



DECHEMA

Gesellschaft für Chemische Technik
und Biotechnologie e.V.

PROGRAMME

25 – 29 September 2023

Hotel Zur Schönen Aussicht · Marktheidenfeld · Germany

Workshop

High Temperature Corrosion and Oxidation 2023

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100 um

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EFC
EUROPEAN FEDERATION OF CORROSION

EFC Event-Number 493

GENERAL INFORMATION

VENUE

Hotel Zur Schönen Aussicht
Brückenstraße 8
97828 Marktheidenfeld

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As of 15 June 2023

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CONTENTS

| | |
|------------------------------|----|
| LECTURE PROGRAMME | 4 |
| Monday, 25 September 2023 | 4 |
| Tuesday, 26 September 2023 | 4 |
| Wednesday, 27 September 2023 | 6 |
| Thursday, 28 September 2023 | 7 |
| Friday, 29 September 2023 | 9 |
| POSTER | 10 |

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PROGRAMME

Monday, 25 September 2023

- 17:00 Registration
- 18:00 **WELCOME RECEPTION** (18:00 – 19:30)
- 19:30 **EVENING LECTURE**
 20:15 **Enhanced high-temperature oxidation of additive manufactured Ni-base alloy IN625: microstructure or chemical composition?**
 A. Chyrkin¹; K. Gunduz²; I. Fedorova¹; W. Nowak³; M. Sattari¹; M. Halvarsson¹; J. Froitzheim¹; K. Stiller¹; ¹ Chalmers University of Technology, Gothenburg/S; ² Gebze Technical University, Gebze/TR; ³ Rzeszow University of Technology, Rzeszow/PL

Tuesday, 26 September 2023

- 08:00 Registration
- Room: Spessart 3
- 09:00 **OPENING & WELCOME**
 Dmitry Naumenko, Forschungszentrum Jülich/D
- “THE HEAT IS ON!”: HIGH TEMPERATURE OXIDATION**
- 09:05 **KEYNOTE 1**
Effect of High-Temperature Oxidation-Induced Features on Fatigue Performance of Alloy 625 Fabricated by Different Manufacturing Processes
 B. Gleeson¹; G. de Leon Nope¹; G. Wang¹; ¹ University of Pittsburgh, Pittsburgh/USA
- 09:35 **Oxidation of Additive Manufactured 699XA Ni-based Alloy under different Atmospheres**
 F. Pedraza¹; A. Duval¹; G. Boissonnet¹; G. Bonnet¹; ¹ Université de La Rochelle/F
- 10:00 **Early stages of high temperature oxidation of 253MA alloy at 900 °C**
 A. Olivas¹; K. Simonov¹; Z. He¹; A. Zakharov²; J. Nockert³; M. Lundberg⁴; M. Oum⁵;
¹ Swerim AB, Kista/S; ² MAX IV Laboratory, Lund University, Lund/S; ³ Kanthal AB, Hallsthammar/S; ⁴ Alleima AB, Sandviken/S; ⁵ Outokumpu Stainless aB, Avesta/S
- 10:25 **Investigation of the influence of microstructure on the high-temperature corrosion behaviour of 310N austenitic stainless steel in the air atmosphere**
 S. Shayan¹; N. Babaei¹; K. Jahns²; U. Krupp¹; ¹ RWTH Aachen University, Aachen/D; ² Osnabrück University of Applied Sciences, Osnabrück/D
- 10:50 Coffee Break

