

Anti-corrosive composite coatings based on PVB/ZnO:Co and PVB/HAP:Co

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Recently we have developed polymer/ceramic composite coatings based on poly(vinyl butyral), hydroxyapatite and zinc oxide-based nanostructured powders (PVB, HAP:Co and ZnO:Co, respectively). Prepared composite coatings showed good both adhesions to metal and glass surfaces and camouflage properties, thus can be used to improve combat capability of military equipment.

An essential demand of new materials in the military industry is to be multifunctional. Accordingly, the aim of this study was to examine corrosion activity of the PVB/ZnO:Co and PVB/HAP:Co coatings in saline solution as a function of immersion time. The ZnO:Co and HAP:Co nanostructured powders were synthesized by hydrothermal processing of a precipitate. To adjust optical properties, synthesized powders were annealed at 400, 800 and 1000 °C. Annealed powders were mixed with PVB: each powder was dispersed in ethanol with the aid of an ultrasonic probe, successively PVB powder was added in dispersion, in 10 wt.% regard to ethanol, and stirred on a mechanical stirrer to completely dissolve. Prepared solution was coated on stainless steel substrate and dried at room temperature for 72 hours to form solid coating. The corrosion activity of the coatings was measured by potentiodynamic polarization technique in the potential range from –0.8 to –0.2 V vs SCE, with the scan rate of 10 mVs⁻¹. The measurements were performed using a conventional three-electrode cell in 3% NaCl water solution as the electrolyte. Platinum foil, a standard calomel electrode (SCE) and coated stainless steel were used as the counter, reference and working electrode, respectively. We found that all examined coatings have lower corrosion activity than bare stainless steel or stainless steel coated with pure PVB. Differences in corrosion activity between the coatings are explained by different textural and opto-electronic properties of ceramic powders modified by the annealing procedure.

1. Corrosion and Scale Inhibition

W 1.02	Study of alkylphenol-formaldehyde oligomers modified with amines containing imidazoline fragments as corrosion inhibitors in the composition of preservation fluids <u>N. Abdullayeva</u> ¹ ¹ , Baku, Azerbaijan/AZ
W 1.03	Aluminium alloy corrosion inhibition by eco-friendly composition of natural polysaccharide and potassium sorbate <u>I. Zin</u> ¹ ; O. Khlopyk ¹ ; M. Tymus ¹ ; N. Sobodosh ¹ ; S. Korniy ¹ ¹ Karpenko Physico-Mechanical Institute of the NAS of Ukraine, Lviv/UA

2. Corrosion by Hot Gases

W 2.01	Volatile corrosion inhibitor study in a thin film electrolyte and standard electrochemical cell A. Pelesk ¹ ; H. Otmačić Ćurković ² ¹ JANAF Plc., Zagreb/HR; ² University of Zagreb, Zagreb/HR
W 2.02	Electrochemical evaluation of AFA alloys in carbonate molten salt as TES material applied to CSP plants M. Alberro ¹ ; J. Labidi ¹ ; <u>A. Fernández</u> ¹ ¹ University of the Basque country (UPV/EHU), San Sebastián-Donostia/E

3. Nuclear Corrosion

W 3.01	Effects of Temperature and Relative Humidity on Chloride-induced Stress Corrosion Cracking Behavior in Austenitic SS Welds <u>S. Kim</u> ¹ ; G. Kim ¹ ; S. Song ¹ ¹ Korea Institute of Materials Science, Changwon-si/ROK
W 3.03	Monitoring the galvanic corrosion of copper-steel coupling in bentonite slurry – early exposure period <u>K. Prijatelj</u> ¹ ; M. Hren ² ; A. Legat ² ; T. Kosec ¹ ¹ ZAG – Slovenian National Building and Civil Engineering Institute, Ljubljana/SLO; ² ZAG – Slovenian National Building and Civil Engineering Institute, Ljubljana/SLO
W 3.04	Corrosion of steel in contact with bentonite under conditions relevant for nuclear waste disposal <u>A. Singh</u> ¹ ; N. Finck ² ; D. Schild ² ; P. Geckeis ³ ¹ Karlsruher Institut für Technologie (KIT), Karlsruhe/D; ² Karlsruher Institut für Technologie (KIT), Karlsruhe/D; ³ Karlsruher Institut für Technologie (KIT), Karlsruhe /D
W 3.06	Assessing the role of surface conditions in SCC susceptibility of Alloy 182 in simulated LWR environments <u>A. Das</u> ¹ ; H. Seifert ¹ ; S. Ritter ¹ ¹ Paul Scherrer Institut, Villigen PSI/CH

4. Environment Sensitive Fracture

W 4.02	Understanding hydrogen-material interactions in additively manufactured Inconel 718
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	<u>A. Zafra</u> ¹ ; C. Santos Maldonado ¹ ; E. Martínez-Pañeda ¹ ; M. Pham ¹ ¹ Imperial College London, London/UK
W 4.04	Study of deuterium evolution reaction and absorption into low alloy steel <u>L. Cupertino-Malheiros</u> ¹ ; R. Chai ¹ ; H. Zhang ¹ ; E. Martínez-Pañeda ¹ ¹ Imperial College London, London/UK

5. Corrosion Mechanisms, Methods & Modelling

W 5.01	The mechano-electrochemical effect of X100 buried pipelines with pre-existing corrosion defect <u>G. Mubarak</u> ¹ ; I. Gadala ² ; I. Barsoum ¹ ; A. Al Fantazi ¹ ¹ Khalifa University , Abu Dhabi/UAE; ² Nova Chemicals, Calgary /CDN
W 5.03	Investigation of Corrosion Behaviour of Plastic Mould Steels Under Oxygen Free and Oxygen Saturated Conditions <u>M. Sorg</u> ¹ ; E. Andresen ² ; N. Hör ² ; L. Bošković ² ; A. Braun ³ ¹ Institute for Materials System Technology Thurgau, Tägerwilen/CH; ² HTWG Konstanz – University of Applied Sciences, Konstanz/D; ³ E. Braun GmbH, Kammerstein/D
W 5.07	Comparison of chromium-free aluminium desquamation methods <u>C. BRUSSIEUX</u> ¹ ; P. BRISSET ¹ ; D. BA ² ; T. PINAUD ² ¹ Orano, BEAUMONT HAGUE/F; ² Orano, EQUEURDREVILLE/F
W 5.08	Influence of calcium on the thermal oxidation of CoO and cobalt <u>Z. HALEM</u> ¹ ; N. HALEM ² ; O. HALEM ² ; M. ABRUDEANU ³ ; G. PETOT-ERVAS ⁴ ¹ University of Bouira, Bouira/DZ; ² Université de Tizi-Ouzou, Tizi-Ouzou/DZ; ³ University Pitesti, Pitesti/RO; ⁴ Centralesupélec CNRS, Gif-sur-Yvette Paris/F
W 5.09	A New Method for Deriving Metastable Pourbaix Diagrams of Stainless Steels Using Density Functional Theory Calculations <u>B. MALKI</u> ¹ ; I. GUILLOTTE ² ; B. BAROUX ³ ¹ SIMORG Computing, 38600/F; ² APERAM Isbergues, Isbergues 62330/F; ³ Grenoble Alpes university, Saint Martin d'Hères, 38402/F
W 5.10	Modelling of Anodic Delamination of Coated Stainless Steels Using Finite Elements <u>B. MALKI</u> ¹ ; I. GUILLOTTE ² ; B. BAROUX ³ ¹ SIMORG Computing, 38600/F; ² APERAM Isbergues, Isbergues 62330/F; ³ Grenoble Alpes university, Saint Martin d'Hères, 38402/F
W 5.11	The influence of LPSO structures on corrosion of Mg in acidic solutions <u>A. Zielińska</u> ¹ ; D. Martinez Guerrero ¹ ; A. Dobkowska ¹ ; W. Święszkowski ¹ ¹ Warsaw University of Technology, Warsaw/PL
W 5.14	An experimental study of corrosion during latent heat storage <u>A. Červenková</u> ¹ ; V. Danielik ¹ ¹ Slovak University of Technology, Bratislava/SK
W 5.15	Structures and dynamics of corrosion inhibitors near electrified interfaces S. Jeschke ¹ ; <u>J. Cole</u> ¹ ; P. Eiden ² ; R. Mishra ² ; P. Deglmann ² ; J. Gorges ² ; C. Rein ² ; P. Keil ³ ¹ RMIT University, Melbourne/AUS; ² BASF SE, Ludwigshafen am Rhein/D; ³ BASF Coatings GmbH, Munster/D
W 5.17	Influence of rainfall on corrosion behavior of carbon steel under atmospheric environment <u>H. Katayama</u> ¹ ; K. Kiyozumi ² ; I. Shitanda ² ; M. Itagaki ² ¹ National Institute for Materials Science, Tsukuba/J; ² Tokyo University of Science, Noda/J

