized a ‘50 years WP4 anniversary WS’ in which nine very interesting lectures were given covering many aspects of nuclear corrosion (see photographs on slide 12 of Annex 1):

- General overview/history, D. Féron (CEA)
- EAC in stainless steels, U. Ehrnstén (VTT)
- EAC in Ni-base alloys, D. Gomez-Briceno (Ciemat)
- EAC of C & LAS, H.P. Seifert (PSI)
- Cu behaviour in nuclear waste disposal, H. Hänninen (Aalto Uni.)
- Modelling of corrosion in nuclear waste containers, C. Padovani (AMEC FW)
- FAC in PWRs, S. Trevin
- Corrosion in Zr alloys, M. Preuss (Uni. Manchester)
- Corrosion in supercritical water reactors, R. Novotny (JRC)
- (*MIC, R. Kilian (AREVA GmbH): had to cancel due to sickness*)
- (*Corrosion in reprocessing, R. Robin (CEA): cancelled*)

S. Ritter proposed to prepare a green book with chapters based on these lectures (see EFC WP4 publications). It was discussed to possibly add two chapters, one on irradiation effects (e.g., IASCC) and one on Generation IV systems (e.g., corrosion in liquid metals, Na and PbBi).

6. EFC WP4 future events (other than EUROCORRs)

S. Ritter listed a few future events dedicated to corrosion and nuclear systems:

- A WS (contact person: D. Féron): 7th Int. WS on Long-Term Prediction of Corrosion Damage in Nuclear Waste Systems (LTC 2019), 2019, Nancy, France.
- The 2nd edition of the Nuclear Corrosion Summer School ‘NuCoSS-19’, which will be co-organized by WP4 in cooperation with the H2020 project MEACTOS. The date and location will probably be July 7-12, 2019, in Slovenia (the 1st edition of this summer school was held in Bled, Slovenia in July 2015).
- A new edition of the school/course dedicated to “Modelling of corrosion” is proposed by CEA for the end of 2018. The location could be France or USA (Berkeley).

7. EUROCORRs

S. Ritter summarized the WP4-related events during EUROCORR/ICC 2017. He underlined the high number of attendees during all sessions (between 40 and 80 persons) and that, together with the 50 years anniversary WS, this has been the largest Nuclear Corrosion session ever (9 invited talks, 46 regular talks and 15 posters = 70 presentations in total)!

Thereafter, S. Ritter presented the future EUROCORRs:

- EUROCORR 2018, September 9 – 13, 2018, Krakow, Poland: will include a regular Nuclear Corrosion session. So far no specific workshop is planned, but proposals can still be submitted during the next two weeks.
- EUROCORR 2019, September 9 – 13, 2019, Seville, Spain: will include a regular Nuclear Corrosion session and maybe a WS on EAC initiation, co-organized by the H2020 project MEACTOS. Further suggestions for WSs are welcome.
- EUROCORR 2020, September 6 – 10, 2020, Brussels, Belgium.

8. Any other business

S. Ritter presented the WP4 website (www.efcweb.org/WP4) and reminded the attendees to regularly visit it. It is always up-to-date and contains some news, meeting minutes, future and past WP4 events, links to related EU-projects, and other useful information. The password for the internal area is available for WP4 members and friends upon request from the WP4 Chairman.

Then three H2020 EU-projects, related to nuclear corrosion activities were briefly mentioned:

- Mitigating environmentally-assisted cracking through optimisation of surface condition – MEACTOS (www.meactos.eu)
- Increasing safety in NPPs by covering gaps in environmental fatigue assessment – INCEFA+ (www.incefaplus.unican.es)
- Safe long-term operation of LWRs through the improved understanding of radiation effects – SOTERIA (www.soteria-project.eu)

Then Kirill Shutko (NIKIET, Russia) briefly introduced some activities related to EPR-testing and sensitization of stainless steel. It was discussed if a task force and/or workshop at a EUROCORR could be organized. It was concluded that this would be interesting and that K. Shutko should take

the initiative to form such a task force, which would be supported by WP4. In case a WS should be conducted already during the EUROCORR 2018, a one-page proposal needs to be sent to S. Ritter by the end of September at the latest.

As last item, S. Ritter announced that the next business meeting of the WP4 will be held in Krakow, during EUROCORR 2018.

9. Closure

Finally the meeting was closed, as no other point was raised, by S. Ritter thanking all attendees for their attendance and support. He kindly reminded all to actively participate in the activities of the WP4 and to send any suggestions or ideas for future tasks to the WP4 Chair or Vice-Chair!