

Table of Contents

Avant Propos, Preface

A Brief History of the 'Les Embiez HTC Symposia'

J. Stringer and R. Streiff 1

Kinetic Study of the Oxidation by Oxygen of a Zirconium Based Alloy: ZrNbO Differences between the Pre- and Post-Transition Stages

M. Tupin, F. Valdivieso, M. Pijolat, M. Soustelle, A. Frichet and P. Barb  ris 13

Internal Precipitation of Al₂O₃ and Cr₂O₃ in Austenitic Alloys

D.J. Young, M.L. Burg and P.R. Munroe 21

Recent Improvements in the Understanding of Alumina Film Formation and Durability

R. Molins and A.M. Huntz 29

Internal Nitridation during Creep Loading of Polycrystalline Ni-Base Superalloys

U. Krupp, R. Orosz, H.J. Christ, U. Buschmann and W. Wiechert 37

Relation Between Oxidation Kinetics and Chromium Diffusion in Stainless Steels

F. Toscan, A. Galerie and P.-. Santacreu 45

Role of Minor Element Addition in the Formation of Thermally Grown Alumina Scales

S. Chevalier, K. Przybylski, G. Borchardt and J.P. Larpin 53

Kinetic Investigations on Salt Melt Induced High-Temperature Corrosion of Pure Metals

A. Ruh and M. Spiegel 61

Effects of Titanium on a Ferritic Steel Oxidation at 950  C

C. Issartel, H. Buscail, E. Caudron, R. Cuff, F. Riffard, S. El Messki, N. Karimi and L. Antoni 69

Yttrium Implantation and Additional Element Effects on the Oxidation Behaviour of Reference Steels at 973 K

E. Caudron, H. Buscail, R. Cuff, C. Issartel, S. El Messki, S. Perrier and F. Riffard 77

Presentation, Calibration and First Experiments Using a New Thermobalance for Experiments in Sulfur Vapor Atmospheres

G. Strehl, S. Chevalier and J.P. Larpin 85

X-Ray Diffraction to Study the Oxidation Mechanism of Chromium at Elevated Temperatures

H. Buscail, Y.P. Jacob, M.F. Stroosnijder, E. Caudron, R. Cuff, F. Rabaste and S. Perrier 93

Study of the Sulfur Segregation for a TBC System

I. Rouzou, R. Molins, L. R  my and F. Jomard 101

Is KCl(g) Corrosive at Temperatures Above its Dew Point? Influence of KCl(g) on Initial Stages of the High Temperature Corrosion of 11% Cr Steel at 600  C

K. Segerdahl, J. Pettersson, J.E. Svensson and L.G. Johansson 109

The Effect of Silicon Addition on the High Temperature Oxidation of a Fe-Cr Alloy

L. Mikkelsen, S. Linder  th and J.B. Bilde-S  rensen 117

Experimental Study of the Interactions between Oxidation and Structural Defects

S. Perusin, B. Vigui  r, D. Monceau and E. Andrieu 123

Influence of Temperature and Composition of SO₂/O₂ Atmosphere on the Surface Morphology of Alumina Scales Formed on FeCrAl Steel

M. Homa, Z. Zurek, A. Stawiarski, J. Zurek, A. Gil and A. Rakowska 131

Modelling of the Kinetic Transition in Zirconium Based Alloys: Application to the Oxidation of Zircaloy-4 by Water Vapour

M. Tupin, F. Valdivieso, M. Pijolat, M. Soustelle, A. Frichet and P. Barb  ris 139

Computer Simulation of Morphology Evolution of Oxide Scales during Oxidation

S.L. Zhu, Y.M. Xiong, F. Zhang, Y.Y. Teng, F.H. Wang, J. Zhang and W.T. Wu 147

Effect of Nanocrystallization on Hot Corrosion Behavior of K38G Alloy with Sulfate Deposit at 900  C

