



PRICM 10

The 10th Pacific Rim International Conference on Advanced Materials and Processing

August 18-22, 2019 Xi'an, P. R. CHINA

Keynote and Invited Speakers

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The Chinese Society for Metals (CSM)

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The Chinese Society for Metals (CSM)

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Huibin Xu Beihang University

In-Country Technical Representatives

CSM

Prof. Chengjia Shang, University of Science & Technology Beijing

Email: cjshang@ustb.edu.cn

JIM

Prof. Haruyuki Inui, Kyoto University

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KIM

Prof. Sung-Joon Kim, POSTECH

Email: sjkim1@postech.ac.kr

MA

Prof. Jian-Feng Nie, Monash University

Email: jianfeng.nie@monash.edu

TMS

Dr. George T. Gray III, Los Alamos National Lab

Email: rusty@lanl.gov

Symposium A: Advanced Steels and Processing

Organizers

CSM

Han DONG
Professor of Shanghai University
Zhigang YANG
Professor of Tsinghua University

JIM

Yoshitaka ADACHI
Professor of Nagoya University

KIM

Dong-Woo SUH
Professor of Pohang University of Science and Technology (POSTCEH)

MA

Christopher HUTCHINSON
Professor of Monash University

TMS

Amy CLARKE
Colorado School of Mines

Keynote Speakers

CSM

Prof. Matthias MILITZER (The University of British Columbia)

Paper Title: Modelling of Heat Affected Zone Microstructures in Advanced Line Pipe Steels

Prof. Zhaoping LV (University of Science and Technology Beijing)

Prof. Wenzheng ZHANG (Tsinghua University)

Paper Title: Preferred Morphologies of Phases in Steels—An Integrated Approach

JIM

Prof. Tadashi FURUHARA (Tohoku University)

Paper Title: Carbon Partitioning during Ferrite and Bainite Transformations in Low-Alloy Steels

KIM

Prof. Young Kook LEE (Yonsei University)

Paper Title: Serrations in the tensile curve of C-bearing TWIP steel

Invited Speakers

CSM

Dr. Wenquan CAO (Central Iron & Steel Research Institute)

Prof. Xuejun JIN (Shanghai Jiao Tong University)

Paper Title: Effect of intermediate temperature annealing on the stability of retained austenite and mechanical properties of medium Mn-TRIP steel

Prof. Mingxin HUANG (The University of Hong Kong)

Dr. Sukyoung HWANG (Kyoto University)

Paper Title: Characterization of serration behaviors in 22Mn-0.6C steel with various grain sizes

Dr. Wei LI (Shanghai Jiao Tong University)

Paper Title: A self-decarburized layer on nanostructured bainitic with excellent resistance to hydrogen embrittlement

Prof. Feng LIU (Northwestern Polytechnical University)

Paper Title: Concurring Kinetics of Phase Transition and Grain Growth in Nanostructured Alloy

Dr. Qingdong LIU (Shanghai Jiao Tong University)

Paper Title: Development of Nanoprecipitate-Strengthened high-toughness Steels via Multistage Heat treatment

Prof. Haiwen LUO (University of Science and Technology Beijing)

Paper Title: Simulation on the evolution of inhibitors during high temperature annealing of grain-oriented silicon steel

Prof. Xishan XIE (University of Science and Technology Beijing)

Paper Title: A New Advanced Austenitic Heat-Resisting Steel with Nano-size Phase (MX, Cu-rich phase, Nb CrN) Precipitation Strengthening for 630-650°C USC Boiler Superheater / Reheater Application

Prof. Wei XU (Northeastern University)

Prof. Mei ZHANG (Shanghai University)

JIM

Prof. Goro MIYAMOTO (Tohoku University)

Paper Title: 3DAP analysis of solute segregation at ferrite or bainite / austenite interface

Prof. Shiro TORIZUKA (Hyogo Prefecture University)

Paper Title: Formation of ultrafine martensite from ultrafine ferrite structure with fine dispersed cementite particle including high Mn content

Dr. ZhiLei WANG (Nagoya University)

Paper Title: Data-driven properties-to-microstructure-to-processing inverse analysis for steels via machine learning