W 5.19	<p>Optimizing design and fabrication of anodized tunneling surface for aluminium foils <u>C. Dong</u>¹ ¹ University of Science & Technology Beijing, Beijing/CN</p>
W 5.20	<p>Evaluating the effect of tin additions on the corrosion performance of Fe-Cr alloys in different environments <u>I. Toor</u>¹ ¹ King Fahd University of Petroleum and Minerals, Dhahran/SAR</p>
W 5.21	<p>Modelling of the Physical and Electronic Properties of Hematite (α-Fe₂O₃) with Density Functional Theory <u>F. Gao</u>¹; P. Keil²; N. Harrison¹ ¹ Imperial College London, London/UK; ² BASF Coatings GmbH, Muenster/D</p>
W 5.25	<p>Evaluation of local corrosion in AlZn10Si8Mg aluminum cast alloy <u>c. LE PEN</u>¹ ¹ CRM Group, liege/B</p>
W 5.26	<p>Corrosion modeling of welded joints of wind power facilities <u>L. Poberezhnyi</u>¹; S. Kessler¹ ¹ Helmut Schmidt University/University of the Federal Armed Forces Hamburg, Hamburg/D</p>
W 5.27	<p>Correlation between pitting susceptibility and surface acidity, point of zero charge of passive film on aluminum <u>D. Chen</u>¹; C. Dong¹; M. Li¹; Y. Ji¹ ¹ University of Science and Technology Beijing, Beijing/CN</p>
W 5.28	<p>Characterization of aluminum alloys for its application as end plate material in fuel cells <u>D. Chhaniyara</u>¹; M. Mandel¹; L. Krüger¹ ¹ TU Bergakademie Freiberg, Freiberg/D</p>
W 5.29	<p>Electrochemical noise analysis using statistical analysis, frequency domain analysis and frequency-time domain analysis <u>M. Odenthal</u>¹; A. Weltin¹; S. Rupitsch¹; J. Kieninger¹ ¹ University of Freiburg — IMTEK, Freiburg/D</p>
W 5.30	<p>Novel Approaches to Corrosion Analysis through Data-Driven Computer Vision and Reflective Microscopy <u>A. Makogon</u>¹; L. Coelho²; J. Ustarroz³; F. Kanoufi¹; V. Shkirskiy¹ ¹ Université Paris Cité, Paris/F; ² Université libre de Bruxelles (ULB), Brussels/B; ³ Université libre de Bruxelles (ULB), Brussels/B</p>
W 5.31	<p>Revisiting the effect of nickel on the corrosion resistance of Fe-Cr alloys <u>Y. Wang</u>¹; D. Blackwood¹ ¹ National University of Singapore, Singapore/SGP</p>
W 5.32	<p>Application of cryo-atom probe tomography to study early-stage corrosion mechanism at liquid-solid interfaces at near atomic scale <u>T. Schwarz</u>¹; E. Woods¹; L. Aota¹; X. Zhou¹; I. McCarroll¹; B. Gault¹ ¹ Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf/D</p>
W 5.33	<p>New developments in the determination of the rate of electrochemical corrosion <u>Z. Lukacs</u>¹; G. Gubicza²; Z. Barabási³; T. Kristóf¹ ¹ University of Pannonia, Veszprém/H; ² Arbot Mechatronics Ltd., Veszprém/H; ³ ECOOL Ltd., Budapest/H</p>

7. Marine Corrosion

W 7.01	<p>Effect of dissolved O₂/CO₂ mixture on SCC of API 5L X70 pipeline steel in simulated environments <u>S. Abubakar</u>¹; S. Mori²; J. Sumner² ¹ Cranfield University, Cranfield, Bedfordshire/UK; ² Cranfield University, Bedford/UK</p>
W 7.03	<p>Estimating a century of corrosion: the toxic ammunition at the Paardenmarkt <u>K. Verhasselt</u>¹; W. Witteveen¹; J. Horvath¹; G. Potters¹; S. Lenaerts²; K. De Baere¹ ¹ Antwerp Maritime Academy, Antwerp/B; ² University Of Antwerp, Antwerp/B</p>
W 7.04	<p>Effect of microstructure on the electrochemical behaviour of 42CrMo4 QT steel <u>M. Zanocco</u>¹; F. Andreatta¹; S. Virgilio²; P. Macheda²; A. Silvonen³; A. Lanzutti¹; L. Fedrizzi¹ ¹ University of Udine, Udine/I; ² Wärtsilä Italia S.p.A., Trieste/I; ³ Wärtsilä Finland Oy, Vaasa/FIN</p>
W 7.06	<p>Silicon Effect on Corrosion Behavior of Al-Mg Alloys in Marine Environment J. Santos¹; T. Vida¹; N. Cheung²; A. Garcia²; <u>C. Cardoso de Brito</u>¹ ¹ São Paulo State University, São João da Boa Vista/BR; ² University of Campinas, Campinas/BR</p>
W 7.07	<p>Development of environmentally friendly anti-fouling corrosion protection systems for marine application <u>E. Tubaro</u>¹; F. Andreatta¹; M. Pesle²; A. Bomtempo²; L. Fedrizzi¹ ¹ Università degli Studi di Udine, Udine/I; ² MARLIN srl, Trieste/I</p>
W 7.08	<p>Effect of microstructure partitioning on intergranular corrosion of duplex stainless steel <u>Q. Hu</u>¹; F. Huang¹; J. Liu¹ ¹ Wuhan University of Science and technology, Wuhan/CN</p>
W 7.09	<p>The Mechanism of Passivation Breakdown of Multi Principal Element Alloys in Aqueous NaCl Electrolytes at Different pH <u>A. Wetzel</u>¹; D. Morell²; O. Ozcan²; J. Witt² ¹ Bundesanstalt für Materialforschung und -prüfung, Berlin/D; ² Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin/D</p>

8. Microbial Corrosion

W 8.01	<p>Single-cell level investigation of microbiologically induced degradation of passive film of stainless steel combining multi-mode AFM <u>H. Qian</u>¹; T. Cui²; W. Chang²; L. Lu²; D. Zhang²; X. Li² ¹, Beijing/CN; ² University of Science and Technology Beijing, Beijing/CN</p>
W 8.02	<p>Corrosion enhanced by hydrogenotrophic methanogens differently enriched on copper and steel alloys <u>E. Cazzulani</u>¹; G. Ghiara¹; P. Cristiani²; G. Chiarello¹ ¹ Università degli studi di Milano, Milano/I; ² RSE-Ricerca sul Sistema Energetico S.p.A, Milano/I</p>
W 8.03	<p>New multiparametric probe to monitor microbial corrosion in soil <u>P. Cristiani</u>¹; L. Murachelli² ¹ RSE-Ricerca sul Sistema Energetico S.p.A, Milano/I; ² AMEL, Milano/I</p>
W 8.04	<p>Taxonomic and proteomic characterization of corrosive biofilms on steel under differential metabolic conditions in freshwater media <u>L. Raghunatha Reddy</u>¹; C. Egerter²; J. Meier²; A. Fiskal¹; T. Ternes¹; A. Wick¹ ¹ German Federal W 16.01 Institute of Hydrology, Koblenz/D; ² University of Koblenz, Koblenz/D</p>

