

Symposium L : Composite, Coating and Hetero-Materials

November 20 (Mon.), 2023

Session Title : Composite, Coating and Hetero-Materials 1

Time : 10:50 - 12:25, Nov. 20

Room # : 202B, 2F

Session Chair : Hisashi Sato, Nagoya Institute of Technology

Seungchan Cho, Korea Institute of Materials Science

10:50 – 11:20 Keynote K-L0353

Functionally graded carbon nanotube-reinforced aluminium matrix composites for air conditioning and heating application of electric vehicles

Hansang Kwon, Pukyong National University, Korea

11:20 – 11:40 Invited I-L0133

Fabrication of ceramic particulate reinforced metal matrix composites using casting process

Seungchan Cho, Korea Institute of Materials Science, Korea

11:40 – 11:55 O-L0347

Fabrication of dispersion strengthened Al-Y2O3 with bimodal grain size distribution via powder metallurgical route

Tatsuaki Sakamoto, Ehime University, Japan

11:55 – 12:10 O-L0839

High-performance titanium matrix composites fabricated by hot isostatic pressing

Shuai Wang, Harbin Institute of Technology, China

12:10 – 12:25 O-L0749

Microstructural and dry sliding wear behavior of particulate reinforced copper matrix composites fabricated by in situ casting process

Cunlei Zou, Dalian Jiaotong University, China

Session Title : Composite, Coating and Hetero-Materials 2

Time : 14:00 - 15:35, Nov. 20

Room # : 202B, 2F

Session Chair : Hansang Kwon, Pukyong National University

Seungchan Cho, Korea Institute of Materials Science

14:00 – 14:30 Keynote K-L1047

A Journey to Composite Tanks for Cryogenic Liquids

Garth Pearce, University of New South Wales, Australia

14:30 – 14:50 **Invited**

I-L1062

In situ synthesis of Al-AlN Composites by arc plasma-induced accelerated volume nitridation

Je In Lee, Pusan National University, Korea

14:50 – 15:05

O-L0907

Microstructure regulation and hot compression behaviour of network structured TiBw/Ti65 composites

Shaocong Xiong, Harbin Institute of Technology, China

15:05 – 15:20

O-L0888

Microstructure and properties of metal matrix composites prepared by accumulative roll-compositing

Qingsong Mei, Wuhan University, China

15:20 – 15:35

O-L0879

Wire filled tungsten argon arc welding of titanium matrix composites

Jie Zhang, Harbin Institute of Technology, China

Session Title : Composite, Coating and Hetero-Materials 3

Time : 16:00 -18:05, Nov. 20

Room # : 202B, 2F

Session Chair : Garth Pearce, University of New South Wales

Je In Lee, Pusan National University

16:00 – 16:20 **Invited**

I-L0672

Local Strain Distribution and Microstructure around Al₃Ti Platelet Particle in Al-Al₃Ti Composite

Hisashi Sato, Nagoya Institute of Technology, Japan

16:20 – 16:35

O-L1006

Improved mechanical properties of nacre-like (TiBw+TiB₂)/2024Al composites fabricated by freeze casting and T6 heat treatment

Jidong Zhang, Harbin Institute of Technology, China

16:35 – 16:50

O-L0463

Investigating the Effect of Processing Parameters on the Morphology and Properties of PA6/carbon Fiber Composites for Overmolding Applications

Gu-Hyeok Kang, Fraunhofer-Institut Für Chemische Technologie, Germany

16:50 – 17:05

O-L0913

Significantly Refined Microstructure of TiBw/TA15(Si) Composites by Single-Pass Hot Pressing

with Prior Heat-treatment

Rui Zhang, Harbin Institute of Technology, China

17:05 – 17:20

O-L0100

Deformation and aging behaviours of the single crystal Ni-Mn-Ga particles/silicone rubber towards magnetic field driven actuators

Wan-Ting CHIU, Tokyo Institute of Technology, Japan

17:20 – 17:35

O-L0050

Study on interface bonding and wear resistance of rare earth doped WC Iron Matrix Composites

Wengao Zhang, Kunming University of Science and Technology, China

17:35 – 17:50

O-L0645

Investigation on the elevated temperature tribological behavior of in-situ sub-micron/nano magnesium matrix composite