PROGRAMME

Tuesday, 26 September 2023

- “DON'T LET ME DOWN”: SCALE FORMATION AND COATINGS I**
- 11:20 **KEYNOTE 2**
Recent Advances in Understanding Oxidation of Refractory Alloys
 E. Opila¹; C. Brandenburg¹; B. Galicia¹; ¹ University of Virginia, Charlottesville, VA/USA
- 11:50 **Potential of algorithms from machine learning to tailor aluminide diffusion coatings**
 M. Juez Lorenzo¹; V. Kolarik¹; R. Praksova²; P. Praks²; ¹ Fraunhofer ICT, Pfinztal/D; ² Technical University of Ostrava VSB, Ostrava/CZ
- 12:15 **Influence of advanced microstructural parameters on thermal shock resistance of Thermal Barrier Coatings**
 G. Pedrizzetti¹; V. Genova¹; E. Scrinzi²; A. Bandini²; L. Paglia¹; L. Baiamonte¹; M. Conti¹; F. Marra¹; G. Pulci¹; ¹ Sapienza University of Rome, Rome/I; ² Nuovo Pignone Tecnologie Srl, Baker Hughes, Florence/I
- 12:40 Lunch Break
- Room: Spessart 3
- “DON'T LET ME DOWN”: SCALE FORMATION AND COATINGS II**
- 13:40 **KEYNOTE 3**
Non-protective α -Al₂O₃ on aluminide coatings exposed to biomass corrosion
 A. Agüero Bruna¹; P. Audigié¹; G. Marcos¹; J. Pascual¹; S. Rodríguez¹; V. Ssentenza²; T. Jonsson²; ¹ INTA, Torrejón de Ardoz/E; ² Chalmers University of Technology, Göteborg/S
- 14:10 **Oxidation of Ni and Ni-CeO₂ modified aluminide coatings on René N₅ nickel-based superalloy**
 T. Kepa¹; F. Pedraza¹; G. Bonnet¹; ¹ LaSIE - La Rochelle Université, La Rochelle/F
- 14:35 **High Temperature Oxidation of TiAlCrYSi Bond Coatings Obtained Using CHC-PVD Method on γ -TiAl**
 R. Swadzba¹; B. Mendala²; L. Swadzba²; U. Schulz³; N. Laska³; P. Bauer³; ¹ Lukasiewicz Research Network - Uppersilesian Institute of Technology, Gliwice/PL; ² Silesian University of Technology, Katowice/PL; ³ German Aerospace Center (DLR), Cologne/D
- 15:00 Coffee Break
- “RING OF FIRE”: SUPERCRITICAL CO₂**
- 15:30 **KEYNOTE 4**
Evaluation of Coated Steels in Supercritical CO₂
 B. Pint¹; R. Pillai¹; M. Lance¹; J. Keiser¹; ¹ Oak Ridge National Laboratory, Oak Ridge, TN/USA
- 16:00 **In-situ surface observation of Fe-9Cr alloy during the oxidation in dry CO₂ at 923 K**
 M. Niimi¹; M. Ueda¹; ¹ Tokyo Institute of Technology, Tokyo/J
- 16:25 **High temperature oxidation and erosion behaviour of candidate materials for concentrated solar power plants with ceramic particles and CO₂ heat-transfer systems**
 F. Lebendig¹; D. Naumenko¹; ¹ Forschungszentrum Jülich, Jülich/D
- 16:50 **Happy Hour Poster Session**

PROGRAMME

Wednesday, 27 September 2023

Room: Spessart 3

“HUMIDITY IS RISING”: STEELS IN H₂O

- 09:00 **KEYNOTE 5**
Sulphur diffusion through a growing chromia scale and effects of water vapour
 C. Sha¹; L. Yang²; J. Cairney²; J. Zhang¹; D. Young; ¹ University of New South Wales, Sydney/AUS; ² University of Sydney, Sydney/AUS
- 09:30 **High Temperature performance of coated and non-coated ferritic stainless steel interconnects for SOEC application**
 F. Rouillard¹; M. Bouvier¹; A. Casadebaigt¹; S. Bosonnet¹; F. Miserque¹; T. Dejob¹; K. Couturier²; ¹ CEA Paris-Saclay, Gif sur Yvette/F; ² CEA Paris-Saclay, Grenoble/F
- 09:55 **Stages of H-induced breakaway oxidation of ferritic model steels in dual-atmosphere conditions**
M. Weiser¹; P. Felfer; ¹ Friedrich-Alexander Universität Erlangen-Nürnberg (FAU), Erlangen/D
- 10:20 **Factors affecting breakaway oxidation of Fe-Cr alloys**
D. Naumenko¹; J. Zurek; ¹ Forschungszentrum Jülich GmbH, Jülich/D
- 10:45 **Coffee Break**