S.J. Geng, S.L. Zhu, F.H. Wang and W.T. Wu 153

First Principle Calculation of Oxidation of Metals

S.L. Zhu, Y.Y. Teng, F.Y. Zhang, F.H. Wang and W.T. Wu 161

High Temperature Oxidation of Fe-3Si Alloy

T. Amano, K. Yamada, M. Okazaki, M. Takeda and T. Onishi 169

A New Interpretation of the "Breakaway" Oxidation Behaviour Observed at High Temperature on 304 Stainless Steel	
F. Riffard, H. Buscail, E. Caudron, R. Cuffe, C. Issartel, S. El Messki and S. Perrier	175
Nano-Oxidation of Cu(100) Investigated by In situ UHV-TEM	
G. Zhou and J.C. Yang	183
Environmental Protection of Metal Structures at High Temperature: State of the Art and Future Trends	
C. Coddet	193
Effects of Platinum on the Interdiffusion and Oxidation Behavior of Ni-Al-Based Alloys	
B. Gleeson, W. Wang, S. Hayashi and D.J. Sordellet	213
Environmental and Thermal Protection of γ-TiAl Alloys	
C. Leyens and R. Braun	223
Investigation of Oxide Formation during Short-Term Oxidation of Model NiAl Alloys	
H. Svensson, K. Stiller and J. Angenete	231
Evidence for the Formation of Al-Rich Reservoir Phases Resulting from Interdiffusion between MCrAlY Coating and Ni-Based Substrate	
M.P. Taylor, W.M. Pragnell and H.E. Evans	239
Effect of Pt Additions on the Sulfur Segregation, Void Formation and Oxide Scale Growth of Cast Nickel Aluminides	
Y. Cadoret, M.P. Bacos, P. Josso, V. Maurice, P. Marcus and S. Zanna	247
Development and Oxidation of a Re_xO_y- Modified Chromizing Coating	
L. Zhu, F.H. Wang, X. Peng and W.T. Wu	255
Low Mass Bondcoat for Robust Thermal Barrier Coatings	
B. Saint-Ramond, M. Carlin, M. Silva and J.R. Nickolls	265
High Temperature Oxidation Behaviour of Aluminide Coatings Obtained by Pack Cementation	
C. Houngninou, S. Chevalier and J.P. Larpin	273
Effects of Silica Nano-Particle Coatings on High-Temperature Oxidation of AISI 321	
C.R. Simon, R. Haugsrud, M. Musiani, S. Barison, J.C. Walmsley, T. Jacques and R. Bredesen	281
On the Understanding of TGO Growth and Spallation in Nickel Aluminides	
D. Oquab, M.C. Lafont, B. Viguier, D. Poquillon and D. Monceau	289
Effect of an Enamel Coating on Hot Corrosion Behavior of the Multi-Arc Plated NiCrAlY Composite Coating	
D.B. Xie, S.L. Zhu and F.H. Wang	297
High Quality Aluminide and Thermal Barrier Coatings Deposition for New and Service Exposed Parts by CVD Techniques	
F. Pedraza-Diaz, C. Tuohy, L. Whelan and A.D. Kennedy	305
High Temperature Al/Si Diffusion Coatings Deposited by Chemical Vapor Deposition in Fluidized Bed Reactors (CVD-FBR)	
F.J. Pérez, J.A. Trilleros, M.P. Hierro, A. Milewska, M.C. Carpintero and F.J. Bolívar	313
Coating Design Using Computational Codes for Steam Oxidation Conditions	
A. Milewska, M.P. Hierro, J.A. Trilleros, F.J. Bolívar and F.J. Pérez	321
Effect of Electrodeposited Thin Films Containing Yttrium on High Temperature Oxidation Behaviour of Ni Base Alloys	
J.M. Brossard, A.M. Huntz, J. Balmain and G. Bonnet	327
The Effect of Silicon on Cyclic Oxidation Behavior of Aluminide Coatings on Superalloy IN-738LC	
K. Shirvani, M. Saremi, A. Nishikata and T. Tsuru	335
Microstructural Transformation in Platinum Aluminide Coated on CMSX-4 Superalloy	
M. Reid, M.J. Pomeroy and J.S. Robinson	343
High Temperature Oxidation of (Ti,Al)N and (Ti,Al,Y)N Coatings on a Steel Prepared by Arc Ion Plating (AIP)	
M.S. Li, F.H. Wang and W.T. Wu	351
How to Design a Nano-Multilayered PVD Nitrides Based Coating Regarding its Resistance Against Oxidation and Aqueous Corrosion ?	
P. Steyer, C. Mendibide and J.-. Millet	359
Failure Analysis of High-Temperature Oxidation for Plasma Sprayed Thermal Barrier Coating Systems with Different Coating Characteristics	
S. Takahashi, M. Yoshida and Y. Harada	367