W 8.06	Novel Metal Bionanohybrids against MIC Consortia M. Salta ¹ ; <u>N. Noel-Hermes</u> ¹ ; C. Ortega Nieto ² ; J. Palomo ² ¹ Endures B.V., Den Helder/NL; ² Institute of Catalysis (CSIC), Madrid/E
W 8.07	Corrosion of Container Material for High-Level Nuclear Waste in the Presence of Bentonite or the SRB <i>Desulfosporosinus burensis</i> <u>K. Kirsch</u> ¹ ; N. Matschiavelli ² ; T. Stumpf ² ; A. Koerd ¹ ¹ Federal Institute for Materials Research and Testing (BAM), Berlin/D; ² Helmholtz-Zentrum Dresden-Rossendorf, Dresden/D
W 8.08	Antifouling nano-designed composite as a mitigation strategy E. R. Silva ¹ ; F. Olga ¹ ; G. Mafalda ¹ ; <u>L. Noelia</u> ¹ ; N. Noël-Hermes ² ; M. Salta ² ¹ Faculdade de Ciências da Universidade de Lisboa, Lisboa/P; ² Endures B.V., Den Helder/NL
W 8.10	Microbially induced corrosion and the environmental parameters influencing local microbial communities in waterways and estuaries <u>K. Folens</u> ¹ ; K. De Baere ² ; J. Horvath ² ; G. Potters ² ; N. Boon ¹ ¹ Ghent University, Gent/B; ² Antwerp Maritime Academy, Antwerp/B
W 8.11	Towards Finite Element Modelling of Microbiologically Influenced Corrosion <u>D. Blackwood</u> ¹ ; M. Saeedikhani ¹ ¹ National University of Singapore, Singapore/SGP
W 8.13	Effect of 5 Methyl-1H-benzotriazole as corrosion inhibitor on microbiologically influenced corrosion on mild steel in red sea water <u>N. Patel</u> ¹ ¹ , Thuwal/SAR
W 8.14	Conductive nanowires accelerated corrosion of C1020 carbon steel by <i>Desulfovibrio vulgaris</i> <u>F. Alrammaha</u> ¹ , Farah Alrammah ¹ , Lingjun Xu ³ , Niketan Patel ² , Nicholas Kontis ² , Alexandre Rosado ² , Tingyue Gu ³ ¹ Imam Abdulrhman Bin Faisal University, Dammam/SA; ² King Abdullah University of Science and Technology, Thuwal/SA; ³ Ohio University, Ohio/US

9. Corrosion of Steel in Concrete

W 9.02	The effect of copper tailings addition on the mechanical and electrochemical properties of mortars <u>C. Sepúlveda</u> ¹ ; L. Muñoz ² ; C. Guerra ¹ ; N. Carrasco ¹ ; M. Sancy ¹ ¹ Pontificia Universidad Católica de Chile, Santiago/RCH; ² Pontificia Universidad Católica de Valparaiso, Santiago/RCH
W 9.03	Numerical Insights into the Ability of Indirect Galvanostatic Pulse in Wenner Configuration to Locate Corroding Areas in Macrocell Corrosion of Steel in Concrete <u>R. Rodrigues</u> ¹ ; S. Gaboreau ¹ ; J. Gance ² ; I. Ignatiadis ¹ ; S. Betelu ¹ ¹ BRGM, Orléans/F; ² Iris Instruments, Orléans/F
W 9.04	Effect of current passage on the protective properties of concrete M. Kouril ¹ ; <u>M. Reiser</u> ² ¹ University of Chemistry and Technology, Prague/CZ; ² University of Chemistry and Technology, Prague, Czech Republic/CZ
W 9.05	Permanent corrosion monitoring of steel in concrete – Long-term performance <u>E. Eustáquio</u> ¹ ; M. Correia ¹ ; R. Fontinha ¹ ¹ Laboratório Nacional de Engenharia Civil, Lisbon/P

10. Corrosion in Oil & Gas Production

W 10.01	Parametric Study of Top of Line Corrosion in Highly Sour Environments L. AlSharif ¹ ; M. Shahrani ¹ ¹ Saudi Aramco, Dhahran/SAR
W 10.02	Effect of micro-alloying on corrosion behaviors of steels in CO₂ saturated brine solutions with different pH D. Yun ¹ ; H. Bang ¹ ; J. Park ¹ ; S. Jin ¹ ; Y. Kim ¹ ; W. Kim ² ; S. Kim ¹ ¹ Suncheon National University, Suncheon/ROK; ² POSCO, Gwangyang/ROK
W 10.04	Synergistic effect of oleic acid imidazoline and CeCl₃ on carbon steel corrosion in CO₂ saturated chloride-carbonate solution G. Bilić ¹ ; T. Borko ² ; K. Žbulj ¹ ¹ University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering, Zagreb/HR; ² INA d.d., Zagreb/HR
W 10.05	Tribocorrosion Behavior of Ti-4Al-2.5V-1.2Fe alloy drill pipe after anodic oxidation treatment for oil & gas application K. TONG ¹ ; J. ZHANG ² ; G. LI ³ ; Y. WU ² ; X. MA ³ ; H. YIN ¹ ; Y. ZHANG ¹ ; G. ZHU ¹ ; J. ZHANG ¹ ; Q. LIU ¹ ¹ State Key Laboratory for Performance and Structural Safety of Petroleum Tubular Goods and Equipment Materials, Xi'an/CN; ² Downhole service company, CNPC Chuanqing Drilling Engineering Company Ltd.(CCDC), Chengdu/CN; ³ Shanxi North Fenglei Industrial Group Co., Ltd., Houma/CN
W 10.07	Simulation of localized corrosion propagation in inhibited media via potentiostatic test B. Santos ¹ ; M. Serenario ¹ ; X. Wang ¹ ; D. Young ¹ ; M. Singer ¹ ; M. Mohamed-Said ² ; A. Bueno ³ ¹ Ohio University, Athens/USA; ² TotalEnergies, Pau/F; ³ Universidade Federal de São João del Rei, São João del Rei/BR
W 10.10	Internal Corrosion Rupture of a 6-in Gas Line Pipe F. Jewilli ¹ ¹ University of Manchester, LIBYA/LAR

12. Metallic Coatings

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W 12.02	Characterization of Nano-structured graded multi-layered coating N. Rasheedi ¹ ; S. Mutairi ² ¹ Research Center, Dhahran/SAR; ² Research Center,, Eastren/SAR
W 12.03	Design of Experiment for Advanced Nanostructured Coating: Dry Solid Particle Erosion Tests S. Motairi ¹ ; N. Al-Rasheedi ² ¹ R&DC, Eastern/SAR; ² DHR&DC , Khobar/SAR
W 12.05	Synthesis and properties of the Ni-Mo-B electrochemical composite anticorrosion coatings S. Halaichak ¹ ; M. Khoma ¹ ; V. Pokhmurskii ¹ ; R. Mardarevych ¹ ; V. Vynar ¹ ¹ Karpenko Physico-Mechanical Institute of the NAS of Ukraine, Lviv/UA
W 12.06	An Investigation of Phase Impact on Corrosion Properties of Electrodeposited Zn-Ni Coatings L. Yi ¹ ; S. Wang ¹ ¹ University of Southampton, Southampton/UK

