

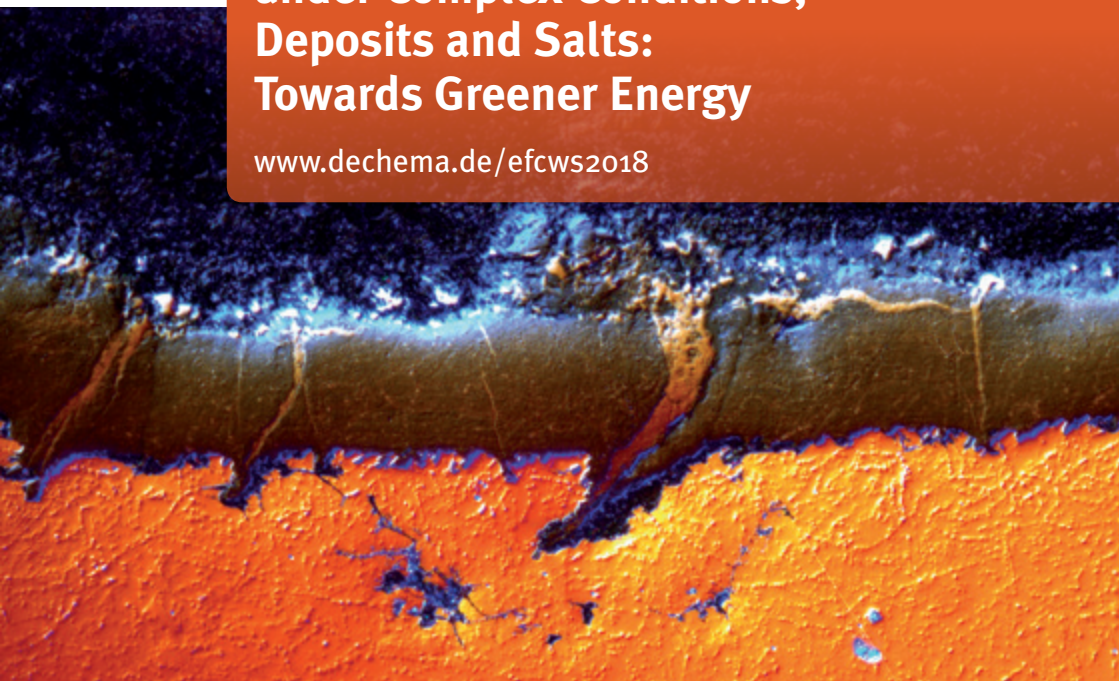
PROGRAMME

26 – 28 September 2018
DECHEMA-Haus · Frankfurt/Main

European Federation of Corrosion Workshop

**High Temperature Corrosion
under Complex Conditions,
Deposits and Salts:
Towards Greener Energy**

www.dechema.de/efcws2018



SOCIAL PROGRAMME / COMMITTEE / CONGRESS OFFICE

SOCIAL PROGRAMME

Wednesday, 26 September 2018

13:30 – 14:30

Poster Session

Wednesday, 26 September 2018

19:00 – 22:00

Conference Dinner

DECHEMA-Haus

Thursday, 27 September 2018

19:30 – 23:00

Conference Dinner

“Dauth-Schneider” in Frankfurt

The conference dinner with **Poster award presentation** on Thursday will take place at the traditional Frankfurter apple wine restaurant “**Dauth-Schneider**” in Frankfurt-Sachsenhausen.

Dauth-Schneider
Neuer Wall 5-7
60594 Frankfurt am Main

Enjoy a relaxed evening with colleagues and business partners. A regional and seasonal dinner with regional “apple wine”, wines, beers and softdrinks will be served.

How to get there: A description how to get there will be handed out onsite at the conference counter. Further information is available on the internet.



