



**EUROPEAN FEDERATION OF CORROSION
EUROPÄISCHE FÖDERATION KORROSION
FÉDÉRATION EUROPÉENNE DE LA CORROSION**

**MINUTES OF THE WP4 FALL MEETING
HELD IN STADTHALLE GRAZ, GRAZ, AUSTRIA
WEDNESDAY, SEPTEMBER 9TH, 2015**

Written by:

Damien Féron and Virginie Soulié

Diffusion:

Meeting participants

EFC WP4 Members

Roman Bender (EFC Scientific Secretary)

Dagmar Glänzer (Dechema)

Ines Honndorf (EFC Website)

Hélène Illaire (EFC Executive Secretary)

EFC WP4 "NUCLEAR CORROSION"

Chairman	Damien Féron	CEA/Saclay	DEN/DANS/DPC/SCCME	Bât. 458 - PC 50	F-91191 GIF SUR YVETTE Cedex
Vice-Chairman	Stefan Ritter	PSI	Department Nuclear Energy and Safety		CH-5232 VILLIGEN PSI
Secretary	Mylène Belgome	CEA/Saclay	DEN/DANS/DPC/SCCME	Bât. 458 - PC 50	F-91191 GIF SUR YVETTE Cedex



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Attendance:

Leon Cizelj	Jozef Stefan Institute, Slovenia
Damien Féron	CEA, France
Frank Fischer	TÜV-Nord Hamburg, Germany
Anatta Krausová	UCT Prague, Czech Republic
Bruno Kursten	SCK-CEN, Belgium
Alice Laferrere	NNL, UK
Andraž Legat	ZAG, Slovenia
Michael Lowden	Rolls-Royce, UK
Daniela Marusakova	Rez nuclear research center, Czech Republic
Cristian Perez Brokate	CEA, France
Stéphane Perrin	CEA, France
Stefan Ritter	PSI, Switzerland
Kirill Shutko	Nikiet, Roumaia
Zuzana Skoumalová	ÚJV Řež, a.s.
Nicholas Smart	AMEC FW, UK
Virginie Soulié	CEA, France
Ignasi Villacampa Rosés	PSI, Switzerland

Apologies for absence received from:

Mylène Belgome	CEA, France
Rik-Wouter Bosch	SCK-CEN
Thierry Couvant	EDF, France
Odile De Bouvier	EdF, France
Catherine Guerre	CEA, France
Benoît Gwinner	CEA, France
Jan Macak	Institute of Chemical Technology, Czech Republic
Valérie L'Hostis	CEA, France
Christina Lilja	SKB, Sweden
Stuart Lyon	University of Manchester, UK
Paul Rebak	GE, Usa
Michel Schlegel	CEA, France

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- * Document available only on the private space of the EFC WP4 website, for WP4 Members
 - ✓ Annex 1 Agenda of the Graz Fall Meeting
 - ✓ Annex 2 Best Oral and Poster Presentation Awards
 - ✓ Annex 3 Rules for the Henri Coriou Award
 - ✓ Annex 4 NuCoSS-15 in "EFC Newsletter N°23" (September 2015)
 - ✓ Annex 5 Slides presented by D. Féron*

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1. OPENING AND APPROVAL OF THE AGENDA

D. Féron opened the Fall meeting and thanked the audience for coming. Agenda was presented and approved, as no comments were made (Annex 1).

2. APPROVAL OF THE MINUTES OF THE PISA 2014 FALL MEETING

No comments were received by D. Féron and no corrections have been asked. These minutes were approved.

3. EFC INTERNAL MATTERS

A short presentation of the WP4 objectives was made.

D. Féron informed the participants that a new Award for young scientist is created by the EFC in order to encourage travels of young scientist and exchanges between laboratories. The rules of this new award will be on the EFC website before the end of the month. The Members of the EFC WP4 are encouraged to apply for this award which is in accordance with the WP4 second objective: "to initiate and stimulate opportunities of exchanges on scientific and technical subjects...".

D. Féron informed the participants that the Members of the Working Party include delegates by the Member societies of the EFC and individuals nominated by the Chairman. Those who are interested by the WP but not member of an EFC Member society and not nominated by the Chairman are "Friends". Today there are 47 EFC WP4 Members and 24 Friends.