“HUMIDITY IS RISING”: NI AND OTHER ALLOYS IN H₂O

- 11:15 **KEYNOTE 6**
The effect of humidity on the initial oxidation of the refractory high-entropy superalloy AlMoo.5NbTao.5TiZr
J. Lehmusto¹; P. Suárez Ocaño²; A. Manzoni²; R. Hesse²; A. Kranzmann²; L. Agudo Jácome²; ¹ Abo Akademi University, Turku/FIN; ² Federal Institute for Materials Research and Testing, Berlin/D
- 11:45 **Effects of Al, Fe or Si alloying on Ni-20Cr corrosion in water vapour at 650°C**
 Z. Zhang¹; J. Zhang¹; D. Young; ¹ UNSW, Sydney/AUS
- 12:10 **Oxidation Behavior under Hydrogen Gas Turbine Condition Controlled by an Electrochemical Oxygen Supply Device**
M. Fukumoto¹; H. Torii¹; S. Hara¹; H. Takahashi; ¹ Akita University, Akita/J
- 12:35 **Simulation of Internal Corrosion of Ni-Cr-Al alloys by Means of the Cellular Automata Approach**
A. Seregin; ¹ RWTH Aachen University, Aachen/D
- 13:00 **Lunch Break**
- 14:00 **Free Time – Optional activities**

PROGRAMME

Thursday, 28 September 2023

Room: Spessart 3

“WALKING ON SUNSHINE”: NITRATES

- 09:00 **KEYNOTE 7**
Corrosion mechanisms in molten nitrates and mitigation strategies for concentrated solar power applications
C. Oskay¹; T. Meißner¹; A. Solimani¹; F. Sutter²; A. Bonk³; T. Diamantino⁴; B. Grégoire⁵; M. Galetz¹; ¹ DECHEMA-Forschungsinstitut, Frankfurt am Main/D; ² German Aerospace Center (DLR), Almería/E; ³ German Aerospace Center (DLR), Stuttgart/D; ⁴ The National Laboratory of Energy and Geology (LNEG), Lisbon/P; ⁵ University of Birmingham/UK
- 09:30 **Corrosion in solar salt under thermo-cyclic conditions**
M. Binder¹; D. Niedermeier¹; C. Schuhbauer; ¹ MAN Energy Solutions SE, Deggendorf/D
- 09:55 **Effect of gas management on the corrosion control of austenitic steels in Solar Salt at 620°C up to 5.000h**
A. Bonk¹; S. Kumar¹; A. Hanke¹; M. Braun¹; T. Bauer²; ¹ German Aerospace Center (DLR), Stuttgart/D; ² German Aerospace Center (DLR), Köln/D
- 10:20 **Influence of Solar Salt Chemistry on Corrosion Evolution of SS316L**
S. Kumar¹; S. Swaminathan²; A. Kranzmann²; A. Bonk¹; T. Bauer³; ¹ German Aerospace Center (DLR), Stuttgart/D; ² Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin/D; ³ German Aerospace Center (DLR), Köln/D
- 10:45 **Coffee Break**

“WALKING ON SUNSHINE”: CARBONATES & CHLORIDES

- 11:15 **KEYNOTE 8**
High-temperature corrosion on nickel-based alloy in molten carbonates for concentrated solar power applications
 M. Lambrecht¹; G. García Martín¹; M. De Miguel¹; M. Lasanta¹; F. Pérez; ¹ Surface Engineering and Nanostructured Materials Research Group, Complutense University of Madrid/E
- 11:45 **Corrosion mechanisms of a Ni-based alloy in molten chlorides at high-temperatures for concentrated solar power applications**
M. Lambrecht¹; G. García Martín¹; M. De Miguel¹; M. Lasanta¹; F. Pérez; ¹ Surface Engineering and Nanostructured Materials Research Group, Complutense University of Madrid/E
- 12:10 **Stability of austenitic stainless steels and nickel alloys in ternary molten carbonate**
M. Spiegel¹; P. Schraven²; ¹ Salzgitter Mannesmann Forschung GmbH, Duisburg/D; ² Salzgitter Mannesmann Stainless Tubes, Mülheim/D
- 12:35 **Lunch Break**
- 13:30 **Networking Time**
- 15:30 **Coffee**

