

Program

Monday, 16 September, 2024

13:00 Opening Remark

13:30-15:10 **Oral Session 1**

Chair: Geraint Williams (Swansea University), Shinji Okazaki (Yokohama National University)

13:30-14:10

[1-01] **Review of early, mainly Cambridge, work investigating mechanism by which paints prevent corrosion and discussion of its relevance to today's anticorrosive coatings**

Douglas J Mills^a and Stuart B Lyon^b

^a*Department of Technology, University of Northampton*, ^b*Department of Materials, University of Manchester*

14:10-14:40

[1-02] **Nanostructural Heterogeneity and Degradation in Epoxy Barrier Coatings**

Suzanne Morsch and Stuart Lyon

Department of Materials, University of Manchester

14:40-15:10

[1-03] **Thermal aging and degradation of epoxy coatings at oxidized interfaces**

Naomi Farrer,^a Stuart Lyon,^a Suzanne Morsch,^a Doug Beaumont^b and William Edwards^b

^a*University of Manchester*, ^b*AkzoNobel*

15:10-15:40

Coffee Break

15:40-17:20 **Oral Session 2**

Chair: Geraint Williams (Swansea University), Kazuhiko Noda (Shibaura Institute of Technology)

15:40-16:20

[1-04] **Filiform corrosion on organic coated steel: mechanism and mitigation strategies**

Michele Fedel, Stefano Rossi, Flavio Deflorian, Luca Benedetti, Andrea Cristoforetti

Department of Industrial Engineering, University of Trento

16:20-17:00

[1-05] **Characterization of Organic Coatings with Additives of Natural Origin or Recycled Materials**

Stefano Rossi, Massimo Calovi, Luca Benedetti, Michele Fedel

Department of Industrial Engineering, University of Trento

17:00-17:30

[1-06] **Investigation of Coating Heterogeneity 'D and I-type' Conductions in Attached Epoxy-Amine Films**

Woraphan Intaphan and Stuart B. Lyon

Department of Materials, School of Natural Sciences, Faculty of Science and Engineering, The University of Manchester

17:30-

Welcome Session

Tuesday, 17 September, 2024

9:00-10:40 **Oral Session 3**

Chair: Douglas Mills (University of Northampton), Masatoshi Kubouchi (Tokyo Institute of Technology)

9:00-9:40

[2-01] Inhibition of corrosion-driven cathodic delamination of organic coated galvanized steel using polyphosphate based pigments

Geraint Williams, Chris Griffiths and Neil McMurray

Department of Materials Science and Engineering, Swansea University

9:40-10:10

[2-02] Environmentally Friendly and Energy Saving Water-Borne Coatings for Maintenance Work

Isamu Koganej,^a Hideki Matsuda^b

^a*Architectural and Protective Coatings Technical Dept., Kansai Paint Co.,Ltd.*, ^b*Technical Development Division, Kansai Paint Co.,Ltd.*

10:10-10:40

[2-02] Evaluation of the corrosion protection of organic-coated zinc-alloy galvanised steels using novel, environmentally-friendly corrosion inhibitor pigments

Gwynfor Callaghan,^a Sonny Ngo,^b Geraint Williams^a

^a*Department of Materials Science and Engineering, Swansea University*, ^b*Beckers industrial Coatings*

10:40-11:10

Coffee Break

11:10-12:40 **Oral Session 4**

Chair: Douglas Mills (University of Northampton), Makoto Chiba (National institute of technology, Asahikawa College)

11:10-11:40

[2-04] **The review of highly durable coating systems considering fluoropolymer topcoat performance**

Hiroyuki Tanabe,^a Shuhei Ochi,^b Kiyoshi Kasahara,^b Daisuke Sasahara^c

^a*Tokyo University of Science*, ^{b,c}*AGC Chemicals*

11:40-12:10

[2-05] **Effect of Metallic Coating Composition on Corrosion of Pre-painted Zn-11%Al-3%Mg-Si coated Steel Sheets**

Mie Matsumoto, Takehiro Takahashi and Kohei Ueda

Steel Research Lab., Nippon Steel

12:10-12:40

[2-06] **Organophosphate additives for improved adhesion and anticorrosive performance in coil coatings**

Kathleen Brook,^a Xiaorong Zhou,^a Niek Hijnen,^b Mercedes Castro Cabado^c

^a*University of Manchester*, ^{b,c}*AkzoNobel*

12:40-14:00

Lunch

14:00-15:40 **Oral Session 5**

Chair: Huichao Bi (Technical University of Denmark), Isamu Koganei (Kansai Paint)