W 12.07	Corrosion performance of cold spray coated stainless steel in nitric acid environment <u>M. LEONARDI</u> ¹ ¹ Université Paris-Saclay, CEA, elancourt/F
W 12.08	Corrosion resistance of Galvanised Zn-Al Steel Sheets Produced in a Hot Dip Process Simulator (HDPS) L. Suarez ¹ ; <u>M. Prado</u> ² ; M. Panera ² ; A. Montes ² ; O. Conejero ² ; J. Garcia-Revuelta ² ¹ Fundación IDONIAL, Avilés/E; ² Fundación IDONIAL, Aviles/E
W 12.09	Corrosion control of ruthenium oxy-hydroxide coating for the development of robust pH sensors: observation and monitoring of the near field of a nuclear waste disposal site. <u>D. AOUBIDA</u> ¹ ; I. IGNATIADIS ² ; S. BETELU ² ; J. BERTRAND ³ ; R. RODRIGUES ² ; q. PHAM ⁴ ¹ BRGM, Orléans/F; ² BRGM, Orleans/F; ³ Andra, Châtenay-Malabry/F; ⁴ ICCMO Paris Saclay , Orsay/F
W 12.10	Advancing Geothermal Heat Exchanger Efficiency: Investigating Coating Solutions for Enhanced Heat Transfer and Reduced Corrosion in Heat Exchangers S. Paul ¹ ; M. Wu ² ; G. Schneider ³ ; D. Martelo ³ ; N. Kale ³ ; <u>A. Bhuvanendran Nair Jayakumari</u> ² ; A. Castro-Vargas ² ; C. Penot ² ; A. Loukodimou ² ¹ TWI Ltd /University of Leicester, Cambridge/UK; ² University of Leicester, Leicester/UK; ³ TWI Ltd, Cambridge/UK
W 12.11	Effect of heat treatment on the corrosion and mechanical properties of Nickel Tungsten alloy electrodeposits <u>G. Guilbert</u> ¹ ¹ Materianova, MONS/B
W 12.13	Characterization of the corrosion behavior of Zn-Al-Mg coated steel under São Paulo acidic rain by Scanning Vibrating Electrode Technique <u>M. Bolsanello</u> ¹ ; A. Abreu ² ; M. P. Guedes ¹ ; I. Costa ¹ ; J. Izquierdo ² ; J. Rossi ¹ ¹ Nuclear and Energy Research Institute, IPEN–CNEN/SP, São Paulo/BR; ² Universidad de La Laguna, La Laguna/E
W 12.14	Corrosion behavior of anodic titanium oxide modified in-situ by vanadium incorporation <u>M. Michalska-Domańska</u> ¹ ; M. Lazińska ² ; K. Prabucka ³ ; M. Czerwiński ⁴ ; T. Durejko ² ¹ Military University of Technology, Warszawa/PL; ² Military University of Technology/Institute of Materials Science, Warschau/PL; ³ Military University of Technology/Institute of Optoelectronics, Warschau/PL; ⁴ Military University of Technology of Optoelectronics, Warschau/PL

13. Inorganic Coatings

W 13.02	Corrosion resistance of micro-arc oxidation coating on AZ91-Ti MMC <u>J. Jiao</u> ¹ ; J. Zhang ¹ ; Y. Lian ¹ ; J. Gao ¹ ¹ University of Science and Technology Beijing, Beijing/CN
W 13.04	Corrosion and anodizing behavior of dissimilar AA5052-H32 and AA6061-T6 alloys joined by metal inert gas welding <u>R. Klumpp</u> ¹ ; S. Akbarzadeh ² ; F. Delaunois ² ; I. Costa ³ ; M. Olivier ¹ ¹ UMONS, Mons/B; ² Umons, Mons/B; ³ Instituto de Pesquisas Energéticas e Nucleares, São Paulo/BR
W 13.05	Plasma electrolytic oxidation pre-treatments as a way to affect the properties of oxide coatings grown on aluminum and magnesium alloys <u>A. Olesiński</u> ¹ ; M. Wala ¹ ; M. Stec ¹ ; M. Bik ² ; P. Jeleń ² ; P. Chulkin ¹ ; W. Simka ¹ ; M.

	Sowa ¹ ¹ Silesian University of Technology, Gliwice/PL; ² AGH University of Technology, Kraków/PL
W 13.06	Microstructure, mechanical properties and oxidation resistance of Zr-Hf-N coatings by magnetron co-sputtering <u>Z. Wang</u> ¹ ¹ Xiamen University, Xiamen/CN
W 13.07	Performance of novel Polymer Derived Ceramic (PDC) coatings developed for refinery piping systems and in-situ corrosion monitoring by EIS-based sensor <u>S. Vry</u> ¹ ; L. Freire ² ; I. Ezpeleta ² ¹ Université Grenoble Alpes, CEA, LITEN, F-38054 Grenoble (France), Grenoble/F; ² AIMEN Technology Center, O Porriño/E
W 13.10	Influence of the composition of the electrolyte and parameters of the synthesis of the plasma-electrolyte oxidized layer on alloy 1160 on its corrosion resistance in 3% NaCl solution <u>H. Pokhurska</u> ¹ ; H. Veselivska ² ; M. Student ² ; V. Posuvailo ² ; K. Zadorozhna ² ¹ Technische Universität Chemnitz, Chemnitz/D; ² Karpenko Physico-Mechanical Institute of the National Academy of Sciences of Ukraine, Lviv/UKR

14. Organic Coatings

W 14.01	Multifunctional nanocomposites epoxy coating with enhanced mechanical, anticorrosion and bactericidal properties <u>M. Samardžija</u> ¹ ; M. Kurtela ² ; V. Alar ² ; I. Stojanović ² ; B. Runje ² ¹ Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb, Zagreb/HR; ² Faculty of Mechanical Engineering and Naval Architecture/University of Zagreb, Zagreb/HR
W 14.02	Corrosion Properties and Thermal Stability of Polyurethane Coatings <u>M. Logar</u> ¹ ; <u>I. Fatović</u> ¹ ; I. Stojanović ¹ ; M. Kurtela ¹ ; V. Alar ¹ ; I. Juraga ¹ ¹ Faculty of Mechanical Engineering and Naval Architecture/University of Zagreb, Zagreb/HR
W 14.03	High temperature resistant coatings for wood stoves <u>M. Kurtela</u> ¹ ; I. Stojanović ¹ ; V. Alar ¹ ; F. Kapor ² ; B. Škrlec ³ ¹ Faculty of Mechanical Engineering and Naval Architecture/University of Zagreb, Zagreb/HR; ² Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb, Zagreb/HR; ³ University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb/HR
W 14.05	Application of Biochar Nanoparticles in Zinc Epoxy Coatings <u>Z. Li</u> ¹ ; H. Bi ¹ ; C. Weinell ¹ ; K. Dam-Johansen ¹ ¹ Technical University of Denmark (DTU), Kgs. Lyngby/DK
W 14.06	The Effect of Carbon-Based Surfaces on the Development and Structure of Marine Cyanobacterial Biofilms M. Romeu ¹ ; <u>M. Lima</u> ¹ ; L. Gomes ¹ ; E. de Jong ² ; J. Morais ³ ; V. Vasconcelos ⁴ ; M. Pereira ¹ ; O. Soares ¹ ; J. Sjollem ² ; F. Mergulhão ¹ ¹ Faculty of Engineering of University of Porto, Porto/P; ² University Medical Center Groningen, Groningen/NL; ³ CIIMAR – Interdisciplinary Centre of Marine and Environmental Research, University of Porto, Porto/P; ⁴ Faculty of Sciences of University of Porto, Porto/P
W 14.07	ANTICORROSION PERFORMANCE OF AN EPOXY COATING APPLIED ON THE CARBON STEEL PRE-TREATED WITH SILANES CONTAINING A NATURAL CORROSION INHIBITOR M. Pessoa ¹ ; J. Braga ¹ ; <u>B. Pereira da Silva</u> ¹ ; B. Freitas ¹ ; S. Santos ² ; V. Capelossi ² ; F. Cotting ¹

	¹ Federal University of Minas Gerais , Belo Horizonte/BR; ² State University of Santa Cruz, Ilhéus/BR
W 14.08	Evaluation of adhesion properties of coating film on Zn-Mg-Al alloy-coated steel sheets <u>S. OH</u> ¹ ¹ Pohang Institute of Metal Industry Advancement, 201/ROK
W 14.09	A novel strategy to enhance the anti-corrosion of epoxy coating based on fluorinated graphene coupled with MOFs <u>B. Dou</u> ¹ ; S. Duan ¹ ; X. Gao ² ; Y. Zhang ¹ ; X. Lin ¹ ; Z. Fang ² ¹ Sichuan University of Science & Engineering, Zigong/CN; ² Zhongshan Photoelectric Materials Co., Zibo/CN
W 14.10	Possibilities of Robotic Application of High-Temperature Coatings for Protection of Fireplaces I. Stojanović ¹ ; <u>B. Škrlec</u> ¹ ; V. Alar ¹ ; M. Kurtela ¹ ¹ University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb/HR
W 14.11	A durable and photothermal superhydrophobic coating with entwined CNTs-SiO₂ hybrids for anti-icing applications F. Zhang ¹ ; <u>D. Xu</u> ² ; D. Zhang ³ ; L. Ma ³ ; J. Wang ³ ; Y. Huang ³ ; M. Chen ⁴ ; H. Qian ³ ; X. Li ³ ¹ Wuhan Research Institute of Materials Protection, WuHan/CN; ² University of Science and Technology Beijing, Haidian District /CN; ³ University of Science and Technology Beijing, Beijing/CN; ⁴ Sinopec Research Institute of cSafety Engineering, Qingdao/CN
W 14.12	Tuning the colour of topcoats <u>U. Paszek</u> ¹ ; I. Gajecka ¹ ; S. Piłat ¹ ; L. Komorowski ² ; A. Królikowska ² ; I. Kunce ² ; D. Wojda ² ; K. Zacharuk ² ; E. Langer ³ ; M. Zubielewicz ³ ¹ Polish Corrosion Society, Gdańsk/PL; ² Road and Bridge Research Institute, Warsaw/PL; ³ The Łukasiewicz Research Network - Institute for Engineering of Polymer Materials and Dyes, Gliwice/PL
W 14.13	Waterbased zinc primers with reduced zinc content <u>U. Paszek</u> ¹ ; I. Gajecka ¹ ; S. Piłat ¹ ; L. Komorowski ² ; A. Królikowska ² ; I. Kunce ² ; D. Wojda ² ; K. Zacharuk ² ; E. Langer ³ ; M. Zubielewicz ³ ¹ Polish Corrosion Society, Gdańsk/PL; ² Road and Bridge Research Institute, Warsaw/PL; ³ The Łukasiewicz Research Network - Institute for Engineering of Polymer Materials and Dyes, Gliwice/PL