KIM

Prof. Jeongho HAN (Chungnam National University)

Paper Title: Unraveling the critical microstructures to determine the impact toughness of medium Mn steel

Prof. Yoon-Uk HEO (Pohang University of Science and Technology)

Paper Title: Design of microstructure for achieving high strength in an Fe-10Mn-3Al-0.2C based alloy

Dr. Joonoh MOON (Korea Institute of Materials Science)

Paper Title: Microstructure and mechanical properties of austenitic FeMnAlC lightweight steels and the effects of alloying elements

MA

Dr. Hao CHEN (Tsinghua University)

Paper Title: Fast-heating enables heterogeneous microstructure and upgraded mechanical properties of Q&P steels

Prof. Mingxin HUANG (University of Hong Kong)

Paper Title: Dislocation engineering for designing high strength steel with improved ductility

Dr. Nicole STANFORD (University of South Australia)

Paper Title: Precipitation and phase transformation of strip cast steel

TMS

Dr. B.Cem TASAN (Massachusetts Institute of Technology)

Paper Title: In-situ SEM characterization of wear and fracture in martensitic blades

Symposium B: High Temperature Structural Materials

Organizers

CSM

Qiang FENG

Professor of University of Science and Technology Beijing

Shengkai GONG

Professor of Beihang University

Jun ZHANG

Professor of Northwestern Polytechnical University

JIM

Hiroyuki YASUDA

Professor of Osaka University

KIM

Hyun Uk HONG

Professor of Changwon National University

MA

Damon KENT

Senior Lecturer of University of Sunshine Coast

TMS

Sammy TIN

Illinois Institute of Technology

Eric TALEFF

The University of Texas at Austin

Keynote Speakers

CSM

Prof. Xishan XIE (University of Science and Technology Beijing)

Paper Title: A New Ni-base Superalloy GH750 for 700°C Advanced Ultra-Supercritical Power Plant application

JIM

Prof. Masao TAKEYAMA (Tokyo Institute of Technology)

Paper Title: Design Approaches and Properties of Novel Wrought TiAl Alloys for Jet Engine Applications

KIM

Dr. Young-Soo YOO (Korea Institute of Materials Science)

Paper Title: Development of Ni Base Superalloys for Future Energy Plant Application

MA

Prof. Yinong LIU (University of Western Australia)

Paper Title: Microstructural evolutions of Ni-based superalloys during high temperature straining

TMS

Prof. Michael MILLS (Ohio State University)

Paper Title: New Insights Into Rate Limiting Deformation Processes in Ni-Base Superalloys

EUROPE

Prof. Catherine RAE (University of Cambridge)

Paper Title: The Effects of thermal cycling on the creep performance of a single crystal alloy

Invited Speakers

CSM

Prof. Zhongnan BI (Central Iron and Steel Research Institute)

Paper Title: Residual stress in precipitation hardening superalloys forgings

Prof. Lin LIU (Northwestern Polytechnical University)

Paper Title: Research status and progress of solidification structure and grain defects in nickel-based single crystal superalloys

Prof. Chengbo XIAO (Beijing Institute of Aeronautical Materials)

Paper Title: Materials Genome Initiative: Accelerated Ni-based single crystal superalloy design

Prof. Jian ZHANG (Institute of Metal Research)

Paper Title: Formation and evolution of casting defects in single crystal nickel based superalloys

Prof. Hongbo GUO (Beihang University)

Paper Title: β -NiAl based protective coatings for advanced single crystal superalloys

JIM

Dr. Hideyuki MURAKAMI (National Institute for Materials Science)

Paper Title: Application of Pt-Ir Paste Coating for Ni-based superalloys

Prof. Kyosuke YOSHIMI (Tohoku University)

Paper Title: Good Compatibility of Ultrahigh-Temperature Strength and Room-Temperature Fracture Toughness for MoSiBTiC Alloy

KIM

Prof. Pyuck-Pa CHOI (Korea Advanced Institute of Science and Technology)

Paper Title: Design of γ' -strengthened Co-base alloys based on multi-scale characterization