PROGRAMME

Thursday, 28 September 2023

Room: Spessart 3

“LIGHT IT UP, UP, UP”: BIOMASS, CHLORINATION

- 16:00 **KEYNOTE 9**
High-Temperature Erosion-Corrosion Behavior of Ni-Fe Alloys in Fluidized Bed Biomass Boiler Condition
 S. Yoneda¹; R. Tamura¹; T. Kogin²; E. Ishikawa³; S. Murasue⁴; S. Hayashi; ¹ Hokkaido University, Hokkaido/J; ² Dai-ichi High Frequency Co., Ltd., Kanagawa/J; ³ EBARA Environmental Plant Co., Ltd., Tokyo/J; ⁴ EBARA Corporation, Tokyo/J
- 16:30 **Online corrosion monitoring in waste co-fired power plants**
 D. Hülsbruch¹; A. Marx¹; J. Ströhle¹; B. Epple; ¹ Technical University of Darmstadt/D
- 16:55 **Effect of KCl on high temperature corrosion of low-alloyed steel under low oxygen partial pressure**
 A. Moya Núñez¹; R. Norling; ¹ RISE Research Institutes of Sweden, Stockholm/S
- 17:20 **KEYNOTE 10**
Breakdown of a Continuous Cr₂O₃ Scale by a Reaction with Alkaline Salt Vapors
 S. Hayashi; ¹ Hokkaido University, Sapporo, Hokkaido/J
- 17:50 **POSTER PRIZE PRESENTATION** (17:50 – 18:00)
- 19:00 **Conference Dinner at the Hotel Zur Schönen Aussicht** (19:00 – 23:00)

PROGRAMME

Friday, 29 September 2023

Room: Spessart 3

“SMOKE ON THE WATER”: SULFIDATION

- 09:30 **On the SO₃ induced type II hot corrosion mechanism**
 S. Mathieu¹; R. Malacarne²; L. Aranda¹; D. Diomande¹; C. Desgranges²; S. Knittel³; M. Vilasi¹; ¹ Université de Lorraine, Nancy/F; ² CEA Paris-Saclay, Gif sur Yvette/F; ³ Safran Aircraft Engines, Evry/F
- 10:00 **Effect of CO on the corrosion behavior of 304 stainless steel in wet CO₂ gas at 710°C**
 F. Cao¹; ¹ ExxonMobil Technology and Engineering Company, Annandale, New Jersey/USA
- 10:25 **Coffee Break**
- “SMOKE ON THE WATER”: SULFIDATION
- 10:55 **A Thermodynamic Approach to Evaluating the Impact of Contaminants on Flux Deposition in Gas Turbines**
 S. Mori¹; M. Mendil²; N. Simms¹; J. Wells³; N. Chapman³; R. Wells³; J. Sumner¹; ¹ Cranfield University, Cranfield/UK; ² Technip Energies, France/F; ³ Siemens Energy, Lincoln/UK
- 11:20 **Pack Cementation and Hot Corrosion of Co-based γ/γ' superalloys**
 T. König¹; S. Hagen²; S. Virtanen²; M. Galetz; ¹ DECHEMA-Forschungsinstitut, Frankfurt am Main/D; ² Friedrich-Alexander Universität Erlangen-Nürnberg, Erlangen/D
- 11:45 **Electrochemical study of Ni in sulfate (Na₂SO₄-MgSO₄): Effect of aluminium and chromium addition**
 D. Diomande¹; P. Panteix¹; C. Petitjean¹; S. Mathieu¹; M. Vilasi¹; ¹ Université de Lorraine, CNRS, Institut Jean Lamour, Nancy/F
- 12:10 **Closing Remarks**
 Mathias Galetz, DECHEMA-Forschungsinstitut, Frankfurt am Main/D