15. Pretreatments

W 15.01	The phosphonic acid inhibition of corrosion under the waterborne coating investigated by EIS <u>A. Kapitanović</u> ¹ ; H. Otmačić Ćurković ¹ ¹ Faculty of Chemical Engineering and Technology, University of Zagreb, Zagreb/HR
W 15.02	Influence of pre-treatment on the corrosion and adhesion properties of Al-anode coatings <u>T. Naacke</u> ¹ ; M. Silva Campos ¹ ; C. Blawert ¹ ; M. Störmer ¹ ; M. Zheludkevich ¹ ¹ Helmholtz-Zentrum Hereon, Geesthacht/D
W 15.03	One step pre-treatment that ensures corrosion protection, paint adhesion and cleaning properties (combining the worlds of chemical and mechanical pre-treatment) <u>R. van Meer</u> ¹ ¹ AD Chemicals B.V., Heijningen/NL

W 15.04	<p>The effect of increasing the concentration of Zr-based conversion coating on the topography of the steel surface</p> <p><u>A. Poropat</u>¹; A. Razumić¹; I. Stojanović¹</p> <p>¹ University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb/HR</p>
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16. Self-healing and Smart Coatings

W 16.03	<p>In-situ incorporation of nanocontainers during Plasma Electrolytic Oxidation</p> <p><u>S. Al Abri</u>¹; A. Rogov²; A. Mathews²; B. Mingo²; A. Yerokhin²</p> <p>¹ University of Manchester, Manchester/UK; ² The University of Manchester, Manchester/UK</p>
W 16.04	<p>LDH conversion coatings for active corrosion protection of LPSO Mg alloys</p> <p>J. Gómez-Granados¹; E. Matykina¹; R. Arrabal¹; G. Garcés²; <u>M. Mohedano</u>¹</p> <p>¹ Universidad Complutense de Madrid, Madrid/E; ² CENIM-CSIC, Madrid/E</p>
W 16.06	<p>Self-healing analysis of corrosion on Mg alloy with microcapsules PU/Pua/IPDI</p> <p><u>M. OSTAPIUK</u>¹; J. Bienias¹; A. Marques²</p> <p>¹ Lublin University of Technology, LUBLIN/PL; ² Instituto Superior Técnico, Lisboa/P</p>
W 16.07	<p>In situ LDH growth on bare and PEO coated magnesium alloys in the presence of chelating agents</p> <p><u>T. Shulha</u>¹; M. Serdechnova¹; S. Lamaka¹; X. Lu²; C. Feiler¹; C. Blawert¹; M. Zheludkevich¹</p> <p>¹ Helmholtz-Zentrum hereon GmbH, Geesthacht/D; ² Northeastern University, Shenyang/CN</p>
W 16.08	<p>Development of novel coating with self-healing properties under immersion in NaCl solution</p> <p><u>M. Aramayo</u>¹; I. Aoki¹</p> <p>¹ University of São Paulo, São Paulo/BR</p>

17. Corrosion in the Refinery and Petrochemistry Industry

W 17.01	<p>A Case Study on the Damage Types of Duplex SS by Various Corrosion Environments in Refinery</p> <p><u>D. Lee</u>¹</p> <p>¹ SK energy, Ulsan/ROK</p>
W 17.03	<p>Predicting Acid Gas Dew-Point Corrosion At Sulfur Recovery Units Through Proactive Corrosion Management</p> <p><u>A. Alratoee</u>¹; I. Albrahim²</p> <p>¹ Saudi Aramco, Khobar Saudi Arabia/SAR; ² Saudi Aramco, Dhahran/SAR</p>
W 17.04	<p>Failure Analysis of Crack on Subang CO2 Removal Absorber Column and Repair Methods</p> <p><u>R. Kurniawan</u>¹; M. Kunardianto²</p> <p>¹ PT. Pertamina EP, Cirebon, West Java/RI; ² PT. Pertamina EP, Jakarta/RI</p>

19. Automotive Corrosion

W 19.01	The Investigation of Correlation between Corrosion and Lap shear Strength on Steels and Al Joint <u>S. Hong</u> ¹ ; Y. Yoo ¹ ¹ POSCO, Incheon/ROK
W 19.02	Corrosion and tribocorrosion characterization of a novel cast quasicrystal aluminum alloy <u>B. Zajec</u> ¹ ; M. Bajt Leban ² ; T. Kosec ² ; B. Leskovar ³ ; B. Markoli ³ ¹ Slovenian National Building and Engineering Institute, Ljubljana/SLO; ² Slovenian National Building and Civil Engineering Institute, 11etroleum/SLO; ³ University of Ljubljana, Ljubljana/SLO

20. Tribocorrosion

W 20.01	The Investigation of Tungsten Carbide-Cobalt Coatings Behaviour Subjected to Mechanical Forces and Stresses <u>N. Al-Rasheedi</u> ¹ ; S. Al-Mutairi, ¹ ¹ Saudi Aramco Oil Company, Dhahran/SAR
W 20.02	Evaluation of a new multi-component aluminium alloy applied as a low-density thermal barrier for corrosion, wear and hydrogen applications <u>E. Villanueva Viteri</u> ¹ ; I. Vicario Gómez ¹ ; J. Albizuri Goikoetxea ² ; I. Hurtado Hurtado ³ ; T. Guraya Diez ² ; N. Burgos García ⁴ ¹ TECNALIA, Basque Research and Technology Alliance (BRTA), Derio/E; ² University of the Basque country (UPV/EHU), Bilbao/E; ³ Mondragon University, Mondragón/E; ⁴ Ceit-IK4, Donostia-San Sebastián/E

21. Polymers and Advanced Materials

W 21.02	Anti-corrosive composite coatings based on PVB/ZnO:Co and PVB/HAP:Co <u>K. Aleksic</u> ¹ ; D. Bajic ² ; Z. Stojanovic ¹ ; L. Latinovic ³ ; V. Tomasevic ³ ; I. Stojkovic Simatovic ⁴ ; S. Markovic ¹ ¹ Institute of Technical Sciences of SASA, Belgrade/SRB; ² Military Technical Institute, Belgrade/SRB; ³ School of Engineering Management, University Union – “Nikola Tesla”, Belgrade/SRB; ⁴ Faculty of Physical Chemistry – University of Belgrade, Belgrade/SRB
W 21.03	Towards Sustainable Waste Management: Enhancing Recycling of Multi-material Waste using ‘Green’ Solvents <u>A. Loukodimou</u> ¹ ; C. Lovell ² ; K. Maniam ³ ; A. Antelava ² ; T. Gouveia ⁴ ; P. Rullière ⁴ ; G. Theodosopoulos ³ ; N. Kale ³ ; S. Paul ⁵ ¹ University of Leicester, Leicester/UK; ² TWI, Middlesbrough/UK; ³ TWI, Cambridge/UK; ⁴ Solvionic, Toulouse/F; ⁵ TWI & University of Leicester, Cambridge/UK

22. Corrosion & Corrosion Protection of Drinking Water Systems

W 22.01	Study on the Corrosion Potential of Cast Iron: Effects of Sample Thickness and Type of Surface Exposure <u>H. Sala</u> ¹ ; M. Mulheron ² ¹ University of Surrey, Surrey/UK; ² University of Surrey, Guildford/UK
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23. Corrosion of Archaeological and Historical Artefacts