MA

Dr. Sophie PRIMIG (University of New South Wales)

Paper Title: Designing the microstructure of alloy 718

TMS

Prof. Rajarshi BANERJEE (University of North Texas)

Paper Title: Gamma - Gamma Prime based Precipitation Strengthenable High Entropy Alloys

Prof. Hamish L. FRASER (Ohio State University)

Paper Title: Hot Isostatic Pressing of Dual Ni-base Superalloys

Prof. Yunzhi WANG (OSU)

Paper Title: Precipitate-Mediated Dislocation Transformation in Superalloys

EUROPE

Prof. Jonathan CORMIER (Institut pprime-UPR CNRS 3346 - ISAE ENSMA)

Paper Title: Crack initiation mechanisms during VHCF of Ni-based single crystal superalloys

Prof. Hongbiao DONG (University of Leicester)

Paper Title: A Phenomenological Analyses of Freckling in Directional Solidification of Ni-base Alloys

Prof. Paraskevas KONTIS (Max-Planck-Institut für Eisenforschung GmbH)

Paper Title: The effect of segregation of solutes at crystal defects on the mechanical performance of superalloys

Prof. Jiehua LI (Montan Universität Leoben)

Paper Title: Microstructural evolution of Ni-based K403 alloy during thermal exposure

Symposium C: Light Metals and Alloys

Organizers

CSM

Fusheng PAN

Academician, Professor of Chongqing University

Baiqing XIONG

Professor of GRINM Group Co. Ltd.

Yongqing ZHAO

Professor of Northwest Institute for Nonferrous Metal Research

JIM

Yoshihito KAWAMURA

Professor of Kumamoto University

KIM

Young Min KIM

Principal Researcher of Korea Institute of Materials Science (KIMS)

MA

Jian-Feng NIE

Professor of Monash University

TMS

Diran APELIAN

Worcester Polytechnic Institute

Symposium C1: Light Metals and Alloys-Al

Keynote Speakers

CSM

Prof. Jianghua CHEN (Hunan University)

Paper Title: Electron microscopy for aluminum alloys as light-weight industry materials

Prof. Peidong WU (McMaster University)

Paper Title: Forming and Formability of Aluminium Sheet Alloys

JIM

Prof. Hirofumi INOUE (Osaka Prefectural University)

Paper Title: Prediction of Bendability and Deep Drawability Based on Orientation Distribution Function for Polycrystalline Aluminum Alloy Sheets

Invited Speakers

CSM

Dr. Yong JIANG (Central South University)

Paper Title: Formation thermodynamics and thermal stabilities of coherent L12 nano-precipitates in Al-RE alloys

Dr. Cheng LIU (Chinalco Materials Application Research Institute Co.,LTD)

Dr. Hai ZHANG (Soochow University)

JIM

Prof. Kenji MATSUDA (Toyama University)

Paper Title: Existence of two phases in Al-Zn-Mg alloys containing Cu

Prof. Shinji MURAISHI (Tokyo Institute of Technology)

Paper Title: Micromechanics based precipitation hardening analysis in aluminum alloys

KIM

Dr. Jae Hwang KIM (Korea Institute of Industrial Technology)

Paper Title: Role of nanoclusters in two-step and multi-step aging behavior in Al-Mg-Si alloys

MA

Dr. Malcolm COUPER (Monash University)

Paper Title: The relationship of solid solubility to the precipitation sequence in aluminium alloys

Dr. Timothy LANGAN (CleanTeQ)

Paper Title: Precipitation of Stable Sc-Containing Dispersoids in High Strength Aluminum Alloys

Dr. Sri LATHABAI (CSIRO)

Paper Title: Corrosion behaviour of Additively Manufactured AlSi10Mg Aluminium Alloy

TMS

Dr. Brajendra MISHRA (WPI-MPI)

Paper Title: In-Situ Processes for Production of Aluminum-Matrix Nanocomposites

Symposium C2: Light Metals and Alloys-Mg

Keynote Speakers

CSM

Prof. Andrej ATRENS (The University of Queensland)

Paper Title: Review of recent research on Mg alloys with low corrosion rates

JIM

Prof. Eiji ABE (University of Tokyo)