POSTER

- P 01 **Which oxide phase forms first? – An in-situ Synchrotron GI-XRD study on Co-Cr-Fe-Mn-Ni-Si alloys and 316L**
J. Apell¹; H. Stöcker²; R. Wonneberger¹; A. Undisz¹; ¹ Chemnitz University of Technology, Chemnitz/D; ² TU Bergakademie Freiberg, Freiberg/D
- P 02 **Modelling internal oxidation in Fe-Cr alloys**
D. Vakhrameev¹; J. Zurek¹; D. Naumenko¹; ¹ Forschungszentrum Jülich, Jülich/D
- P 03 **Oxidation behaviour of AM1 Ni-based single crystal superalloy with varying homogenization heat treatments**
A. Martin¹; J. Cormier²; E. DROUELLE³; J. RAME⁴; F. Pedraza⁵; ¹ Safran Aircraft Engines/ LaSIE - La Rochelle Université/Institut Pprime, Chasseneuil-du-Poitou/F; ² France/Institut PPrime, Chasseneuil-du-Poitou/F; ³ Safran Aircraft Engines, Gennevilliers/F; ⁴ NAAREA, Paris/F; ⁵ LaSIE - La Rochelle Université, La Rochelle/F
- P 04 **Early-stage Oxidation of a Medium Manganese Steel in Air**
R. Wonneberger¹; J. Apell²; K. Freiberg²; A. Undisz¹; ¹ Chemnitz University of Technology, Chemnitz/D; ² Friedrich-Schiller University Jena, Jena/D
- P 05 **Influence of oxidizing atmosphere on high temperature oxidation of additively manufactured Rene 65**
M. Huguët¹; ¹ LaSIE - La Rochelle Université, La Rochelle/F
- P 06 **Type-I hot corrosion behavior of slurry aluminide coating modified by chromizing and chromium plating processes**
K. Shirvani¹; S. Miraboutalebi¹; A. Kafrou¹; M. Farvizi²; ¹ IROST, Tehran/IR; ² Merc, Karaj/IR
- P 07 **Silicon Effect on Type II Hot Corrosion Behavior of Pt-Modified Aluminide Coatings**
K. Shirvani¹; S. Azarmehr¹; A. Solimani²; X. Monero²; M. Galetz²; ¹ IROST, Tehran/IR; ² DECHEMA, Frankfurt/D
- P 08 **Pre-oxidation of 699XA alloy powders in fluidized bed reactor for additive manufacturing**
A. Duval¹; ¹ LA ROCHELLE UNIVERSITÉ - LASIE UMR 7356 CNRS, La Rochelle/F
- P 09 **Thermo-physical properties of coated and uncoated steels exposed to hot corrosion in biomass environment**
G. Boissonnet¹; F. Chiavaroli²; V. Genova²; F. Marra²; F. Pedraza³; ¹ LA ROCHELLE UNIVERSITÉ - LASIE UMR 7356 CNRS, La Rochelle Cedex 1/F; ² Università di Roma, La Sapienza, Rome/I; ³ LA ROCHELLE UNIVERSITÉ - LASIE UMR 7356 CNRS, La Rochelle/F
- P 10 **Corrosion of materials in molten chloride from screening to understanding**
R. Malacarne¹; E. Schmucker¹; A. Chmakoff²; L. Pellicot¹; L. Martinelli¹; N. Gruet¹; S. Delpech²; J. Serp³; ¹ CEA Paris-Saclay, Gif-sur-Yvette/F; ² CNRS/IN2P3, IJCLab, Orsay/F; ³ CEA Marcoule, Bagnols-sur-Cèze/F