3.1. Election of the Vice-Chairman

The structure of the WP4 is recalled with the Chairman, Vice-Chairman and Secretary. Elections at these positions are planned every 3 years. S. Ritter, in charge of the EFC WP4 website, is proposed as Vice-Chairman. With no vote against and no abstention, S. Ritter is elected Vice-Chairman of the EFC WP4 at the unanimity of the WP4 Members attending the meeting.

D. Féron thanked Th. Couvant (EDF), past WP4 Vice-Chairman, for his support.

3.2. EFC WP4 Awards

D. Féron recalled that two prizes have been given during this EUROCORR. Each prize includes a diploma, a book given by CEA and a Swiss army knife given by PSI.

- ✓ The "Best Poster Presentation Award" (given four times so far) to Miss Zuzana Skoumalova (UJV Rez, CZ).
- ✓ The "Best Oral Presentation Award" for young researchers and engineers (given two times so far) to Miss Alice Laferrere (NNL, UK).
- ✓ "Honorary medal" of the Nuclear Corrosion Working Party: this new EFC WP4 Award decided during the Fall meeting in Stockholm (2011) has not been given up to now, due to a lack of funding. Nevertheless, the CEA "Corrosion Department" decided to fund this award and to call it "Henri Coriou Award". An original medal presented in Annex 4 has been created by the "Monnaie

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de Paris" based on a painting (made by Juliette Plisson, a French painter) of the crack of Alloy 600 published by Coriou in 1959.

The rules of this award have been examined in details by the participants and some modifications have been accepted either proposed by the Chairman or by the audience. The new rules are in Annex 3 and the modified sentences or words are put in evidence.

The jury is composed of 4 Members: the Chair (D. Féron), the Vice-Chair (S. Ritter) and two Members elected during the meeting: B. Kursten and S. Lyon (D. Féron will ask S. Lyon if he accepts this nomination).

4. EFC WP4 PUBLICATIONS

On behalf of the EFC WP4, one publication has been made:

- ✓ Special issue of "Corrosion Engineering, Science and Technology" - [Issue 6: Long-Term Prediction of Corrosion Damage in Nuclear Waste Systems](#) (EFC event 360), September 2014, (401-587), 30 papers.

One publication is planned:

- ✓ Green book "50 years of stress corrosion cracking of nickel based alloys - The Coriou effect" (from the presentations made during the "Jubilee day" on January 26th, 2010) - Publication planned at the end of 2015.

No future green books are planned. D. Féron informs the WP4 Members that Woodhead is now part of Elsevier and that Maney (former publisher of the EFC series) is now part of Taylor & Francis Group. Now the EFC series are distributed on the e-platforms of Elsevier and of Taylor & Francis. New ideas for a green book are welcome.

Already since the last Fall Meeting, a special issue in "Corrosion Engineering, Science and Technology" is planned choosing the best papers from the Nuclear Corrosion sessions of EUROCORR 2014 and 2015. S. Ritter & D. Féron will act as guest editors here. The issue should be published towards end of 2016.

5. EFC WP4 EVENTS

5.1. Past events

- ✓ The 1st Nuclear Corrosion Summer School (NuCoSS-15) organized for the first time in Slovenia (Bled) by A. Legat, T. Kosec, B. Zajec and M. Leban (et al.) from the Slovenian National Building and Civil Engineering Institute (ZAG) with the support of S. Ritter (PSI), the University of Manchester (F. Scenini) and the CEA (F. Martin and D. Féron) has been a success (Annex 4). The feedback, based on the evaluation questionnaire filled by the participants, is very good. It is planned to organize a second edition in 3-4 years.

5.2. Future events

- ✓ The 6th International Workshop on "Prediction of Long Term Corrosion Behaviour in Nuclear Waste Systems (LongTermCor2016)" will be organized for the first time in Canada (May 09th-12th, 2016). These workshops (co-funded by D. Macdonald and D. Féron) have been organised from the beginning with the EFC WP4; WP4 gives agreement for this organization by NWMO (Canada).

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- ✓ D. Féron informed the Members that a new Fall School is organised by INSTN/Saclay (France) on "Modelling of corrosion", on October 26th-30th, 2015 with the same organisation than the previous Spring School: conferences in the morning, training on computer in the afternoon. The content will include thermodynamics, atomistic and molecular modelling of corrosion, passivity with the point defect model, flow accelerated corrosion, localised corrosion and cathodic protection. Around 20 participants are expected.