Paper Title: Kink Strengthening of LPSO and Mille-feuille Structures in Mg Alloys

KIM

Prof. Bong Sun YOU (Korea Institute of Materials Science)

Paper Title: Development of Corrosion Resistant Magnesium Alloys

Invited Speakers

CSM

Dr. Xiaobo CHEN (RMIT University)

Paper Title: Advanced Protective Coating Strategy for Mg Alloys

Dr. Xianhua CHEN (Chongqing University)

Paper Title: Research on high performance magnesium-based functional materials

Dr. Bin JIANG (Chongqing University)

Paper Title: High performance magnesium alloy plate and its novel process

Dr. Jing ZHANG (Chongqing University)

Paper Title: Solute effects of rare earth elements on deformation behaviors and mechanical properties of Mg

JIM

Prof. Daisuke ANDO (Tohoku University)

Paper Title: Age hardening effect and Superelasticity of Martensitic transformable Mg-Sc based alloys

Prof. Koji HAGIHARA (Osaka University)

Paper Title: Strengthening of Mg-based long-period stacking ordered (LPSO) phase alloys induced by the formation of deformation kink band

KIM

Dr. Jung Shin KANG (Korea Institute of Geoscience and Mineral Resources)

Paper Title: Development of a Magnesium Metal Production Process Using North Korean Magnesite

Dr. Joung Sik SUH (Korea Institute of Materials Science)

Paper Title: Improvement in room-temperature yield asymmetry of extruded AZXW9100 alloy by precipitation hardening

MA

Prof. Mark EASTON (RMIT)

Paper Title: Improved understanding of the microstructure and mechanical behaviour of Mg-Al-RE alloys

Prof. Yunchang XIN (Chongqing University)

Paper Title: Quantitative prediction of texture effect on Hall - Petch slope for magnesium alloys

Dr. Shiwei XU (China Baowu Steel Group Corporation Limited)

Paper Title: Development of room temperature reciprocally bendable magnesium sheets in china baowu

Symposium C3: Light Metals and Alloys-Ti and Others

Keynote Speakers

CSM

Prof. Yongqing ZHAO (Northwest Institute for Nonferrous Metal Research)

JIM

Dr. Kenichi MORI (Nippon Steel & Sumitomo Metal Corporation)

Paper Title: The effect of texture anisotropy on the dwell fatigue properties of Ti-6Al-4V forged bar

MA

Prof. Elena PERELOMA (University of Wollongong)

Paper Title: Uncovering deformation mechanisms in metastable beta titanium alloys.

Dr. Robert WILSON (CSIRO)

Paper Title: Titanium particulates to titanium products

Invited Speakers

CSM

Dr. Zhanli GUO (Sente Software Ltd.)

Paper Title: Modelling of Materials Flow at Elevated Temperatures

Dr. Qiaoyan SUN (Xi'an Jiaotong University)

Paper Title: From brittle to ductile fracture due to primary alpha phase in tensile deformation of Ti55531 alloy

Dr. Bin TANG (Northwestern Polytechnical University)

Paper Title: Hot forging design for TiAl alloys based on dynamic and metadynamic recrystallization investigations

Prof. Renlong XIN (Chongqing University)

Paper Title: Deformation compatibility in dual phase Ti alloys under compression

JIM

Dr. Satoshi EMURA (NIMS)

Paper Title: Heterogeneous microstructure in beta Type Ti-Mo alloy through thermomechanical treatment

Dr. Yoko YAMABE-MITARAI (NIMS)

Paper Title: Creep deformation of near-alpha Ti alloys

KIM

Dr. Tea-Sung (Terry) JUN (Incheon National University)

Paper Title: Understanding local deformation behaviour of titanium and its alloys using experimental micromechanics

MA

Prof. Mingxing ZHANG (The University of Queensland)