Sushanta Kumar Sahoo, Indian Institute of Technology Madras, India

17:50 – 18:05

O-L1002

Effect of SiCnp addition on microstructure and mechanical properties of graphene nanosheet (GNS) reinforced aluminum composites

Jiajia Zhang, Harbin Institute of Technology, China

November 21 (Tue.), 2023

Session Title : Composite, Coating and Hetero-Materials 4

Time : 10:50 - 12:20, Nov. 21

Room # : 202B, 2F

Session Chair : Eun Seong KIM, Pohang University of Science and Technology

AVEEK MOHANTY, Indian Institute of Technology Madras

10:50 – 11:10

Invited

I-L0796

Grain Refinement of Cast and Additively Manufactured Aluminum by Heterogeneous Nucleation Site Particles

Yoshimi Watanabe, Nagoya Institute of Technology, Japan

11:10 – 11:25

O-L0249

A new evaluation method of martensitic transformation behavior using compositionally graded shape memory alloys

Hideki Hosoda, Tokyo Institute of Technology, Japan

11:25 – 11:40 **O-L0303**
Microstructures and Properties of Diffusion Layer Formed at Laminated Interface of Alumina-Particle Dispersed Magnesium Laminated Compacts Fabricated by MM/SPS Method

Shigehiro Kawamori, Tamagawa University, Japan

11:40 – 11:55 **O-L0715**
Graphene-coated Ni wires for structural application: Mechanical enhancement and its strengthening mechanism

Wonjune Choi, Arizona State University, USA

11:55 – 12:10 **O-L0805**
Excellent CMAS resistance of a newly developed equiatomic high entropy (Dy_{1/4}Ho_{1/4}Tm_{1/4}Yb_{1/4})₂Si₂O₇ ceramic pyrosilicate

Faisal Nazeer, China University of Mining and Technology, Xuzhou, China

12:10 – 12:30 **Invited** **I-L1049**
Design and Toughening of High-performance Alloy Coatings and Heat-resistant Aluminum Alloys based on Theoretical Calculations

Liu Sida, Xi'an Jiaotong University, China

Session Title : Composite, Coating and Hetero-Materials 5

Time : 14:00 - 15:30, Nov. 21

Room # : 202B, 2F

Session Chair : Caroline Sunyong Lee, Hanyang University

Yoshimi Watanabe, Nagoya Institute of Technology

14:00 – 14:30 **Keynote** **K-L0310**

The coming direction of functionally graded materials

Yoshikazu Shinohara, NIMS, Japan

14:30 – 14:45 **O-L0984**
Impact of post-treatment on the microstructural behaviour of a Co-based alloy coating developed on Inconel-718 using HVOF technique.

AVEEK MOHANTY, Indian Institute of Technology Madras, India

14:45 – 15:00 **O-L1043**
Modelling SiC heating supports based on microstructural features

JaeHyung Cho, Korea Institute of Materials Science, Korea

15:00 – 15:15 **O-L0393**
Metal-phenolic networks doped all-polybenzoxazine superhydrophobic coatings to boost corrosion and biofouling resistance via integrated design

Xiangkang Cao, Huazhong University of Science and Technology, China

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Time : 16:00 -17:55, Nov. 21

Room # : 202B, 2F

Session Chair : Caroline Sunyong Lee, Hanyang University

Yoshimi Watanabe, Nagoya Institute of Technology

16:00 – 16:30 **Keynote** **K-L1040**

Nanofibre Membranes for Energy Harvesting -Applications in Triboelectric Nanogenerators

Jin Zhang, University of New South Wales, Australia

16:30 – 16:50 **Invited** **I-L1094**

A study on the development of multi-component alloys for the nanocomposite coatings and their properties

Kyoung Il Moon, Korea Institute of Industrial Technology, Korea

16:50 – 17:10 **Invited** **I-L1156**

Multifunctional Nanoparticle Sensor Fabricated by Solvent-free Aerodynamically Focused Nanoparticle Printing