W 23.01	Environment-friendly treatment of rusted steel for the conservation of historical heritage E. Mielgo ¹ ; O. Conejero ¹ ; A. Barberena ² ; <u>M. Prado</u> ¹ ¹ IDONIAL Technology Centre, Avilés/E; ² ESAPA, Avilés/E
W 23.02	Musical instruments in Museums – a challenge in metal conservation <u>V. de Bruyn-Ouboter</u> ¹ ; A. Erbe ² ; E. Flø Gustad ³ ¹ Ringve Music Museum – Rockheim (Museums in South Trøndelag) / Norwegian University of Science and Technology (NTNU), Trondheim/N; ² Norwegian University of Science and Technology (NTNU), Trondheim/N; ³ Norwegian University of Science and Technology (NTNU), Trondheim/N

24. Corrosion Control in Aerospace

W 24.01	Assessment of Pitting Corrosion in Anodized 2xxx Aluminum Alloys <u>J. Araujo</u> ¹ ; I. Costa ¹ ; J. Chen ² ; X. Zhou ² ¹ University of São Paulo, São Paulo /BR; ² The University of Manchester, Manchester/UK
W 24.02	Corrosion development in hybrid joins in C5 environment using advanced FEM modeling <u>K. Potopalska</u> ¹ ; D. Höche ¹ ; M. Zheludkevich ¹ ¹ Helmholtz-Zentrum Hereon, Geesthacht/D
W 24.03	Effect of diatomite surface modification on the loading and release of organic corrosion inhibitors from anti-corrosive coatings <u>J. Zhao</u> ¹ ; D. Na ¹ ; S. Garcia ¹ ¹ Delft University of Technology, Delft/NL
W 24.04	Influence of Surface Roughness and Post-Processing on the Corrosion Properties of additive manufacturing AlSi7Mg Alloys Produced by LPBF <u>S. Mercier</u> ¹ ¹ ONERA, the French Aerospace Lab, Chatillon/F
W 24.05	Effect of Be addition on the microstructure morphology and corrosion behavior of an Al-Cu aeronautical alloy M. Oliveira ¹ ; T. Vida ¹ ; N. Cheung ² ; A. Garcia ² ; <u>C. Cardoso de Brito</u> ¹ ¹ São Paulo State University, São João da Boa Vista/BR; ² University of Campinas, Campinas/BR
W 24.06	Environmental assisted cracking of friction stir welded UNS S32750 super duplex stainless steel in chloride media <u>A. ESSAMPALLY</u> ¹ ; R. V.S ² ¹ Indian Institute of Technology Bombay, MUMBAI/IND; ² Indian Institute of Technology Bombay, Mumbai/IND

26. CO₂-Corrosion in Industrial Applications

W 26.01	Corrosion behavior of pipeline materials under the supercritical condition of CO₂ with the addition of H₂O <u>M. Seo</u> ¹ ¹ Hyundai-steel, Dangjin-si/ROK
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27. Atmospheric Corrosion

W 27.02	<p>Stainless steel selection in specific environments <u>T. Córdoba</u>¹; V. Matres¹ ¹ Acerinox Europa S.A.U., Palmones (Los Barrios)/E</p>
W 27.03	<p>Prediction of corrosion product thickness by stochastic method <u>M. Vacek</u>¹; V. Krivy¹; P. Konecny¹; M. Kubzova¹ ¹ Faculty of Civil Engineering, VSB – Technical University of Ostrava, Ostrava – Poruba/CZ</p>
W 27.04	<p>Study of cerium oxidation mechanisms <u>C. Thomas</u>¹; I. Popa²; B. Ravat³; L. Jolly³; B. Oudot³ ¹ CEA Valduc/University of Bourgogne, Dijon/F; ² University of Bourgogne, Dijon/F; ³ CEA Valduc, Is sur Tille/F</p>
W 27.05	<p>Electrochemical characterization of patinated bronzes exposed to outdoor atmosphere <u>D. Mikic</u>¹; A. Kapitanović¹; H. Otmačić Ćurković¹ ¹ Faculty of Chemical Engineering and Technology, University of Zagreb, Zagreb/HR</p>
W 27.06	<p>Effect of artificial patination on Atmospheric Corrosion of Weathering Steel and Bronze <u>I. Bera</u>¹ ¹ University of Zagreb, Faculty of Chemical Engineering and Technology, Zagreb/HR</p>
W 27.07	<p>Identification of Critical Details of Weathering Steel Bridges <u>K. Kreislova</u>¹; M. Vlachova¹; J. Mlcoch²; M. Sykora²; M. Vacek³ ¹ SVUOM Ltd., Prague/CZ; ² CVUT in Prague, Prague/CZ; ³ VSB-TU, Ostrava/CZ</p>
W 27.08	<p>Influence of phosphonic acid monolayers on atmospheric corrosion of Al2024-T3 under outdoor conditions <u>T. Prüßner</u>¹; G. Grundmeier¹; P. Vieth¹; L. Ruhm¹; J. Löseke¹; Y. He¹ ¹ Paderborn University, Paderborn/D</p>
W 27.09	<p>Challenges in assessing atmospheric corrosion performance of anticorrosive coatings with accelerated cyclic corrosion tests <u>M. Saeedikhani</u>¹; A. Somers² ¹ Deakin University, Melbourne/AUS; ² Deakin University, Melbourne/AUS</p>

28. Corrosion in Green & Low Carbon Energy Technologies (TF)

W 28.01	<p>Wet CO-CO₂ Stress Corrosion Cracking in CCS Pipelines <u>M. Gonuguntla Suryanarayana</u>¹ ¹ , Bangalore/IND</p>
W 28.02	<p>Effect of pure ammonia gas on surface behavior of stainless steel and Ni base alloys above 500 degC <u>S. Lee</u>¹; J. Shin²; K. Koo²; Y. Park²; U. Jung² ¹ Samsung Engineering Co. LTD, Kyounggido/ROK; ² Korea Institute of Energy Research(KIER), Daejeon/ROK</p>
W 28.03	<p>Influence of laser beam welding related to corrosion of 316L stainless steel <u>O. Thimm</u>¹; I. Alebiosu¹; S. Brimaud¹ ¹ Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Ulm/D</p>

29. Corrosion of medical implants and devices (TF)

W 29.01	Degradation of 14etroleum14ized zinc biomaterials in advanced in vivo models D. Mil-Homens ¹ ; C. Santos ² ; M. Montemor ¹ ; <u>M. Alves</u> ¹ ¹ Instituto Superior Técnico, Lisbon/P; ² Instituto Politécnico de Setúbal, Setúbal/P
W 29.02	ELECTROCHEMICAL BIODEGRADABLE BEHAVIOUR AND SURFACE TREATMENT OF MAGNESIUM ALLOY ZK60 <u>V. Obertova</u> ¹ ; V. Knap ¹ ; M. Štrbák ¹ ; D. Kajánek ¹ ; B. Hadzima ¹ ¹ University of Žilina, Žilina/SK
W 29.03	Characterization of the microstructure and corrosion behavior of electrodeposited FeMn films for bioabsorbable implants applications A. Davila Gabbardo ¹ ; J. Zoppas Ferreira ² ; <u>I. Costa</u> ¹ ¹ IPEN, São Paulo/BR; ² UFRGS, Porto Alegre/BR
W 29.05	Effect of patient factors on the corrosion properties of biomedical implants <u>S. Nikpour</u> ¹ ¹ Western University, London/CDN

1. Joint Session: Corrosion and Corrosion Protection of Additive Manufactured Metals

J 1.01	Corrosion resistance of additively manufactured high strength aluminum alloys <u>J. Lindén</u> ¹ ; C. Linder ² ; B. Mehta ³ ; K. Andersson ¹ ; L. Nyborg ³ ¹ RISE Research Institutes of Sweden, Borås/S; ² RISE Research Institutes of Sweden, Kista/S; ³ Chalmers University of Technology, Gothenburg/S
J 1.02	Effect of build orientation on the corrosion behavior of additively manufactured 316L stainless steel <u>M. Yousif</u> ¹ ; K. Al-Athel ² ; A. Adesina ² ¹ KFUPM, Dhahran/SAR; ² King Fahd University of Petroleum & Minerals, Dhahran/SAR