Paper Title: Novel approaches to surface engineering of Ti alloys

Symposium D: Advanced Processing of Materials

Organizers

CSM

Wanqi JIE

Professor of Northwestern Polytechnical University

Jianguo LI

Professor of Shanghai Jiaotong University

JIM

Hideyuki YASUDA

Professor of Kyoto University

KIM

Myoung-Gyu LEE

Professor of Seoul National University

MA

Huijun LI

Professor of University of Wollongong

TMS

Dan THOMA

University of Wisconsin- Madison

Keynote Speakers

KIM

Prof. Youngsuk KIM (Kyungpook National University)

Paper Title: Study of single point incremental forming and its formability

MA

Prof. John NORRISH (University of Wollongong)

Paper Title: Robotic Additive Manufacture using Wire Arc Welding Processes

Prof. Anna PARADOWSKA (ANSTO)

Paper Title: Neutron Scattering - Novel Non-destructive Tool for Characterization of Advanced Processing and Manufacturing

TMS

Prof. Glenn DAEHN (OSU)

Paper Title: Metamorphic Manufacturing - Forming High Quality Components on Demand

Invited Speakers

CSM

Prof. Hongbiao DONG (University of Leicester)

Paper Title: Using deep neural network with small dataset to predict solidification defects

KIM

Prof. Tae-Wan KU (Pusan National University)

Paper Title: A Combined Extrusion for a Drive Shaft with Spur Gear and Internal Spline : Process Design and Application

Prof. Eun-Ho LEE (Handong University)

Paper Title: Principle and Application of infrared local heating in sheet metal forming process

Prof. Myoung-Gyu LEE (Seoul National University)

Paper Title: ALE based finite element simulation of friction stir welding and its application to the prediction of joint strength

Dr. Jung-Han SONG (Korea Institute of Industrial Technology)

Paper Title: Dynamic Failure of Spot Welds under Combined Axial and Shear Loading Conditions

MA

Dr. Nazmul ALAM (CSIRO)

Paper title: Laser Metal Deposition Process and its Advances

Dr. Andrew ANG (Swinburne University)

Paper Title: Advanced surface coatings solutions for marine hydraulic components

Dr. Andrew KOSTRYZHEV (University of Wollongong)

Paper Title: Superior mechanical properties of microalloyed bainitic steels subjected to warm Deformation

Dr. Sophie PRIMIG (UNSW)

Paper Title: Advanced thermo-mechanical processing of HSLA steels with hierarchical Microstructures

Dr. Hongtao ZHU (University of Wollongong)

Paper Title: Novel surface functioning technology during hot strip rolling to improve corrosion-resistance of the steels

TMS

Dr. Nidal ABU-ZAHRA (University of Wisconsin-Milwaukee)

Paper Title: Value and Challenges in Industry/University Collaboration on Advanced Materials and Processing Technologies

Symposium E: Thin Films and Surface Engineering

Organizers

CSM

Chuang DONG

Professor of Dalian University of Technology

Hongbo GUO

Professor of Beihang University

JIM

Hiroshi MASUMOTO

Professor of Tohoku University

KIM

Ho Won JANG

Professor of Seoul National University

MA

Mingxing ZHANG

Professor of University of Queensland

Keynote Speakers

CSM

Dr. Jean-Marie DUBOIS (Institut Jean Lamour / Institut Jean Lamour)

Paper Title: Engineered surface properties of quasicrystalline materials

Prof. Dr. Robert VASSEN (Forschungszentrum Jülich)

Paper Title: Advanced ceramic coatings for high temperature use made by thermal spray techniques

KIM

Prof. Hyunjung SHIN (Sungkyunkwan University)

Paper Title: Atomic Layer Deposition Techniques: Electrocatalysts and Charge Transporting Layers

MA

Prof. Chris BERNDT (Swinburne University of Technology)

Paper Title: Thermal Spray Coatings: Relating Processing Conditions to Microstructural Evolution

Prof. Yue ZHAO (University of Wollongong)

Paper Title: Corrosion, wettability, and cytocompatibility of Ta and Ta-N films deposited on Ti6Al4V by cathodic arc deposition

Invited Speakers

CSM

Dr. Thierry GROSDIDIER (Université de Lorraine)

Paper Title: Surface severe plastic deformation for improved mechanical properties and optimum reactivity

Prof. Xueqiang CAO (Wuhan University of Technology)