POSTER

- P 11 **Synthesis and characterization of nano-additives for concentrated solar power plants**
F. Pineda¹; E. Urzúa²; C. Martínez³; L. Troncoso⁴; ¹ Universidad Mayor, Santiago/RCH; ² Universidad de Chile, Santiago/RCH; ³ Universidad de la Frontera, Temuco/RCH; ⁴ Universidad Austral, Valdivia/RCH
- P 12 **High-Temperature Corrosion Behavior of Martensitic Stainless Steel in Water Vapor Containing HCl with/without Salt Deposit**
T. Sakka¹; S. Hayashi¹; S. Yoneda¹; R. Yamamoto²; ¹ Hokkaido University, Hokkaido, Sapporo/J; ² EBARA Corporation, Kanagawa/J
- P 13 **Synthesis of nickel coatings against high temperature degradation of steel SOEC interconnects**
L. Boccaccini¹; F. Rouillard²; F. Pedraza¹; ¹ LaSIE UMR 7356 - La Rochelle Université, La Rochelle/F; ² Université Paris-Saclay, CEA, Service de recherche en Corrosion et Comportement des Matériaux, Gif-sur-Yvette/F
- P 14 **Degradation of a Pt-containing Ni-based superalloy**
L. Hunault¹; S. Mathieu²; J. Cormier³; F. Pedraza⁴; ¹ Laboratoire des sciences de l'ingénieur pour l'Environnement/Université de la Rochelle, la rochelle/F; ² France /Institut Jean Lamour, Nancy/F; ³ France/Institut PPrime, Chasseneuil/F; ⁴ Laboratoire des sciences de l'ingénieur pour l'Environnement/Université de la Rochelle, La Rochelle/F
- P 15 **Aluminide coatings obtained via electroless plating for corrosion protection in concentrated solar power plants**
V. Genova¹; M. Conti¹; G. Pedrizzetti¹; L. Paglia¹; F. Marra¹; G. Pulci¹; ¹ „Sapienza“ University of Rome/I
- P 16 **Effects of Nb and Ti on Cr₂O₃ Scale Formation on Austenitic Steels**
R. Tatsushima¹; S. Hayashi¹; S. Yoneda¹; ¹ Hokkaido University, Hokkaido/J
- P 17 **Low-Cost Silicon-Rich Aluminide Coatings for Oxidation Protection of Titanium Based-Alloys**
C. Lorente¹; P. Audigé¹; A. Agüero Bruna¹; ¹ Instituto Nacional de Técnica Aeroespacial INTA, Torrejón de Ardoz/E
- P 18 **Effects of Al addition on the oxidation behavior of Ni-Fe-Cr-Nb alloys at 800°C in Air**
Y. Kuo¹; S. Hayashi²; K. Kakehi³; M. Nanko¹; ¹ Nagaoka University of Technology, Nagaoka/J; ² Hokkaido University, Hokkaido/J; ³ Tokyo Metropolitan University, Tokyo/J
- P 19 **The Role of High Water Vapor Conditions in Energy Conversion**
M. Rudolphi¹; C. Schlereth¹; D. Kniep¹; B. Öztürk¹; M. Galetz¹; ¹ DECHEMA-Forschungsinstitut, Frankfurt am Main/D
- P 20 **High-temperature oxidation of porous FeCr alloys and its possible mitigation by pre-oxidation or atomic layer deposition of thin alumina layers**
S. Molin¹; D. Koszelow¹; ¹ Gdańsk University of Technology, Gdańsk/PL