Zirconium Modified Aluminide by a Vapour Pack Cementation Process for Thermal Barrier Applications: Formation Mechanisms and Properties	
S. Naveos, G. Oberlaender, Y. Cadoret, P. Josso and M.P. Bacos	375
Measurement of Residual Stress in Thermally Grown Oxide Layers in Thermal Barrier Coating Systems - Development of Non-Destructive Test Methods	
S.R.J. Saunders, J.P. Banks, G. Chen and C.J. Chunnillall	383
Corrosion Performance of Unbalanced Magnetron-Sputter Coatings in Atmospheres Containing 1% H₂S or H₂S + 1% HCl at 600°C	
T.P. Levi, J.F. Norton, Z. Liu and W. Gao	391
Novel Low Temperature Diffusion Coatings for Heat Exchanger Materials	
V. Rohr and M. Schütze	401
On the Development and the Oxidation of Novel Ni-Cr and Ni-Al Nanocoatings by Composite Electrodeposition	
X. Peng, Y. Zhou, F.H. Wang and Y. Zhang	409
Evolution of Oxide Scale Morphology on (Ni,Pd)Al Coating during High Temperature Oxidation in Air	
H.R. Guan, M.J. Lin and X.F. Sun	417
Cyclic Oxidation of Chromia-Scale Forming Alloys: Lifetime Prediction and Accounting for the Effects of Major and Minor Alloying Additions	
B. Gleeson and B.T. Li	427
Effect of Microstructure on the High Temperature Oxidation and Pesting Behaviour of MoSi₂	
S. Chevalier, F. Bernard, E. Gaffet, S. Paris, Z.A. Munir and J.P. Larpin	439
Cyclic Oxidation Behaviour of Halogen Implanted Ti-46.5Al-4(Cr, Nb, Ta, B)	
A. Donchev and M. Schütze	447
High Temperature Properties of a New Powder Metallurgical FeCrAl Alloy	
B. Jönsson, R. Berglund, J. Magnusson, P. Henning and M. Hättestrand	455
The Oxidation Behaviour of the Commercial FeCrAlRE Alloys Aluchrom YHf and Kanthal AF Foils in Air at 800°-950°C	
M.J. Bennett, R. Newton, J.R. Nicholls, H. Al-Badairy and G.J. Tatlock	463
Optimisation of In-Service Performance of Boiler Steels by Modelling High Temperature Corrosion – EU FP5 OPTICORR Project	
L. Heikinheimo, K. Hack, D.J. Baxter, M. Spiegel, U. Krupp, M. Hämäläinen and M. Arponen	473
Numerical Model for Oxide Scale Growth with Explicit Treatment of Vacancy Fluxes	
C. Desgranges, N. Bertrand, K. Abbas, D. Monceau and D. Poquillon	481
Effect of Combined Yttrium and Zirconium Additions on Protective Alumina Scale Formation on High Purity FeCrAl Alloys during Oxidation in the Temperature Range of 1200 to 1300°C	
D. Naumenko, V. Kochubey, J. Le-Coze, E. Wessel, L. Singheiser and W.J. Quadackers	489
High Temperature Corrosion of TiAl - 2-5At-%X (X=Ag,Cr,Nb) Alloys in SO₂ and H₂S-H₂ Atmospheres	
K. Przybylski, T. Brylewski, A. Stawiarski and T. Narita	497
The Quantitative Role of Surface Doped Fluorine for the Improvement of Oxidation Resistance of TiAl in Air	
H.E. Zschau, M. Schütze, H. Baumann and K. Bethge	505
The Effect of Aluminium Ion Implantation on the Oxidation Behaviour of Fe-xCr-yAl Alloys	
J. Jedlinski, G. Borchardt, B. Rajchel and M. Nocun	513
In Situ - Investigation of the Oxide Scale Formation and Recrystallization of a FeCrAl Foil	
L. Rol, V. Kolarik, M. Juez-Lorenzo, H. Fietzek and N. Eisenreich	521
Importance of Beta Phase Formation for the Oxidation Resistance of TiAl Significantly Improved by Ion Implantation of Beta Formers	
S. Taniguchi, M. Yoshihara and K. Fujita	529
Comparing Different Methods to Determine the Intergranular Oxidation Damage on a Nickel Based Superalloy	
V. Garat, O. Brucelle, J.M. Cloué, V. Rebeyrolle, D. Monceau, B. Viguié and E. Andrieu	537
Metal Dusting Performance of Nickel-Base Alloys	
F. Di Gabriele, F.H. Stott and Z. Liu	545