2. Joint Session: Corrosion and Corrosion protection of additive Manufactured Metals for biomedical applications

J 2.01	3D Printed Stainless Steel Biomedical Implant Corrosion Resistance Study <u>O. Alabdulgader</u> ¹ ¹ Saudi Aramco, Dhahran /SAR
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3. Joint Session: Corrosion in the Chemical Process Industry

J 3.01	Corrosion of LD Converter Gas Pipe in Condensate Environment <u>J. PARK</u> ¹ ; S. Jung ¹ ; J. Rhee ¹ ¹ Hyundai Steel, Dangjin-si, Chungcheongnam-do/ROK
J 3.02	The impact of fluoride ion on the local corrosion of stainless steel in a phosphoric medium: An electrochemical investigation <u>H. HAJJAOU</u> ¹ ; Y. KERROUM ¹ ; A. GUENBOUR ¹ ; A. BELLAOUCHOU ¹ ; A. ZARROUK ¹ ; R. BOULIF ² ¹ Mohammed V University, Rabat/MA; ² OCP, El Jadida/MA

4. Joint Session: Coatings for High Temperatures

J 4.01	Hot corrosion behaviors of Inconel 718 superalloy and its aluminide coating under environments containing solid NaCl and water vapor <u>S. Geng</u> ¹ ; Q. Hu ¹ ; F. Wang ¹ ¹ Northeastern University, Shenyang/CN
J 4.02	Comparative study on high temperature oxidation behavior of deformable austempered ductile iron with and without protective Al rich coatings <u>O. Tsurtsunia</u> ¹ ; T. Kukava ² ; L. Nadaraia ² ; E. Kutelia ² ; L. Khundadze ² ¹ Georgian Technical University, Tbilisi/GE; ² Georgian Technical University, Tbilisi/GE

6. JS: Hydrogen and metallic materials

J 6.01	Effect of Pearlite on HAC Behavior of Pipeline Steel at Different Strain Rates <u>J. Liu</u> ¹ ; F. Huang ¹ ¹ Wuhan University of Science and technology, WUHAN/CN
J 6.02	High-Performance Copper-Base Alloys for a Safe Operation in Hydrogen Containing Environments <u>W. Budweiser</u> ¹ ; A. Frehn ¹ ; W. Budweiser ¹ ¹ Materion Brush GmbH, Stuttgart/D
J 6.03	Sensitization of Nickel-base Alloy 690 and the Role of Hydrogen during Oxidation by Water – An Experiment-guided First-principles Study <u>A. Meier de Andrade</u> ¹ ; C. Geers ¹ ; J. Chen ² ; I. Panas ¹ ¹ Chalmers University of Technology, Gothenburg/S; ² Chalmers University of Technology, Studsvik Nuclear AB, Gothenburg, Nyköping/S
J 6.05	Hydrogen permeation testing parameter exploration for high-entropy alloys <u>Y. Bilbao</u> ¹ ; E. Mardaras ² ; O. Gordo-Burgoa ³ ; I. Vicario ⁴ ; T. Guraya ¹ ¹ University of the Basque Country (UPV/EHU), Bilbao/E; ² Azterlan, Basque Research and Technology Alliance (BRTA), Durango/E; ³ Mondragon University, Arrasate-Mondragón/E; ⁴ Tecnalia, Basque Research and Technology Alliance (BRTA), Derio/E
J 6.06	Microstructural and corrosion characterization of different types of High Entropy Alloys <u>L. Castrillejo Robles</u> ¹ ; Y. Bilbao ¹ ; L. Armendariz ² ; I. Vicario ³ ; O. Gordo-Burgoa ⁴ ; E. Mardaras ⁵ ; T. Guraya ¹ ¹ University of the Basque country (UPV/EHU), Bilbao/E; ² University of the Basque Country (UPV/EHU, Bilbao/E; ³ TECNALIA, Basque Research and Technology Alliance (BRTA), Derio/E; ⁴ Mondragon University, Arrasate-Mondragón/E; ⁵ Azterlan, Basque Research and Technology Alliance (BRTA), Durango/E
J 6.07	Evaluation of hydrogen embrittlement of X65 pipeline steel in high pressure hydrogen gas using tubular samples <u>S. Rahimi</u> ¹ ; E. piperopoulos ¹ ; P. Bruzzaniti ¹ ; E. Proverbio ¹ ¹ University of Messina, Messina/I

7. Joint Session: Corrosion Sensoring, Monitoring and Prediction

J 7.01	Tackling corrosion under insulation by retrofitting pipelines with fiber optic sensors <u>t. van hoestenbergh</u> ¹ ; R. Guldentops ² ; N. De Vleeschouwer ¹ ; T. Lanckriet ¹ ¹ Fluves NV, Ghent/B; ² BASF, Antwerp/B
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8. Joint Session: Microbial Corrosion in Marine Environments

J 8.01	(Microbial) Corrosion and cathodic protection of steel sheet pilings in a harbor in The Netherlands N. Noël-Hermes ¹ ; M. Salta ¹ ¹ Endures B.V., Den Helder/NL
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10. Joint Session: Polymers in Organic Coatings

J 10.01	Insight into the interaction between chemical groups in polymer matrices and organic inhibitors T. Darikwa ¹ ; S. Garcia ¹ ; S. Picken ¹ ¹ Delft University of Technology (TU Delft), Delft/NL
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(Programme subject to change)

Sunday, 27 August 2023																	
Time/Hall	Hall 1	Hall 2	Hall 3	Hall 4	Hall 5	Hall 6	Hall 7	Hall 8	Hall 9	Hall 10	Hall 11	Hall 12	Hall 13	Grand Hall 2	Hall 15	Time/Hall	
09:00 - 13:00														Grand Hall 2	Studio 201 A/B	EFC STAC Meeting	09:00 - 13:00
13:00 - 14:00																Lunch for STAC & BOA Members	13:00 - 14:00
14:00 - 16:00																EFC BOA Meeting	14:00 - 16:00
16:00 - 17:00																WCO Meeting	16:00 - 17:00
17:00 - 18:00																	17:30 - 18:00
18:00 - 19:00																	18:00 - 19:00
19:00 - 20:30																	19:00 - 20:30

Monday, 28 August 2023																	
Time/Hall	Hall 1	Hall 2	Hall 3	Hall 4	Hall 5	Hall 6	Hall 7	Hall 8	Hall 9	Hall 10	Hall 11	Hall 12	Hall 13	Grand Hall 2	Hall 15	Time/Hall	
09:00 - 09:10	EUROCORR Opening Ceremony													Grand Hall 2	Studio 201 A/B		09:00 - 09:10
09:10 - 09:15	European Corrosion Medal Ceremony																09:10 - 09:15
09:15 - 09:45	European Corrosion Medal Lecture - M. Rohwerder																09:15 - 09:45
09:45 - 09:50	EFC Honorary Fellow Award Ceremony - W. Fürthner and S. Paterson																09:45 - 09:50
09:50 - 10:00	e-poster and technical information																09:50 - 10:00
10:00-10:35	COFFEE BREAK																10:00-10:35
10:35 - 11:20	Plenary Lecture - N. Hosking																10:35 - 11:20
11:20 - 12:05	Plenary Lecture - S. Lamaka																11:20 - 12:05
12:05 - 13:15	LUNCH																12:05 - 13:15
13:15 - 13:35	JS 6 Hydrogen and metallic materials (WP5 + WP17 + WP22 + WP25 + TF + WCO)																13:15 - 13:35
13:35 - 13:55	Mechanisms, Methods & Modelling																13:35 - 13:55
13:55 - 14:15	Atmospheric Corrosion																13:55 - 14:15
14:15 - 14:35	Organic Coatings																14:15 - 14:35
14:35 - 14:55	Nuclear Corrosion																14:35 - 14:55
14:55	Microbial Corrosion																14:55
15:00 - 15:20	Corrosion in the Refinery Industry																15:00 - 15:20
15:20 - 15:45	Reliability of Electronic Devices																15:20 - 15:45
15:45 - 16:05	Corrosion by Hot Gases																15:45 - 16:05
16:05 - 16:25	JS 9 Cathodic protection in marine environment (WP 9 + WP 16)																16:05 - 16:25
16:25 - 16:45	Corrosion in Aerospace																16:25 - 16:45
16:45 - 17:05	Session																16:45 - 17:05
17:05 - 17:25	Chairs																17:05 - 17:25
17:25 - 17:45	Chairs																17:25 - 17:45
17:45 - 18:15	Chairs																17:45 - 18:15
18:10 - 19:30	EXHIBITION OPENING AND POSTER PARTY - GRAND HALL 2																18:10 - 19:30