6. EFC WP4 WEBSITE

The WP 4 website is described and shown. It is updated frequently thanks to S. Ritter. The audience is encouraged to pass by from time to time and/or feel free to send events or any other useful information to [S. Ritter](#).

The address is: http://www.efcweb.org/Working_Parties-p-104085/WP_4.html.

A restricted area (for members only) has been added to the WP 4 website. The password provided only to members by S. Ritter on request.

D. Féron expressed his thanks to S. Ritter for taking care of and updating the WP4 website.

7. EUROCORRs

- ✓ EUROCORR 2016, "Advances in linking science and engineering", September 11th-15th, 2016, Montpellier, France
- ✓ EUROCORR 2017, "Corrosion control for safer living", September 03rd-07th, 2017, Praha, Czech Republic
- ✓ EUROCORR 2018, "Applied science with constant awareness", September 09th-13th, 2018, Cracow, Poland

8. MISSING ITEMS, CONCLUSION AND CLOSURE

No Spring Meeting is planned up to now. Next meeting will be in Montpellier, during EUROCORR'2016.

The meeting is closed as no other points are raised.

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Enclosure 1:

- ✓ Annex 1 Agenda of the Graz Fall Meeting



Fall meeting of the Nuclear Corrosion Working Party (EFC WP4)

Wednesday, 9 September 2015 (11h50-13h10)

Stadthalle Graz (Saal 3)
Graz, Austria

(Information on WP4 <http://www.efcweb.org/Working+Parties/WP+Nuclear+Corrosion.html>)

The proposed agenda is the following:

1. Opening of the meeting, apologies for absences and approval of the agenda
2. Approval of the minutes of the Pisa fall meeting
3. EFC WP4 internal matters
 - Members and "friends"
 - Election of the Vice-Chairman
 - WP4 Awards
4. EFC WP4 Publications
 - Books & special issues already published
 - Future publications
5. EFC WP4 past events
 - Summer school on "nuclear corrosion"
6. EFC WP4 future events
 - FAC 2016
 - LongTermCorr 2016
 - Others
7. EFC WP4 website
8. EUROCORR's
9. Missing items
10. Closure

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Enclosure 2:

- ✓ Annex 2 Best Oral and Poster Presentation Awards

A prize for the Best Oral Presentation of the Nuclear Corrosion Session has been awarded to: "In situ imaging of corrosion processes in nuclear fuel cladding", by Alice Laferrere (see photo), Robert Burrows (National Nuclear Laboratory, UK), Ron Clark, Carol Glover, Geraint Williams (University of Swansea, UK), Oliver Payton, Loren Picco (University of Bristol, UK).



A prize for the Best Poster Presentation of the Nuclear Corrosion Session has been awarded to: "High temperature oxidation of 9-12% Cr materials P91 and P92 in supercritical conditions (25 MPa, 600°C)", by Zuzana Skoumalová (see photo), Jaroslav Burda (ÚJV Řež a.s., CZ)



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Enclosure 3:

- ✓ Annex 3 Rules for the Henri Coriou Award

RULES FOR THE HONORARY MEDAL (HENRI CORIOU AWARD)

of

THE WORKING PARTY ON NUCLEAR CORROSION

of

THE EUROPEAN FEDERATION OF CORROSION

(Founded and presented by the Working Party on Nuclear Corrosion of the European Federation of Corrosion)

AWARD

1. The purpose of the Honorary Medal (~~Henri Coriou~~ Award, **founder and first chairman of the WP4 and first Head of the CEA corrosion department**) of the Working Party on Nuclear Corrosion of the European Federation of Corrosion (EFC WP4) is to recognise achievements by a scientist, an engineer, or group of scientists or engineers, in the application of corrosion science and corrosion engineering in the nuclear field. ~~The recipient(s) must be of a nationality(ies) corresponding to one, or more, of the Member Societies of the EFC(?).~~
2. The award consists of a medal and a diploma.
3. The Medal is sponsored by EFC WP4. The medal is **donated by CEA, "Corrosion Department"**. The diploma is donated by the chairman of the EFC WP4. ~~The sum of XXX€ will be provided from sponsors names.~~
4. The Honorary Medal of the Working Party on Nuclear Corrosion of the European Corrosion shall be awarded in principle every year preferably on the occasion of the EFC WP4 meeting or session during the EUROCORR.
6. On the occasion of the award ceremony the recipient of the Honorary Medal of the Working Party on Nuclear Corrosion of the EFC will give a lecture related to the work for which the medal was attributed.