The Use of Plasma Sprayed Laser Remelted Corrosion Resistant Metallic Coatings to Inhibit Metal Dusting	
K.T. Voisey, Z. Liu, H. Zougiani and F.H. Stott	553
The Role of Discontinuous Precipitation in Metal Dusting	
P. Szakálos, M. Lundberg and R. Pettersson	561
Experimental Analysis and Computer Simulation of Inward Oxide Growth during High-Temperature Corrosion of Low-Alloy Boiler Steels	
U. Krupp, V.B. Trindade, B.Z. Hanjari, S. Yang, H.J. Christ, U. Buschmann and W. Wiechert	571
Influence of Aluminum Depletion Effects on the Calculation of the Oxidation Lifetimes of FeCrAl Alloys	
I.G. Wright, R. Peraldi and B.A. Pint	579
Low Temperature Oxidation of Pure Iron: Growth Kinetics and Scale Morphologies	
N. Bertrand, C. Desgranges, D. Gauvain, D. Monceau and D. Poquillon	591
Predicting Equipment Lifetimes with High Temperature Corrosion Data	
R.C. John, A.D. Pelton, A.L. Young, W.T. Thompson and I.G. Wright	599
An Interfacial Thermodynamic Model for the Oxidation Kinetics of a Metal: Epitaxial Stress Effects	
S. Garruchet, T. Montesin, H. Sabar, M. Salazar and G. Bertrand	611
Luminescence-Based Characterization of Protective Oxides: from Failure Mechanisms to Non-Destructive Evaluation	
D.R. Clarke, V.K. Tolpygo and M. Gentleman	621
Measuring Adhesion of Cr₂O₃ and Al₂O₃ Scales on Fe-Based Alloys	
A. Galerie, F. Toscan, E. N'Dah, K. Przybylski, Y. Wouters and M. Dupeux	631
Direct Examinations of Oxide Scales upon Cooling: A New Way to Analyse Oxide Scale Spallation	
Y. Le Maoult, D. Adé and B. Pieraggi	639
Influence of Environment on Creep Properties of MC2 Single Crystal Superalloy at 1150°C	
S. Dryepondt, D. Monceau, F. Crabos and C. Vernault	647
Piezo-Spectroscopy Studies of Stress and Damage Evolution in the Thermally Grown Oxide in TBCs	
A. Atkinson and A. Selçuk	655
Cyclic Oxidation Modeling and Life Prediction	
J.L. Smialek	663
Growth Strains and Stress Relaxation in Alumina Scales during High Temperature Oxidation	
P.Y. Hou, A.P. Paulikas and B.W. Veal	671
Study of the Thermal Oxidation of Fe-15 Cr by Combined Raman and Photoelectrochemical Imaging	
J.P. Petit, M. Mermoux, Y. Wouters, A. Galerie and C. Chemarin	681
Multi-Sample Thermobalance for Rapid Cyclic Oxidation under Controlled Atmosphere	
J. Salabura and D. Monceau	689
A Thermo-Kinetic Study of Titanium Oxidation Assisted by a Nd-YAG Pulsed Laser	
L. Lavis, C. Langlade, P. Berger, D. Grevey and A.B. Vannes	697
Oxidation Kinetics and Scale Spallation of Iron-Chromium Alloys with Different Titanium Contents	
F. Toscan, L. Antoni, Y. Wouters, M. Dupeux and A. Galerie	705
Deflection and Three Point Bending Tests in SEM: Mechanical Characteristics of Oxide Films	
A.M. Huntz, M. Andrieux, G. Sattonnay and M. Condat	713
Modelling the Deformation and Fracture of an Al₂O₃ Scale Developed on Fe₃Al during Cooling	
D. Griffin, A. Daadbin and P.K. Datta	721
The Role that Interacting Failure Mechanisms Have on the Lifetime of APS-TBC under Oxidizing Conditions	
D. Renusch, H. Echsler and M. Schütze	729
Cyclic Oxidation Kinetics Modeling of NiAl Single Crystal	
D. Poquillon, D. Oquab and D. Monceau	737