Tuesday, 29 August 2023																	
Time/Hall	Hall 1	Hall 2	Hall 3	Hall 4	Hall 5	Hall 6	Hall 7	Hall 8	Hall 9	Hall 10	Hall 11	Hall 12	Hall 13	Grand Hall 2	Hall 15	Time/Hall	
08:30 - 08:50	JS 6 Hydrogen and metallic materials (WP5 + WP17 + WP22 + WP25 + TF + WCO)																08:30 - 08:50
08:50 - 09:10	Mechanisms, Methods & Modelling																08:50 - 09:10
09:10 - 09:30	Atmospheric Corrosion																09:10 - 09:30
09:30 - 09:50	Organic Coatings																09:30 - 09:50
09:50 - 10:10	Nuclear Corrosion																09:50 - 10:10
10:10 - 10:40	Microbial Corrosion																10:10 - 10:40
10:40 - 11:00	Corrosion in Oil & Gas Production																10:40 - 11:00
11:00 - 11:20	JS 7 Corrosion Sensing, monitoring and prediction (WP6 + WP8 + WP25)																11:00 - 11:20
11:20 - 11:40	CO ₂ -Corrosion in Industrial Applications																11:20 - 11:40
11:40 - 12:00	Reliability of Electronic Devices																11:40 - 12:00
12:00 - 13:10	LUNCH																12:00 - 13:10
13:10 - 13:30	JS 6 Hydrogen and metallic materials (WP5 + WP17 + WP22 + WP25 + TF + WCO)																13:10 - 13:30
13:30 - 13:50	Mechanisms, Methods & Modelling																13:30 - 13:50
13:50 - 14:10	Automotive Corrosion																13:50 - 14:10
14:10 - 14:30	Metallic Coatings																14:10 - 14:30
14:30 - 14:40	Nuclear Corrosion																14:30 - 14:40
14:40 - 15:00	Microbial Corrosion																14:40 - 15:00
15:00 - 15:30	Corrosion in Oil & Gas Production																15:00 - 15:30
15:30 - 15:50	Mechanisms, Methods & Modelling																15:30 - 15:50
15:50 - 16:10	CO ₂ -Corrosion in Industrial Applications																15:50 - 16:10
16:10 - 16:30	Environment Sensitive Fracture																16:10 - 16:30
16:30 - 16:50	JS 4 Coatings for high temperature (WP3 + WP 14)																16:30 - 16:50
16:50 - 17:10	Corrosion of Medical Implants and Devices																16:50 - 17:10
17:10 - 17:20	Session																17:10 - 17:20
17:20 - 17:40	Chairs																17:20 - 17:40
17:40 - 18:10	Chairs																17:40 - 18:10
18:10 - 19:30	YOUNG EFC Meeting and Get together Party - The Arc																18:10 - 19:30

Wednesday, 30 August 2023																	
Time/Hall	Hall 1	Hall 2	Hall 3	Hall 4	Hall 5	Hall 6	Hall 7	Hall 8	Hall 9	Hall 10	Hall 11	Hall 12	Hall 13	Grand Hall 2	Hall 15	Time/Hall	
08:30 - 08:40	EUROCORR Young Scientist Grant													Grand Hall 2	Studio 201 A/B		08:30 - 08:40
08:40 - 08:45	Poster Prize and Travel Grant Winner Award																08:40 - 08:45
08:45 - 08:50	CEFRACOR Grand medal																08:45 - 08:50
08:50 - 09:20	Plenary lecture (Young EFC) - V. Skirsky																08:50 - 09:20
09:20 - 10:05	Plenary lecture - D. Zhang																09:20 - 10:05
10:05 - 10:35	Plenary lecture - S. Norager																10:05 - 10:35
10:35 - 11:10	COFFEE BREAK																10:35 - 11:10
11:10 - 11:30	JS 6 Hydrogen and metallic materials (WP5 + WP17 + WP22 + WP25 + TF + WCO)																11:10 - 11:30
11:30 - 11:50	Mechanisms, Methods & Modelling																11:30 - 11:50
11:50 - 12:10	Automotive Corrosion																11:50 - 12:10
12:10 - 12:30	Self-healing Coatings																12:10 - 12:30
12:30 - 13:40	Nuclear Corrosion																12:30 - 13:40
13:40 - 14:00	Corrosion of Steel in Concrete																13:40 - 14:00
14:00 - 14:20	Corrosion in Oil & Gas Production																14:00 - 14:20
14:20 - 14:40	Mechanisms, Methods & Modelling																14:20 - 14:40
14:40 - 15:00	Green & Low Carbon TF																14:40 - 15:00
15:00 - 15:20	JS 8 Microbial corrosion in marine environment (WP9 + WP10)																15:00 - 15:20
15:20 - 15:50	WS1 Additive Manufactured Metals																15:20 - 15:50
15:50 - 16:10	Tribocorrosion																15:50 - 16:10
16:10 - 16:30	Session																16:10 - 16:30
16:30 - 16:50	Chairs																16:30 - 16:50
16:50 - 17:10	Chairs																16:50 - 17:10
17:10 - 17:30	Chairs																17:10 - 17:30
17:30 - 17:50	Chairs																17:30 - 17:50
17:50 - 18:10	Chairs																17:50 - 18:10
18:10 - 00:00	CONGRESS DINNER - Autoworld																18:10 - 00:00

Thursday, 31 August 2023																	
Time/Hall	Hall 1	Hall 2	Hall 3	Hall 4	Hall 5	Hall 6	Hall 7	Hall 8	Hall 9	Hall 10	Hall 11	Hall 12	Hall 13	Grand Hall 2	Hall 15	Time/Hall	
08:40 - 08:45	EUROCORR Young Scientist Grant													Grand Hall 2	Studio 201 A/B		08:40 - 08:45
08:45 - 08:50	Poster Prize and Travel Grant Winner Award																08:45 - 08:50
08:50 - 09:20	Plenary lecture (Young EFC) - V. Skirsky																08:50 - 09:20
09:20 - 10:05	Plenary lecture - D. Zhang																09:20 - 10:05
10:05 - 10:35	Plenary lecture - S. Norager																10:05 - 10:35
10:35 - 11:10	COFFEE BREAK																10:35 - 11:10
11:10 - 11:30	JS 6 Hydrogen and metallic materials (WP5 + WP17 + WP22 + WP25 + TF + WCO)																11:10 - 11:30
11:30 - 11:50	Mechanisms, Methods & Modelling																11:30 - 11:50
11:50 - 12:10	Automotive Corrosion																11:50 - 12:10
12:10 - 12:30	Self-healing Coatings																12:10 - 12:30
12:30 - 13:40	Nuclear Corrosion																12:30 - 13:40
13:40 - 14:00	Corrosion of Steel in Concrete																13:40 - 14:00
14:00 - 14:20	Corrosion in Oil & Gas Production																14:00 - 14:20
14:20 - 14:40	Mechanisms, Methods & Modelling																14:20 - 14:40
14:40 - 15:00	Green & Low Carbon TF																14:40 - 15:00
15:00 - 15:20	JS 9 Cathodic protection in marine environment (WP9 + WP16)																15:00 - 15:20
15:20 - 15:50	WS1 Additive Manufactured Metals																15:20 - 15:50
15:50 - 16:10	Tribocorrosion																15:50 - 16:10
16:10 - 16:30	Session																16:10 - 16:30
16:30 - 16:50	Chairs																16:30 - 16:50
16:50 - 17:10	Chairs																16:50 - 17:10
17:10 - 17:30	Chairs																17:10 - 17:30
17:30 - 17:50	Chairs																17:30 - 17:50
17:50 - 18:10	Chairs																17:50 - 18:10
18:10 - 00:00	CONGRESS DINNER - Autoworld																18:10 - 00:00