SCIENTIFIC COMMITTEE

PD Dr.-Ing. Mathias Galetz DECHEMA-Forschungsinstitut, Frankfurt am Main
Dr.-Ing. Dmitry Naumenko Forschungsinstitut Jülich GmbH, Jülich

CONGRESS OFFICE

Opening hours

Wednesday, 26 September 2018	08:00 – 19:00
Thursday, 27 September 2018	08:00 – 17:00
Friday, 28 September 2018	08:30 – 14:00

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ORGANIZER / VENUE

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PROGRAMME AT A GLANCE

Wednesday, 26. September 2018		Thursday, 27. September 2018	
08:30	Registration		Chlorination
09:15	WELCOME M. Galetz DECHEMA-Forschungsinstitut, Frankfurt/D	08:30	B.A. Pint Oak Ridge National Laboratory/USA
	Sulfidation	08:55	I. Popa University of Boirgogne,Dijon/F
09:30	B. Gleeson University of Pittsburgh/USA	09:20	M. Kaiser CheMin GmbH, Augsburg/D
09:55	K. Nützmann BAM, Berlin/D	09:45	J. Eklund Chalmers University of Technology, Gothenburg/S
10:20	S. Mori Cranfield University/UK	10:10	Y.C. Malede Technical University of Denmark/DK
10:45	Coffee Break	10:35	Coffee Break
11:15	C. Stephan-Scherb BAM, Berlin/D	11:05	S. Hayashi Hokkaido University, Sapporo/J
11:40	R. Pillai Forschungszentrum Jülich/D	11:30	M.A. Olivas-Ogaz Chalmers University of Technology, Gothenburg/S
12:05	T. König DECHEMA-Forschungsinstitut, Frankfurt/D	11:55	A. Talus Swerea KIMAB AB/S
12:30	Lunch Break	12:20	Lunch Break
13:30	POSTER SESSION	13:20	M. Montgomery Technical University of Denmark Lyngby/DK
	Molten Nitrites and Carbonates	13:45	M. Yasir Faurecia Emissions Control Technologies, Augsburg/D
14:30	F.J. Pérez Complutense University of Madrid/E Cranfield University /UK	14:10	S. Yoneda Hokkaido Research Organization/J
14:55	M. Spiegel Salzgitter Mannesmann Forschung GmbH, Duisburg/D	14:35	Coffee Break
15:20	H. Buscail Université Clermont Auvergne, Le Puy en Velay/F		Carburization / Metal Dusting
15:45	Coffee Break	15:05	J. Zurek Forschungszentrum Jülich/D
	Molten Nitrites, Carbonates and Oxides	15:30	C.G.M. Hermse TNO, Eindhoven/NL
16:15	R. Webster University of Virginia, Charlottesville/USA	15:55	A. Vernouillet CIRIMAT/F
16:40	E.J. Opila University of Virginia, Charlottesville/USA	16:20	C. Chun ExxonMobil, Annandale/USA
17:05	F. Pineda School of Civil Construction,Santiago/RCH		
17:30	P. Promdireka King Mongkut's University of Technology, Bankok/T		
19:00	DINNER BUFFET / POSTER SESSION (19:00-22:00)	19:30	POSTER AWARD PRESENTATION and DINNER at a traditional Apple Wine Restaurant (19:30-23:00)

PROGRAMME AT A GLANCE

Friday, 28. September 2018	
	Steam
09:30	F. Pedraza Université de La Rochelle/F
09:55	A. Stenzel DECHEMA-Forschungsinstitut, Frankfurt/D
	Subsurface Effects
10:20	A. Chyrkin Chalmers University of Technology, Gothenburg/S
10:45	S.P. Haqen University of Erlangen-Nürnberg/D
11:10	Coffee Break
	Trace Elements and Scale Formation
11:40	D.J. Young University of New South Wales, Sydney/AUS
12:05	T. Boll Karlsruher Institut für Technologie Karlsruhe/D
12:30	D. Jullian Hokkaido University/J
12:55	Closing Remarks D. Naumenko Forschungszentrum Jülich/D
13:05	Lunch and End of Workshop

LECTURE PROGRAMME

Wednesday, 26 September 2018

08:30 **Registration**09:15 **WELCOME**

M. Galetz, DECHEMA-Forschungsinstitut, Frankfurt/Main/D

Sulfidation and Hot Corrosion

*Chair: M. Schütze, DECHEMA-Forschungsinstitut, Frankfurt am Main/D*09:30 **New Insights into the Low-Temperature Hot Corrosion of a Current Generation Nickel-based Superalloys**