Effect of Cycle Frequency on High Temperature Oxidation Behavior of Alumina-Forming Coatings Used for Industrial Gas Turbine Blades N. Vialas, D. Monceau and B. Pieraggi	747
Oxide Growth Stresses in an Austenitic Stainless Steel Determined by Creep Extension S. Gray, K. Berriche-Bouhanek and H.E. Evans	755
Volatility of Common Protective Oxides in High-Temperature Water Vapor: Current Understanding and Unanswered Questions E.J. Opila	765
Oxidation of Stainless Steel in H₂O/O₂ Environments – Role of Chromium Evaporation H. Asteman, K. Segerdahl, J.E. Svensson, L.G. Johansson, M. Halvarsson and J.E. Tang	775
Interaction between Mechanical Loading in Creep and Reactivity of Zircaloy-4 at 450°C R. El Tahhan, G. Moulin, M. Viennot, J. Favergeon and P. Berger	783
Effect of Alloying Additions in Ferritic 9-12%Cr Steels on the Temperature Dependence of the Steam Oxidation Resistance J. Zurek, L. Nieto Hierro, J. Piron-Abellan, L. Niewolak, L. Singheiser and W.J. Quadackers	791
The Oxidation Behavior of Fe-Al Alloys B.A. Pint and I.G. Wright	799
Chemical Potential Distribution and Void Formation in Magnetite Scale Formed in Oxidation of Iron at 823K T. Maruyama, N. Fukagai, M. Ueda and K. Kawamura	807
The Use of Model Alloys to Develop Corrosion-Resistant Stainless Steels B.A. Pint, R. Peraldi and P.J. Maziasz	815
The Effect of Water Vapour on the Oxidation of Stainless Steels Studied in Situ by X-Ray Diffraction M.J. Garcia Vargas, L. Lelait, V. Kolarik, H. Fietzek and M. Juez-Lorenzo	823
Isothermal Oxidation Behaviour of a Hot-Work Tool Steel P. Bruckel, P. Lamesle, P. Lours and B. Pieraggi	831
Oxygen and Water Vapour Oxidation of 15Cr Ferritic Stainless Steels with Different Silicon Contents Y. Wouters, G. Bamba, A. Galerie, M. Mermoux and J.P. Petit	839
High-Temperature Oxidation Behaviour of a Hot Isostatically-Pressed Si₃N₄-HfB₂ Ceramic Composite R. Klein, M. Desmaison-Brut, J. Desmaison, L. Mazerolles and M.F. Trichet	849
Oxidation and Corrosion Properties of the MoAl_xSi_{2-x} (C40)/Al₂O₃ Composite A. Magnusson and M. Sundberg	857
Influence of Grain-Size on Ionic Conductivity of Pure and Dense α-Al₂O₃ in the Temperature Range 400 - 1000°C J. Öijerholm, J. Pan and B. Jönsson	865
An Evaluation of the Performance of Candidate Gas Turbine Abradeable Seal Materials Exposed to a High Temperature Combustion Atmosphere N.J. Simms, J.F. Norton, A. Encinas-Oropesa and G.M. McColvin	875
Role of Alkali Hydroxides in the Fireside Corrosion of Heat Transfer Surfaces, a Practical Approach T. Blomberg, P. Makkonen and M. Hiltunen	883
Corrosion Experience in the Gasefier of the Elcogas IGCC Power Plant in Spain A.M. Lancha, M.G. Alvarez de Lara, D. Gómez-Briceño and P. Coca	891
Nucleation and Growth of Oxide Constituents on NiCoCrAlY Bond Coats during the Different Stages of EB-PVD TBC Deposition and Upon Thermal Loading W. Braue, K. Fritscher, U. Schulz, C. Leyens and R. Wirth	899
Development of a New Test Method of High Temperature Corrosion in Gas Turbines Based on Thermodynamic Modelling B. Bordenet and H.P. Bossmann	907
Development of Burner Rig Corrosion Tests for Gas Turbine Alloys: Study of Protective Metallic Coatings and Inhibitors for Hot Salt Corrosion E. Rocca, L. Aranda, M. Vilasi and P. Steinmetz	917
Influence of Moisture on the Hot Corrosion of Metals in Nitrate and Sulfate Melts I.B. Singh	927
Corrosion of Metallic Materials in Combustion Gas Condensates at 250°C J.M. Corrieu, L. Renaud, C. Duret and Y. Cetre	933