Paper Title: New TBC materials and structures

Prof. Jinn CHU (National Taiwan University of Science and Technology)

Paper Title: Metallic Glass Coatings with Beneficial Properties for a Wide Range of Applications

JIM

Dr. Yang CAO (Tohoku University)

Paper Title: Tunneling Magneto-Dielectric (TMD) effect: Recent advances and future perspectives

KIM

Prof. Soo Young KIM (Chung Ang University)

Paper Title: Application of transition metal sulfides synthesized by $(\text{NH}_4)_2\text{MeS}_4$ precursors (Me: Metal)

Prof. Se Hun Kwon (Pusan University)

Paper Title: ALD enabled synthesis of nanostructured materials and its applications

Prof. Kibum KANG (KAIST)

Paper Title: Wafer-scale growth and assembly of 2D semiconductors

MA

Dr. Avi BENDAVID (CSIRO Manufacturing)

Paper Title: Plasma Deposition of Advanced Thin Films and Nanostructured Materials

Prof. Daniel FABIJANIC (Deakin University)

Paper Title: The thermal stability, oxidation behaviour and elevated temperature wear resistance of high entropy alloy claddings

Dr. Yingang LIU (The University of Queensland)

Paper Title: Morphology, structure and mechanical properties of titanium alloy processed via surface severe plastic deformation

Dr. Vladimir LUZIN (ANSTO)

Paper Title: Neutron Residual Stress Analysis of Single- and Two-Phase Cold-Sprayed Coatings

Dr. Qiyang TAN (The University of Queensland)

Paper Title: The oxide reinforcement effect of Be on the oxidation resistant Be-containing Mg alloys

Symposium F: Biomaterials

Organizers

CSM

Yufeng ZHENG

Professor of Peking University

Luning WANG

Professor of University of Science and Technology Beijing

JIM

Takayoshi NAKANO

Distinguished Professor of Osaka University

KIM

Seung-Kyun KANG

Professor of Korea Advanced Institute of Science and Technology (KAIST)

MA

Cuie WEN

Professor of RMIT University

TMS

Marc MEYERS

University of California, San Diego

Keynote Speakers

CSM

Prof. Yufeng ZHENG (Peking University)

Paper Title: Fundamentals of the theory of biodegradable metals

Prof. Luning WANG (University of Science and Technology Beijing)

JIM

Prof. Takao HANAWA (Tokyo Medical and Dental University)

Paper Title: Biofunctionalization of metals with development of new alloy, manufacturing process and surface modification

Prof. Takayuki NARUSHIMA (Tohoku University)

Paper Title: Preparation of bioceramic coatings on Ti and its alloys by dry processes and their antibacterial activity

KIM

Dr. Hyun Kwang SEOK (Korea Institute of Science and Technology (KIST))

Paper Title: Outlook on the Clinical Translation and Commercialization of Biodegradable Metals

MA

Prof. Nicolas VOELCKER (Monash University)

Paper Title: Ordered Silicon Nanowire Arrays: Opportunities for Biointerface Control

Prof. Yin XIAO (Queensland University of Technology)

Paper Title: Targeting early inflammatory response for the design of functional bone biomaterials

Invited Speakers

CSM

Dr. Xiaobo CHEN (RMIT University)

Paper Title: Osteoanabolic Implant Materials for Orthopedic Treatment

Prof. Yan LI (Beihang University)

Paper Title: Recent development of biomedical Ti-Zr-Nb shape memory alloys

Prof. Fuzeng REN (Southern University of Science and Technology)

Paper Title: Biofunctionalization of Metallic Implants by Synergistic Effects of Micro/Nano-Patterning and Surface Coating

Prof. Shuilin WU (Tianjin University)

Paper Title: Photo-inspired antibacterial biomaterials

Prof. Zhentao YU (Northwest Institute for Nonferrous Metal Research)

Paper Title: Surface Modification and Biomechanical Compatibility of Biomedical Titanium Alloy

Prof. Cuie WEN (RMIT University)

Paper Title: CP-Ti gyroid scaffolds manufactured by selective laser melting for bone implant Applications