E. Kistler, B. Gleeson; University of Pittsburgh, Pittsburgh/ USA

09:55 **Orientation dependent oxide growth in an early stage of high temperature corrosion of Fe-Cr model alloys**

M. Menneken, F. Falk, K. Nützmänn, R.S. Neumann, C. Stephan-Scherb; Bundesanstalt für Materialforschung und Prüfung, Berlin/D

10:20 **Fireside corrosion of heat exchanger materials for advanced solid fuel fired power plants**

S. Mori, N.J. Simms, A.J. Pidcock, J.E. Oakey; Cranfield University/UK

10:45 **Coffee Break**

Sulfidation and Hot Corrosion

*Chair: B. Gleeson, University of Pittsburgh, Pittsburgh/USA*11:15 **μ -XANES study of the combined oxidation/ sulfidation of Fe-Cr model alloys**K. Nützmänn^{1,2}, A. Guilherme Buzanich¹, F. Falk¹, C. Stephan-Scherb^{1,2}
¹Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin/D, ²Freie Universität Berlin/D11:40 **First steps towards a coupled thermodynamic-kinetic approach to predict deposit induced degradation of aluminised Ni-base superalloys**R. Pillai¹, E. Yazhenskikh¹, Y. Wang¹, M. Frommherz², M. Müller¹, W.J. Quadackers^{1,1}
Forschungszentrum Jülich, Juelich/D; ² MTU Aero Engines, AG, München/D12:05 **Hot Corrosion Type II of Model Alloys for Boiler and Heat Exchanger Applications**

T. König, X. Montero, M. Galetz; DECHEMA-Forschungsinstitut, Frankfurt am Main/D

12:30 **Lunch Break**13:30 **POSTER SESSION**

LECTURE PROGRAMME

Wednesday, 26 September 2018

Molten Nitrites and Oxides

Chair: H. Murakami, National Institute for Materials Science, Tsukuba/J

- 14:30 **Corrosion evaluation of alloys in molten salt environments using electrochemical impedance spectroscopy for CSP applications**
V. Encinas-Sánchez, M.I. Lasanta, M.T. de Miguel, G. García-Martín, F.J. Pérez; Complutense University of Madrid, Madrid/E
- 14:55 **Alloying elements in austenitic steels – their effect on the corrosion in nitrate salts for solarthermic applications**
M. Spiegel¹, P. Schraven²; ¹Salzgitter Mannesmann Forschung GmbH, Duisburg/D; ²Mannesmann Stainless Tubes GmbH, Mülheim a.d.R./D
- 15:20 **Na₂CO₃ effect on AISI 330 Stainless Steels Oxidation at 900 °C**
H. Buscail¹, C. Issartel¹, F. Riffard¹, S. Perrier¹, F. Rabaste¹, O. Poble¹, C. Combe²; ¹Université Clermont Auvergne - LVEEM, Le Puy en Velay/F; ²CETIM, Saint-Etienne/F
- 15:45 **Coffee Break**

Molten Nitrites and Oxides

Chair: F.J. Perez, Complutense University of Madrid, Madrid/E

- 16:15 **CMAS resistance in environmental barrier coating materials ytterbium monotitanate and ytterbium monosilicate**
R. Webster, E.J. Opila; University of Virginia, Charlottesville/USA
- 16:40 **Calcium-Magnesium Alumino-Silicate (CMAS) Interactions with Environmental Barrier Coatings**
R. A. Golden¹, R. Webster¹, E.J. Opila¹, M. Dion², B. Sullivan²; ¹University of Virginia, Charlottesville, VA/ USA; ²Materials Research & Design, Wayne, PA/ USA
- 17:05 **Multi-technique evaluation of high temperature performance of steel exposed to molten salts**
F. Pineda^{1,2}, M. Walczak^{1,3}, M. Farías¹; ¹Department of Mechanical and Metallurgical Engineering, School of Engineering, ²School of Civil Construction, ³UC Energy Research Center, Pontificia Universidad Católica de Chile, Santiago/RCH
- 17:30 **Corrosion behaviour of stainless steel AISI430 coated by slurry aluminizing in molten nitrate salt**
P. Treewiriyakitja¹, S. Joy-A-Ka², P. Promdirek¹; ¹King Mongkut's University of Technology North Bangkok, Bangkok/T; ²Thailand Institute of Scientific and Technological, Pathumthani/T
- 19:00 **DINNER BUFFET / POSTER SESSION (19:00 – 22:00)**