14:00-14:40

[2-07] **Influence of halloysite nanotubes on the adhesion and corrosion protection of epoxy primer**

Thanh Hai Pham,^{a,b,c} Dinh Tran Kim Nguyen,^{b,c} Nguyen Nhi Tru^{b,c}

^a*Vietnam Institute for Tropical Technology and Environmental Protection (VITTEP)*, ^b*Ho Chi Minh City University of Technology (HCMUT)*, ^c*Vietnam National University Ho Chi Minh City (VNU-HCM)*

14:40-15:10

[2-08] Impedance behavior analysis of degradation of epoxy resin coating using ICM sensor

Yasuhiko Saijo,^a Jun Kobayashi,^a Tomoyasu Suzuki^a and Kengo Tomioka^b

^a*Syrinx Co., Ltd.*, ^b*Nippon Paint Co., Ltd.*

15:10-15:40

[2-09] Summary of recent work using electrochemical noise measurements to assess protection by coatings and effectiveness of inhibitors

Douglas Mills,^a and Tian Yang Lan^b

^a*University of Northampton*, ^b*DCVG company*

15:40-16:10

Coffee Break

16:10-17:00 Oral Session 6

Chair: Huichao Bi (Technical University of Denmark), Tomohiro Tanabe (Dai Nippon Toryo)

16:10-16:40

[2-10] Corrosion protection of substrate metal by formation of self-healing coating with capsules and stability of these capsules under high temperature condition

Makoto Chiba, and Rin Takada

National institute of technology, Asahikawa College

16:40-17:20

[2-11] Development of new surface layer for improvement of corrosion protection of Al materials –Combination of two layers-

Rin Takada, and Makoto Chiba

National Institute of Technology, Asahikawa College

17:10-18:30 **Poster Session**

[P-01] Hydrophobicity and Durability of Fluoropolymer/CNT Nanocomposite Coating

Tran Phuong Chien,^a Nguyen Van Dung,^a Nguyen Dinh Chinh,^a Nguyen Thi Bich Thuy,^b
Nguyen Nhi Tru^{c,d}

^a*Vietnam Institute for Tropical Technology & Environmental Protection (VITTEP)*, ^b*Faculty of Civil Engineering, University of Transport Technology (UTT)*, ^c*Faculty of Materials Technology, Ho Chi Minh City University of Technology (HCMUT)*, ^d*Vietnam National University Ho Chi Minh City (VNU-HCM)*

[P-02] Effects of various physicochemical factors on parameters of constant phase elements in electric equivalent circuit model for stainless-steel oxide film

Hikaru Shibuki, Shinji Okazaki

Yokohama National University

[P-03] Development of water-borne anti-corrosion paint technology

Takahiro Uji

Nippon Paint Co., Ltd.

[P-04] Research for accelerated corrosion resistance test methods has high correlation with outdoor exposure

Tomohiro Tanabe, Toshinori Matsui and Daigou Mizoguchi

Dai Nippon Toryo Co., Ltd.

[P-05] Evaluation of Coating Degradation under Insulation Conditions using XPS Depth Profiling Analysis

Yoshitaka Yamashita,^a Takehiro Toyoda,^b Yukinori Yanase,^b Ayano Yasui,^b Toshiyuki Sunaba,^b Hiroyuki Tanabe^a and Takeshi Kondo^a

^a*Tokyo University of Science*, ^b*INPEX Corporation*

[P-06] Synthesis of Imidazoline Derivatives for Application to Inhibitors for Oil Pipeline Environment

Minami Koike,^a Ayano Yasui,^b Takehiro Toyoda,^b Toshiyuki Sunaba,^b Hiroyuki Tanabe^a and Takeshi Kondo^a

^a*Tokyo University of Science*, ^b*INPEX Corporation*

[P-07] Evaluation of Atmospheric Corrosion of Steels and Coated Steels by pH Measurement

Yoshiya Sugimoto,^a Haruka Shiratori,^a Mitsutoshi Matsumori,^a Yuta Yagi,^b Hideki Katayama,^c and Kazuhiko Noda^a

^a*Shibaura Institute of Technology*, ^b*Nakabohtec Corrosion Protecting Co., Ltd*, ^c*National Institute for Materials Science*