DESIGNATION OF AWARD RECIPIENT

7. Serving members of the EFC Board of Administrators, the Chairman of the Science and Technology Advisory Committee (STAC), the Chairman, the Vice-Chairman and the Secretary of the Working Party on Nuclear Corrosion of the EFC are not eligible to be awarded the Honorary Medal of the Working Party on Nuclear Corrosion of the European Corrosion.
8. The recipient of the award is designated by a Jury presided by the Chairman of the EFC WP4. The Jury shall consist of the Chairman and the Vice-Chairman of EFC WP4 and ~~three~~**two** members nominated by EFC WP4 members. **At least, one member**

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~~of the Jury will be from CEA. The Jury members stay in office until a recipient has been designated and has accepted the award.~~

- ¶
9. → The Jury meets **preferably** in person, normally at the occasion of an EFC-WP4 meeting preceding the date of the award ceremony by at least 3 months. ¶
- ¶
10. → The decision of the Jury is by majority vote of the members present. The decision of the Jury is final. ~~The STAC is informed of its choice.~~ ¶
- ¶
11. → Any member **or friend** of EFC-WP4 shall make proposals to the Jury for recipients of the award. The WP4 Chairman or Secretary should ask EFC-WP4 members for proposals. These Proposals have to be addressed to the EFC-WP4 Chairman. Proposals must be received at least one month prior to the Jury meeting. They are forwarded to the Jury members at least one month ahead of the meeting of the Jury. In its selection of the award winner the Jury is **not** restricted to the proposals received. ¶
- ¶
12. → ~~If no suitable proposals have been received, the~~ Jury may decide not to attribute the medal in a given year. ¶
- ¶
- ¶
- ¶

Rules adopted at the Stockholm meeting (2011) and modified at Graz (2015) ¶

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Enclosure 4:

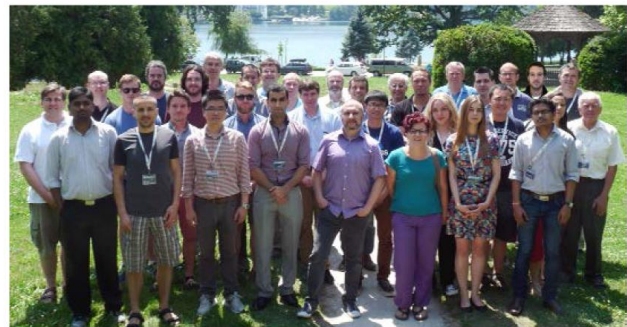
- ✓ Annex 4 NuCoSS-15 in "EFC Newsletter N°23" (September 2015)

Nuclear Corrosion Summer School – NuCoSS-15
EFC Event No 392

The first summer school on nuclear corrosion, **NuCoSS-15**, was held on July 5-10 in Bled, Slovenia. The school was hosted by the Slovenian National Building and Civil Engineering Institute (ZAG) and co-organised by WP 4, Paul Scherrer Institute (PSI), CEA-DEN, and University of Manchester. It combined a beautiful location with an extremely attractive programme packed with interesting lectures by 12 renowned experts. It was attended by (mostly young) scientists and engineers from all over the world (11 countries were represented) who not only received a comprehensive overview on the whole "nuclear corrosion story", but were also able to network with each other and with the lecturers during social and sporting activities.

Sincere thanks are expressed to the organisers (lead by B. Zajec (ZAG), S. Ritter (PSI), D. Féron &

F. Martin (CEA), and F. Scenini (University of Manchester)) and the supporters (AREVA GmbH, Cormet, EDF, IPS Elektroniklabor GmbH, Radioactive Waste Management Ltd., SCK-CEN, and Vattenfall) of the summer school as well as to all lecturers and attendees. Following on from this success, we hope to repeat this course in the near future.



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Enclosure 5:

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 - ✓ Annex 5 Slides presented by D. Féron*

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