LECTURE PROGRAMME

Thursday, 27 September 2018

Chlorination

Chair: M. Spiegel, Salzgitter Mannesmann Forschung GmbH, Duisburg/D

- 08:30 **Compatibility of Ni-Cr Alloys in Commercial Molten Chloride Salt**
B.A. Pint¹, S.S. Raiman, Oak Ridge National Laboratory, Oak Ridge, TN/USA
- 08:55 **Active corrosion phenomena in presence of solid NaCl deposits: case of steels and titanium alloys**
I. Popa¹, C. Ciszak^{1,2}, M. Berthaud¹, A. Tellier¹, A. Curnis¹, J.M. Brossard³, D. Monceau², S. Chevalier¹; ¹ICB, UMR 6303 CNRS - University of Bourgogne Franche-Comté, Dijon/F; ²CIRIMAT – ENSIACET, Toulouse/F; ³Veolia Research and Innovation, Limay/F
- 09:20 **Corrosion mechanisms in waste-to-energy plants**
M. Kaiser, CheMin GmbH, Augsburg/D
- 09:45 **Field exposure of FeCrAl model alloys in biomass- and waste-fired boiler at 600 °C – Influence of Cr and Si**
J. Eklund¹, M.D. Paz¹, B. Jönsson², J. Liske¹, J-E. Svensson¹, T. Jonsson¹; ¹Chalmers University of Technology, Gothenburg/S; ²Kanthal, Hallstahammar/S
- 10:10 **KCl-induced corrosion of Ni-based alloys containing 35-45 Wt. % Cr**
Y.C. Malede¹, J. Phother Simon², T. Jonsson², M. Montgomery¹, K.V. Dahl¹, J. Hald¹; ¹Technical University of Denmark/DK; ²Chalmers University of Technology, Göteborg/S
- 10:35 **Coffee Break**

Chlorination

Chair: Y. Kawahara, GET solutions Co. Ltd, Yokohama/J

- 11:05 **Effect of Mo on High-Temperature Corrosion of Ni-based Alloys in air+NaCl-KCl-CaCl₂ vapor mixture at 570°C**
S. Hayashi¹, H. Izzuddin¹, T. Kogin², E. Ishikawa³, M. Noguchi⁴, S. Yoneda⁵; ¹Hokkaido University, Sapporo/J; ²Dai-ichi High Frequency Co., Ltd., Kawasaki, Kanagawa/J; ³Ebara Environmental Plant Co., Ltd., Tokyo/J; ⁴Ebara Co., Kanagawa/J; ⁵Hokkaido Research Organization, Sapporo/J
- 11:30 **The influence of Ni-content on the propagation after breakaway oxidation of FeCr alloys in the presence of HCl(g) at 600°C**
M.A. Olivas-Ogaz, A. Persdotter, J. Liske, J-E. Svensson, T. Jonsson; Chalmers University of Technology, Gothenburg/S
- 11:55 **Corrosion of carbon steel in lead/potassium chloride salt mixture**
A. Talus¹, H. Kinnunen², S. Enestam², R. Norling³; ¹Swerea KIMAB AB/S; ²Valmet Technologies Oy/FIN; ³Swerea KIMAB AB/S