Development of Hot Corrosion on Coated Single Crystal Superalloys N.J. Simms, A. Encinas-Oropesa and J.R. Nicholls	941
Innovative Coating for Aggressive Environments: Land-Based Gas Turbine Applications S. Mercier, F. Iozzelli, M.P. Bacos and P. Josso	949
Steam Oxidation of Slurry Aluminide Coatings on Ferritic Steels for Advanced Coal-Fired Steam Power Plants A. Agüero and R. Muelas	957
A Pilot Plant Study of the Effect of Alkali Salts on Initial Stages of the High Temperature Corrosion of Alloy 304L J. Pettersson, C. Pettersson, H. Asteman, J.E. Svensson and L.G. Johansson	965
High Temperature Corrosion of Superheater Tubes in Waste Incinerators and Coal-Fired Plants K. Weulersse, G. Moulin, P. Billard and G. Pierotti	973
High Temperature Oxidation Behaviour of Boiler Steels under Simulated Combustion Gases S. Środa, S. Tuurna, K. Penttilä and L. Heikinheimo	981
Laboratory Testing for Evaluation of Steels and Alloys Used in Superheater Area of Boilers for Biomass-Based Fuels M. Mäkipää, D.J. Baxter, S. Środa and M. Oksa	989
Modeling of Low-Temperature Oxidation of Steel Tubes in Biomass Combustion M. Mäkipää, P. Makkonen and R.J. Fordham	999
Field Investigation of Steamside Oxidation of TP347H M. Montgomery, O.H. Larsen, S.A. Jensen and O. Biede	1007
Influence of KCl Deposit Morphology on Corrosion of Austenitic Alloys at 500°C P. Andersson, M. Norell and R. Gautheron	1015
Steam Oxidation Resistance of Selected Austenitic Steels S. Osgerby and A.T. Fry	1023
Erosion-Corrosion of Alloys in Power Plant Heat Exchangers at Elevated Temperatures S. Kalidakis and F.H. Stott	1031
Steam Corrosion Resistance of New 12% Cr Ferritic Boiler Steels V. Lépingle, G. Louis, D. Petelot, B. Lefebvre and B. Vandenberghe	1039
High Temperature Interaction of Pure Cr with KCl Y.S. Li, M. Sanchez-Pasten and M. Spiegel	1047
Fundamental Studies on Alkali Chloride Induced Corrosion during Combustion of Biomass S.C. Cha and M. Spiegel	1055
Oxidation-Sulfidation Behavior of Multiphase Mo-Si-B Alloys P.F. Tortorelli, J.H. Schneibel, K.L. More and B.A. Pint	1063
Materials for Solid Oxide Fuel Cells: the Challenge of their Stability L. Antoni	1073
High Temperature Corrosion of Steels in Liquid Pb-Bi Alloy F. Balbaud-Célérrier, L. Martinelli, A. Terlain, A. Ngomsik, S. Sanchez and G. Picard	1091
Interfacial Interactions between some La-Based Perovskite Thick Films and Ferritic Steel Substrate with Regard to the Operating Conditions of SOFC K. Przybylski, T. Brylewski and J. Morgiel	1099
Phase Transformation and Growth of Alumina on a Thin FeCrAl-RE Foil at Around 900°C H. El Kadiri, R. Molins and Y. Bienvenu	1107
State of the Sub-Surface Microstructure of Carbides Strengthened Cast Superalloys after High Temperature Oxidation – Use of Thermodynamic Modelling for a Better Understanding P. Berthod, S. Michon, S. Mathieu, R. Podor, C. Rapin and P. Steinmetz	1117
Three Examples of High-Temperature Corrosion of Metals by Molten Glasses C. Rapin, M. Vilasi, R. Podor, A. Carton, B. Gaillard-Allemand, P. Berthod and P. Steinmetz	1125
A New General and Rapid Method for Investigating Hot Corrosion: Preliminary Tests on Electrodes for Molten Carbonate Fuel Cells T.R. Griffiths and V.A. Volkovich	1133
Approach of the Corrosion Behaviour of T91 Steel in Lead or Lead-Bismuth Liquid Bath A. Maître, M. François, R. Podor and J.C. Gachon	1141

High Temperature Performance of Ferritic Stainless Steels Manufactured by Powder-Metallurgy	
F. Velasco, A. González-Centeno and A. Bautista	1149
High Temperature Oxidation Behaviour of Base Material and Laser-Weld Specimens of a Thin FeCrAl-RE Foil at Around 900°C	
H. El Kadiri, R. Molins and Y. Bienvenu	1157
Corrosion of High Temperature Alloys in the Coolant Helium of a Gas Cooled Reactor	
C. Cabet, A. Monnier and A. Terlain	1165
Influence of the Microstructural Texture of Cast Superalloys on their High-Temperature Oxidation Behaviour	
P. Berthod, S. Raude, A.S. Renck, C. Rapin, R. Podor and P. Steinmetz	1173
Oxidation and Hot-Corrosion Behavior of Sputtered Ti-48Al-8Cr-2Ag Nanocrystalline Coating	
Y.J. Xi, F.H. Wang and L.L. He	1181