POSTER

- P 21 **Long-term oxidation (10000h at 750°C) of Crofer 22 APU coated with Fe-stabilized MnCu-oxide spinel for potential solid oxide cell interconnect**
S. Molin¹; J. Ignaczak¹; ¹ Gdańsk University of Technology, Gdańsk/PL
- P 22 **Photoelectron microscopy study on high-temperature in-situ oxidation of Hybrid alloy at 600 °C**
A. Olivas¹; K. Simonov¹; Z. He¹; A. Zakharov²; M. Oum³; M. Lundberg⁴; S. Ooi⁵; ¹ Swerim AB, Kista/S; ² MAX IV Laboratory, Lund/S; ³ Outokumpu Stainless aB, Avesta/S; ⁴ Alleima AB, Sandviken/S; ⁵ Ovako AB, Hofors/S
- P 23 **New slurry coating developments for resisting molten carbonate corrosion at 650°C and 700°C**
P. Audigé¹; S. Rodríguez¹; A. Agüero Bruna¹; C. Josse²; S. Gouy²; ¹ INTA, Torrejón de Ardoz/E; ² Centre de Micro Caractérisation Raimond Castaing, Toulouse/F
- P 24 **Oxidation resistance of B-rich coatings on a NbTiZr alloy**
L. Mariano Ferreira¹; C. Oskay²; E. White²; M. Galetz²; R. Cardoso Perito³; A. Clímaco Monteiro D'Oliveira¹; ¹ Federal University of Paraná, Curitiba/BR; ² DECHEMA-Forschungsinstitut, Frankfurt am Main/D; ³ Federal University of Santa Catarina, Florianópolis/BR
- P 25 **Effect of Al and Mo on the microstructure and high temperature oxidation behavior of high entropy stainless steels**
J. Gabriel da Cruz Passos¹; C. Oskay²; E. White²; C. Della Rovere³; R. da Silva³; J. Ribeiro Martins⁴; M. Gonçalves de Miranda Salustre⁴; A. Mariano de Sousa Malafaia⁵; M. Falcao de Oliveira¹; ¹ University of São Paulo, São Carlos/BR; ² DECHEMA-Forschungsinstitut, Frankfurt am Main/D; ³ Federal University of São Carlos, São Carlos/BR; ⁴ Global R&D Brazil – ArcelorMittal, Serra/BR; ⁵ Federal University of São João del-Rei, São João del Rei/BR
- P 26 **Material for high temperature application in liquid metals**
A. Heinzl¹; A. Purwitasari²; R. Fetzner²; F. Lang²; A. Weisenburger²; G. Müller²; ¹ Karlsruher Institut für Technologie, Eggenstein-Leopoldshafen/D; ² Karlsruher Institut für Technologie, Eggenstein-Leopoldshafen/D
- P 27 **Increasing cycle oxidation resistance of PtAl coating at 1100 °C by replacing Pt partially with Zr**
B. Yin¹; M. Liu¹; T. Hu¹; ¹ Institute of New Materials, Guangdong Academy of Sciences, Guangzhou/CN
- P 28 **Improvement strategy of high temperature oxidation resistance of Pt-aluminide bond coating modified by Re diffusion barrier at 1200 °C**
J. Mao¹; C. Deng¹; J. Liang¹; ¹ Institute of New Materials, Guangdong Academy of Sciences, Guangzhou/CN

POSTER

- P 29 **Multiscale study of high-temperature oxidation in Al₂O₃-Nb-based composites**
M. Eusterholz¹; T. Boll¹; V. Ott¹; M. Stüber¹; Y. Lu¹; J. Gebauer¹; A. Kauffmann¹; M. Heilmaier¹; ¹ Karlsruher Institut für Technologie, Karlsruhe/D
- P 30 **Comparison of residual stresses in alumina scales formed on ODS-Fe₂₀Cr₅AlY₂O₃-containing alloy during isothermal and thermal cycling exposures at 1100 °C**
J. Jedliński¹; ¹ AGH University of Kraków, Kraków/PL
- P 31 **Metal Dusting: Carbon Ingress & Mitigation Strategies**
C. Schlereth¹; T. König¹; E. White¹; M. Weiser²; J. Roth³; K. Jahns³; U. Krupp⁴; ¹ DECHEMA Forschungsinstitut, Frankfurt/D; ² University of Erlangen, Erlangen/D; ³ Osnabrück University of Applied Science, Osnabrück/D; ⁴ RWTH Aachen University, Aachen/D
- P 32 **Oxidation of Cr-based alloys and coatings up to 1200°C**
L. Koliotassis¹; M. Kerbstadt¹; F. Lanoy¹; E. White¹; S. Ulrich²; S. Knowles³; B. Gorr⁴; M. Galetz¹; ¹ DECHEMA Forschungsinstitut, Frankfurt/D; ² University of Bayreuth, Bayreuth/D; ³ University of Birmingham, Birmingham/UK; ⁴ Karlsruher Institut für Technologie, Karlsruhe/D
- P 33 **Oxidation behaviour of novel chromium-based bcc-superalloys Cr(Fe)-NiAl**
T. Blackburn¹; K. Ma¹; M. Kerbstadt²; K. Beck²; M. Galetz²; A. Knowles¹; ¹ University of Birmingham, Birmingham/UK; ² Dechema Forschungsinstitut, Frankfurt am Main/D

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