12:20 **Lunch Break**

LECTURE PROGRAMME

Thursday, 27 September 2018

Chlorination	
<i>Chair: S. Hayashi, Hokkaido University, Sapporo/J</i>	
13:20	Corrosion testing of austenitic steels in a biomass fired boiler M. Montgomery, K. Vinter Dahl; Technical University of Denmark, Lyngby/DK
13:45	NaCl and CaCl₂-Induced High Temperature Corrosion of Automotive Exhaust Components K.J. Vidic ¹ , G. Mori ¹ , M. Yasir ² , D. Knoll ² , S. Burger ² ; ¹ Montanuniversität Leoben/A; ² Faurecia Emissions Control Technologies, Augsburg/D
14:10	Effect of Mo on Erosion-Corrosion Resistance of Ni-Cr-Fe-Mo Alloys in Fluidized Bed Biomass Boiler Condition S. Yoneda ¹ , Y. Miyakoshi ¹ , T. Kogin ² , E. Ishikawa ³ , M. Noguchi ⁴ , S. Hayashi ⁵ ; ¹ Hokkaido Research Organization/J; ² Dai-ichi High Frequency Co., Ltd./J; ³ EBARA Environmental Plant Co., Ltd./J; ⁴ EBARA Corporation/ J.; ⁵ Hokkaido University/J
14:35	Coffee Break
Carburization/Metal Dusting	
<i>Chair: D.J. Young, University of New South Wales, Sydney/AUS</i>	
15:05	Behaviour of Metallic Materials in Simulated Service Environments of CO₂/H₂O Co-Electrolysis Systems for Power-to-X Application J. Zurek ¹ , N. Margaritis ² , D. Naumenko ¹ , N.H. Menzler ¹ , W.J. Quadackers ¹ ; ¹ Institute of Energy and Climate Research (IEK), Forschungszentrum Jülich/D; ² Engineering and Technology (ZEA-1), Forschungszentrum Jülich/D
15:30	The influence of alloy composition on metal dusting behaviour of nickel alloys H. Hattendorf ¹ , C.G.M. Hermse ² , R.M. IJzerman ² ; ¹ VDM Metals GmbH, Altena/D; ² TNO, Eindhoven/NL
15:55	Resistance to Metal Dusting of a Nickel-Based Alloy obtained by Additive Manufacturing A. Vernouillet ¹ , A. Rouaix-Vande Put ¹ , D. Monceau ¹ , S. Doublet ² ; ¹ CIRIMAT/F, ² Air Liquide/F
16:20	High Temperature Corrosion of 3D Printed Inconel 718 in Cyclic Carburizing and Oxidizing Environments C. Chun, M.S. Ide, A. Skoulidas; ExxonMobil, Annandale/USA
19:30	POSTER AWARD PRESENTATION and DINNER at a traditional Apple Wine Restaurant (19:30 – 23:00)

LECTURE PROGRAMME

Friday, 28 September 2018

Steam

Chair: B. Pint, Oak Ridge National Laboratory, Oak Ridge/USA

- 09:30 **Steam oxidation under 300 bar of aluminized and uncoated HR₃C**
 F. Pedraza¹, C. Boulesteix¹, A. Agüero², I. Baraibar²; ¹Université de La Rochelle. La Rochelle/F;
²Instituto Nacional de Técnica Aeroespacial, Madrid/E
- 09:55 **Behaviour of chromium oxide, manganese oxide, and manganese chromium spinel at high temperatures in environments containing water vapour**
 A. Stenzel, D. Fähsing, M. Schütze, M. Galetz; DECHEMA-Forschungsinstitut, Frankfurt am Main, Germany

Subsurface Effects

Chair: B. Pint, Oak Ridge National Laboratory, Oak Ridge/USA

- 10:20 **Oxidation driven dissolution of carbides in high-temperature alloys – thermodynamics, kinetics and effect of alloy chemistry**
 A. Chyrkin¹, R. Pillai², T. Galiullin², E. Wessel², D. Grüner², M. Halvarsson¹, W.J. Quadackers²;
¹Chalmers University of Technology, Gothenburg/ S; ²Forschungszentrum Jülich GmbH, Jülich/D
- 10:45 **Influence of γ' -Content and Surface Finish on the Oxidation Behavior of Single Crystalline Co-Base Superalloys at 900°C**
 S.P. Hagen, M. Weiser, S. Virtanen; University of Erlangen-Nuremberg, Erlangen/D