Sung-Hoon Ahn, Seoul National University, Korea

17:10 – 17:25 **O-L0063**

Effect of granule shape parameters on the melting behaviors of mold powder

Fuhang Chen, Chongqing University, China

17:25 – 17:40 **O-L0089**

Shear deformation behavior of heterostructured materials

GangHee Gu, Pohang University of Science and Technology, Korea

17:40 – 17:55 **O-L0132**

Microstructural Evolution and Annealing Behavior of Cr-Coated Zry4 Prepared by Pulsed Laser Deposition

Bo LI, The University of Tokyo, Japan

November 22 (Wed.), 2023

Session Title : Composite, Coating and Hetero-Materials 7

Time : 10:50 -12:30, Nov. 22

Room # : 202B, 2F

Session Chair : Elizabeth Kyriakou L, University of Technology Sydney
Soo-Hyun Joo, Dankook University

10:50 – 11:20 **Keynote** **K-L0247**

Biofunctionalization of Titanium by Surface Treatments

Takao Hanawa, Tokyo Medical and Dental University, Japan

11:20 – 11:40 **Invited** **I-L0104**

Microstructure and specific properties of heterogeneous-nanostructured stainless steel and copper alloys fabricated by heavy cold rolling

Hiroshi Miura, Toyohashi University of Technology, Japan

11:40 – 12:00 **Invited** **I-L0661**

Formation of an onion-like two-phase structure in refractory-metal based alloys

Seiji Miura, Hokkaido University, Japan

12:00 – 12:15 **O-L0055**

Effect of quenching temperature on microstructure and properties of a stainless clad steel plate 316L/Q500 for bridge structure

Fan Zhen, Shagang Group, China

12:15 – 12:30 **O-L0137**

Deformation behavior of heavily cold-rolled duplex stainless steel with and without aging

Chihiro WATANABE, Kanazwa University, Japan

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Time : 14:00 - 15:25, Nov. 22

Room # : 202B, 2F

Session Chair : Mingfang Qian, Harbin Institute of Technology,
Qi An, Harbin Institute of Technology

14:00 – 14:30 **Keynote** **K-L0983**

Balanced strength-ductility match in GNPs/Al composites

Xuexi Zhang, Harbin Institute of Technology, China

14:30 – 14:50 **Invited** **I-L1140**

Effects of 3D Reinforcement using Metal Filaments on the Toughness and Conductivity of Fibre-reinforced Composites

Raj Ladani, RMIT University, Australia

14:50 – 15:05 **O-L0191**

Effects of Initial Texture on the Microstructures and Mechanical Properties of a Cold-rolled

Cu-38Zn Alloy

Yanshuo Li, Kanazawa University, Japan

15:05 – 15:20

O-L0217

Effect Of FeGa₃ On The Wear Of Ultra High Carbon Steel In Atmospheric Environment

ROONIE PROTASIUS, School of Engineering, Kyushu University, Japan

15:10 – 15:25

O-L0253

Quantitative evaluation of stress/magnetic field-induced strains of the Ni-Mn-Ga microparticles driving actuation of laminated composites

DongKeun Han, Tokyo Institute of Technology, Japan

Session Title : Composite, Coating and Hetero-Materials 9

Time : 16:00 -17:05, Nov. 22

Room # : 202B, 2F

Session Chair : Raj Ladani, RMIT University

Xuexi Zhang, Harbin Institute Of Technology

16:00 – 16:20

Invited

I-L0968

Graphene Reinforced Aluminum Composites Prepared by Drawing

Mingfang Qian, Harbin Institute Of Technology, China

16:20 – 16:40

Invited

I-L0315

Refined Microstructures and Enhanced Strength of in-situ TiBw/Ti-6.5Al-2.5Zr-1Mo-1V-0.5Si Composites by Selective Laser Melting

Qi An, Harbin Institute of Technology, China

16:40 – 16:55

O-L0390

Fatigue-resistant elastocaloric effect in hypoeutectic TiNi₅₈ alloy with heterogeneous microstructure

Qianglong Liang, Xi'an Jiaotong University, China

16:55 – 17:10

O-L0488

Wear behaviour of 3d interconnected immiscible Mg-Fe₈₀Cr₂₀ composites synthesized by liquid metal dealloying

Soo-Hyun Joo, Dankook University, Korea

17:10 – 17:25

O-L0655

Speeds of Stacked Layers during Cold Roll Bonding

Hiroshi Utsunomiya, Osaka University, Japan