[P-08] Corrosion Protection Effect of Steel Materials by Zinc Rich Paint

Leonardo Hashitani the Third,^a Yutaka Negishi,^a Junqing Bao,^a Keigo Hatta,^a Yuta Yagi,^b and Kazuhiko Noda^a

^a*Shibaura Institute of Technology*, ^b*Nakabohtec Corrosion Protecting Co., Ltd*

Wednesday, 18 September, 2024

9:00-10:40 **Oral Session 7**

Chair: Michele Fedel (University of Trento), Toshiyuki Sunaba (INPEX)

9:00-9:40

[3-01] Challenging ISO 12944: Assessing the Real-World Validity of Cyclic Ageing Tests via Non-Destructive Evaluation of Rust Creep and Coating Degradation

Huichao Bi, Shu Li, Claus Erik Weinell, Kim Dam-Johansen

Technical University of Denmark

9:40-10:10

[3-02] Under-film Corrosion of Heavy-duty Painted Steel in Different Exposure Tests

Nobuaki Yoshioka, Keiichi Nakajima, Miku Goto and Hideyuki Taguchi

Nihon Parkerizing Co., Ltd

10:10-10:40

[3-03] Delamination of thermally sprayed ZnAl15/organic duplex coating systems on structural steel for offshore wind applications

Ziyou Li,^a Huichao Bi,^a Sverrir Gunnarsson,^b Claus Erik Weinell,^a and Kim Dam-Johansen^a

^a*Technical University of Denmark (DTU)*, ^b*Hempel A/S*

10:40-11:00

Coffee Break

11:00-12:00 **Oral Session 8**

Chair: Michele Fedel (University of Trento), Kengo Tomioka (Nippon Paint)

11:00-11:30

[3-04] **Initial deterioration behavior of painted steels for transmission towers under exposure tests and accelerated deterioration tests**

Mari Maeda, Kenji Yasumoto and Junichi Tani

Central Research Institute of Electric Power Industry

11:30-12:00

[3-05] **Evaluation of Internal Coatings for a TEG Surge Tank in a Natural Gas Dehydration Process**

Ayano Yasui,^a Takehiro Toyoda,^a Hirotaka Mizukami,^a Yukinori Yanase,^a Toshiyuki Sunaba,^a Hiroyuki Tanabe^b and Takeshi Kondo^b

^a*INPEX Corporation*, ^b*Tokyo University of Science*

12:00-13:00

Lunch

13:00-

Excursion/Banquet

Thursday, 19 September, 2024

9:00-10:30 **Oral Session 9**

Chair: Suzanne Morsch (University of Manchester), Takahide Ohsawa (Japan Paint Manufacturers Association (JPMA))

9:00-9:40

[4-01] Evaluation of epoxy lining materials' ability to prevent corrosion by organic acids

Masatoshi Kubouchi,^a Winarto Kurniawan,^b Saiko Aoki,^a Genki Nakamura,^c and Syuhei Komoto^c

^a*Tokyo Institute of Technology*, ^b*National Institute of Technology, Akita College*, ^c*All Japan Epoxy Construction in Waterworks and Sewage Association*

9:40-10:10

[4-02] Barrier property evaluation of inner lining for underground storage tank in temperature-controlled aqueous environment containing organic acids and chloride ion

Koya Tokutake

National Research Institute of Fire and Disaster

10:10-10:30

[4-03] Corrosion behavior of steel coated by Zinc Rich Paint

Junqing Bao,^a Leonardo Hashitani the Third,^a Keigo Hatta,^a Yuta Yagi,^b and Kazuhiko Noda,^a

^a*Shibaura Institute of Technology*, ^b*Nakabohtec Corrosion Protecting Co., Ltd*

10:30-11:00

Coffee Break

11:00-12:00 **Oral Session 10**

Chair: Suzanne Morsch (University of Manchester), Mari Maeda (Central Research Institute of Electric Power Industry)

11:00-11:30

[4-04] **Adsorption behavior of Isocyanate on carbon steel surface**

Masatsugu Murase

JFE Techno-Research Corp.

11:30-12:00

[4-05] **Comparison of ISO 12944 cyclic aging test and ISO 11997-1 cyclic corrosion test**

Shinji Hirukawa, Ryuta sekijima, and Astushi ishiduka

Japan Paint Inspection and Testing Association

12:00-12:10

Closing Remark