11:10 **Coffee Break**

Trace elements and scale formation

Chair: E. J. Opila, University of Virginia, Charlottesville/USA

- 11:40 **Segregation of Impurities to Grain Boundaries in Protective Oxide Scales**
 D.J. Young, J. Zhang; University of New South Wales, Sydney/AUS
- 12:05 **Outward diffusion through protective alumina scales on NiAl and FeAlCr**
 T. Boll¹, O. Bäcke², M. Heilmaier¹, K.A. Unocic³, B.A. Pint³, K. Stiller²; ¹Karlsruher Institut für Technologie (KIT), Eggenstein-Leopoldshafen/D; ²Chalmers University of Technology, Göteborg/S; ³Oak Ridge National Laboratory, Oak, Ridge TN/USA
- 12:30 **Combined effect of Nb and N in α -Ti-Al intermetallics at 800°C**
 D. Jullian¹, M. Takeyama², S. Hayashi³; ¹Hokkaido University/J; ²Tokyo Institute of Technology/J; ³Hokkaido University/J
- 12:55 **CLOSING REMARKS**
 D. Naumenko, Forschungszentrum Jülich GmbH, Jülich/D,
 M. Galetz, DECHEMA-Forschungsinstitut, Frankfurt am Main/D

13:05 **Lunch and End of Workshop**

Lecture Programme subject to change

POSTER PROGRAMME

Sulfidation and Hot Corrosion

- P1 **Influence of Type I Hot Corrosion on aluminide coating affected by microcracking on a low pressure turbine blade**
 L. Pyclik¹, L. Swadzba², B. Mendala², B. Witala², J. Tracz², R. Swadzba³, K. Marugi¹; ¹AvioAero, Bielsko-Biala/PL; ²Silesian University of Technology, Gliwice/PL; ³Institute for Ferrous Metallurgy, Gliwice/PL
- P2 **Type II Hot Corrosion of an Aluminized MCrAlY Coating**
 K.J. Meisner, V. Angelici Avincola, C. Miller, E. J. Opila; University of Virginia, Charlottesville/USA
- P3 **The role of alloy microstructure on the corrosion of steels in coal fired plants**
 M. Spiegel¹, M.M. Lange²; ¹Salzgitter Mannesmann Forschung GmbH, Duisburg/D, ²form. Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf/D
- P4 **Early oxidation and sulfidation of high temperature alloys: AN EDXRD in-situ study**
 F. Falk¹, M. Menneken¹, C. Stephan-Scherb²; ¹Federal Institute for Materials Research and Testing (BAM), Berlin/D; ²Freie Universität Berlin/D
- P5 **Salt induced type II hot corrosion behavior of aluminized Ni-base superalloys**
 Y. Wang¹, R. Pillai¹, E. Yazhenskikh¹, M. Müller¹, W.J. Quadackers¹, D. Naumenko¹, M. Frommherz²; ¹Forschungszentrum Jülich, IEK-2, Juelich/D; ²MTU Aero Engines AG, München/D
- P6 **STEM investigations of oxide scales on γ -TiAl produced by additive manufacturing and Si-aluminide coatings**
 R. Swadzba¹, L. Swadzba², B. Mendala², B. Witala², J. Tracz², L. Pyclik³, K. Marugi³; ¹Institute for Ferrous Metallurgy, Gliwice/PL; ²Silesian University of Technology, Gliwice/PL; ³AvioAero, Bielsko-Biala/PL

Chlorination

- P7 **Assessment and Control of Biomass Growth in Fuel Storage Tanks at the KNPC Phase II: Evaluation of the Effectiveness of Biocides in Controlling the Microorganisms Causing Problems in Oil Products Tanks**
 K. Mataqi, S. Jose, B. Mathew; Kuwait Institute for Scientific Research, Kuwait/KWT
- P8 **Development of coating technology for preventing high temperature corrosion on boiler tubes in thermal power plants**
 A. Ido, M. Kawase; Central Research Institute of Electric Power Industry (CRIEPI), Yokosuka/J
- P9 **Influence of NaOH and CaCl₂ deposit on high temperature oxidation of Fe-Cr-Si model alloy**
 C. Issartel¹, H. Buscaill¹, S. Mathieu²; ¹LVEEM - UCA, Le Puy en Velay/F; ²Université de Lorraine, Vandoeuvre-lès-Nancy/F
- P10 **Surficial Traces of Boiler Tube Materials on Erosion/Corrosion Damage Mechanisms**
 Y. Kawahara; GET solutions Co., Ltd./J

POSTER PROGRAMME

- P11 **Chloride Permeation of Oxide Scale on FeCr Alloy – Mechanism for corrosion from experimental and atomistic modelling**
V. Cantatore, M. A. O. Ogaz; Chalmers University of Technology, Göteborg/S
- P12 **Nitridation of grate in a biomass fired boiler**
M. Montgomery, K. V. Dahl, F. B. Kværndrup, J. Hald; University of Denmark, Lyngby/DK
- P13 **Innovative Diffusion Coatings for the Corrosion Protection of Ferritic-Martensitic Steels for Use in Biomass Co-Firing Plants**
T.M. Meißner¹, X. Montero¹, M. Rudolphi¹, E. Miller², J. Maier², M.C. Galetz¹; ¹DECHEMA-Forschungsinstitut, Frankfurt/D; ²IFK Universität Stuttgart/D
- P14 **Laboratory corrosion testing of coatings and substrates in contact with KCl/K₂SO₄ at 550°C under an oxy-fuel biomass combustion atmosphere**
A. Agüero¹, I. Baráibar¹, M. Gutiérrez², R. Muelas²; ¹Instituto Nacional de Técnica Aeroespacial, Torrejón de Ardoz/E; ²Ingeniería de Sistemas para la Defensa de España SA, Madrid/E

Molten Nitrites and Oxides

- P15 **Influence of atmosphere and impurities on molten nitrate salt corrosion towards T91 and austenitic stainless steel.**
A. Bonk¹, D. Rückle², T. Bauer³; ¹German Aerospace Center (DLR), Stuttgart/D; ²Universität Stuttgart, Stuttgart/D; ³German Aerospace Center (DLR), Cologne/D
- P16 **Gravimetric analysis and electrochemical impedance spectroscopy of T91 and austenitic stainless steels in nitrate molten salt – temperature dependence and influence of chloride content**
D. Rückle¹, S. Kaesche¹, H. Garrecht¹, A. Bonk², S. Virtanen³, B. Heine⁴; ¹Universität Stuttgart/D, ²German Aerospace Center (DLR), Stuttgart/D; ³Universität Erlangen-Nürnberg/D; ⁴Hochschule Aalen/D
- P17 **Protective effect of aluminium diffusion coating on P92 in molten solar salt**
J. Bermejo Sanz, M. Juez Lorenzo, S. Weick, V. Kolarik; Fraunhofer Institute for Chemical Technology ICT, Pfaffzettel
- P18 **The interactions of various rare earths with a CaO-Al₂O₃-SiO₂ melt**
F. Perrudin¹, C. Petitjean², M. Vilasiv; M.-H. Vidal-Sétif¹; ¹ONERA, Chatillon/F; ²IJL – UL (UMR 7198), Nancy/F
- P19 **Nitrogen transport through thermally grown chromia scales**
A. Solimani¹, M. Schütze¹, M. Galetz¹, A. Stark²; ¹DECHEMA-Forschungsinstitut, Frankfurt am Main/D; ²Helmholtz-Zentrum Geesthacht/D
- P20 **Functional Diffusion Coatings for the Receiver of Concentrated Solar Power Plants**
C. Oskay, T.M. Meißner, M.C. Galetz; DECHEMA-Forschungsinstitut, Frankfurt am Main/D

POSTER PROGRAMME

Scale formation and subsurface effects

- P21 **Corrosion Challenges in Deep Geothermal Energy Systems: The case of Switzerland**
A. Vallejo Vitaller, U. Angst, B. Elsener; ETH Zurich/CH
- P22 **Electrochemical behaviour of zirconia nanocoatings on NiTi alloy**
N.I. Azevedo Lopes; N.H. Jardim Freire; L Arruda Santos; V.T. Lopes Buono; Federal University of Minas Gerais, Belo Horizonte/BR
- P23 **Improving the High Temperature Oxidation Resistance of Nickel Alloys using the Florine Effect**
A. Donchev, A. Solimani, M. Galetz; DECHEMA-Forschungsinstitut, Frankfurt am Main/D
- P24 **High-temperature oxidation resistant coatings for TiAl-based alloys by electrochemical plating**
T. Calascibetta¹, W. Peters¹, K.M. Mangold¹, A. Donchev¹, M.C. Galetz¹, M. Schütze¹, M. Cavarroc², S. Knittel³, D. Monceau⁴; ¹DECHEMA-Forschungsinstitut, Frankfurt am Main/D; ²SAFRAN Tech, Magny-Les-Hameaux/F; ³SAFRAN Aircraft Engines, Evry/F; ⁴CIRIMAT-ENSIACET, University of Toulouse/F
- P25 **Effect of CoWO₄ on the diffusion kinetics of Cr in Ferritic Stainless Steel.**
L. Gan^{1,2}, H. Murakami^{1,2}, I. Saeki³, W.-L. Hsu³, C.-W. Tsai³, J.-W. Yeh³, A.-C. Yeh³; ¹National Institute for Materials Science (NIMS), Tsukuba/J; ²Waseda University, Tokyo/J; ³Muroran Institute of Technology, Muroran/J
- P26 **Microstructure and Oxidation Behavior of Pt and Pt-Ir Diffusion Coatings on Ni-based Superalloys**
D.C. Tue^{1,2}, T.-K. Tsao¹, M. Hayakawa¹, A. Ishida¹, H. Murakami^{1,3}, L.T. Hong Lien²; ¹National Institute for Materials Science (NIMS), Tsukuba/J; ²Institute of Materials Science, Hanoi/VNM; ³Waseda University, Tokyo/J
- P27 **Modelling Microstructural and Chemical Degradation of Ferritic Stainless Steels for SOFC Interconnects**
M. Oum, R. Steinberger-Wilckens, University of Birmingham/UK
- P28 **Microstructural Investigation of Precipitation Strengthened Cr-Based Alloys at 1050°C and 1350°C for 100 h**
P. Pfizenmaier¹, A.S. Ulrich², U. Glatzel¹, M.C. Galetz²; ¹University Bayreuth/D; ²DECHEMA-Forschungsinstitut, Frankfurt a. M./D
- P29 **High temperature oxidation and erosion of candidate materials for particle receivers in concentrated solar power systems**
T. Galiullin¹, B. Gobereit², D. Naumenko¹, R. Buck², L. Amsbeck², W.J. Quadackers¹; ¹Forschungszentrum Jülich GmbH, Jülich/D; ²German Aerospace Center, Stuttgart/D
- P30 **Influence of base alloy composition on microstructural evolution of aluminide coatings on Ni-base superalloys during manufacturing and high temperature exposures**
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F. Faziali Pour, M. Niki Nushari; R&D Department of Iran Radiator Co. Ltd, Rasht/IR
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M. Weiser¹, S.P. Hagen¹, M.C. Galetz², H.-E. Zschau², C.H. Zenk¹, S. Virtanen¹; ¹ Universität Erlangen-Nürnberg (FAU), Erlangen/D; ² DECHEMA-Forschungsinstitut, Frankfurt am Main/D
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M. Naderi¹, K. Shirvani², M. Farvizi¹, M.R. Rahimpour¹, S.V. Miraboutalebi²; ¹ Material & Energy Research Center (MERC), Karaj/IR; Iranian Research Organization for Science and Technology (IROST), Tehran/IR
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L. Mengis, C. Grimme, M.C. Galetz, DECHEMA-Forschungsinstitut, Frankfurt am Main/D
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H. Murakami^{1,2}, T.-K. Tsao^{1,3}, W.-L. Hsu³, C.-W. Tsai³, J.-W. Yeh³, A.-C. Yeh³; ¹ National Institute for Materials Science (NIMS), Tsukuba/J; ² Waseda University, Tokyo/J; ³ National Tsing Hua University, Hsinchu/TWN

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S.I. Castañeda¹, F.J. Pérez¹, I. Ciarolo²; ¹ Universidad Complutense de Madrid, Madrid/E; ² Iñaki Goenaga, Eibar-Gipuzkoa/E
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A. Illana¹, S. Mato¹, F.J. Pérez¹, M. Gutiérrez², A. Agüero²; ¹ Universidad Complutense de Madrid, Madrid/E; ² Instituto Nacional de Técnica Aeroespacial “Esteban Terradas”, Torrejón de Ardoz/E
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K. Wollgarten¹, T. Galiullin¹, W. Nowak¹, W.J. Quadackers¹, D. Naumenko¹; ¹ Forschungszentrum Jülich, (IEK-2), Jülich/D

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B.A. Pint, J. R. Keiser; Oak Ridge National Laboratory, Oak Ridge/USA

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