Prof. Donghui ZHU (University of North Texas)

Paper Title: Engineering a Bioactive Coating on Zinc Metallics for Enhanced Biocompatibility and Antibacterial Property

JIM

Dr. Sachiko HIROMOTO (NIMS)

Paper Title: In vivo degradation behavior of hydroxyapatite-coated magnesium alloys for bone implant application

Prof. Takayoshi NAKANO (Osaka University)

Paper Title: Preferential orientation of collagen/apatite as a bone quality parameter and biomedical Implant design based on the bone tissue anisotropy

Prof. Naoyuki NOMURA (Tohoku University)

Paper Title: Microstructure and mechanical properties of low magnetic Zr-1Mo alloy for biomedical applications

Prof. Masato UEDA (Kansai University)

Paper Title: 2D Patterning of Cells on Titanium Dioxide by Light Irradiation

Prof. Pan WANG (Singapore Institute of Manufacturing Technology (SIMTech))

Paper Title: Dynamic precipitation softening in beta-titanium: phase stability and Al addition effects

Prof. Masaya YAMAMOTO (Tohoku University)

Paper Title: 3D tissue processing using stimuli-responsive biomaterials

KIM

Prof. Pil-Ryung CHA (Kookmin University)

Paper Title: Computational Design of Mg alloys with Minimal Galvanic Corrosion

Prof. Suk-Won HWANG (Korea University)

Paper Title: Transient Electronics

Dr. Myoung-Ryul OK (Korea Institute of Science and Technology (KIST))

Paper Title: Electrochemical Functionalization of Biometals: Realization of Tissue-regenerative and Cell-selective Fully Metallic Devices

MA

Prof. Andrej ATRENS (The University of Queensland)

Paper Title: Understanding Mg corrosion in vivo

Prof. Cyrille BOYER (UNSW)

Paper Title: Oxygen Tolerant RAFT Polymerisation: Application in the Design of Anti-Microbial Polymers

Prof. Yuncang LI (RMIT)

Paper Title: Mechanical properties and biocompatibility of β Ti₃₅Zr₂₈Nb alloy scaffolds manufactured using selective laser melting

Dr. Cynthia S. WONG (Queensland University of Technology)

Paper Title: The interplay between cells and multiscale 3D printed scaffolds

Prof. Lihai ZHANG (University of Melbourne)

Paper Title: Modelling bone fracture healing under the locking compression plate system

TMS

Dr. Po Yu CHEN (Tsing Hu University Taiwan)

Paper Title: Lightweight yet Tough Bio-inspired Cellular Materials: Multi-scale Modeling, Characterization, Mechanical Testing, and Optimization

Dr. Joanna McKittrick (University of California, San Diego)

Paper Title: Impact resistant natural polymer composites: Hooves and horns

Dr. David KISAILUS (University of California at Riverside)

Paper Title: Biologically Inspired Multi-Functional Composites

Symposium G: Smart and Magnetic Materials

Organizers

CSM

Shaoxiong ZHOU

Professor of Center Iron & Steel Research Institute

Chengbao JIANG

Professor of Beihang University

JIM

Satoshi SUGIMOTO

Professor of Tohoku University

KIM

Haein LIM

Professor of Sookmyung Women's University

MA

Sean LI

Professor of New South Wales

TMS

Bob SHULL

National Institute of Standards and Technology

Keynote Speakers

CSM

Prof. Yanglong HOU (Peking University)

Paper Title: Fabrication and Potential Applications of Magnetic Nanomaterials

Prof. Yang SUN (Institute of Physics, CAS)

JIM

Prof. Asaya FUJITA (AIST)

Paper Title: Toward realization of reliable high-performance magnetic refrigerants based on La(Fe,Si)₁₃ -variants

Prof. Yu SHIRATSUCHI (Osaka University)

Paper Title: Antiferromagnetic domain control by magnetoelectric effect

KIM

Prof. Sang-Im YOO (Seoul National University)

Paper Title: Current status and prospect of ceramic permanent magnets

MA

Prof. Kiyonori SUZUKI (Monash University)

Paper Title: Formation of nano-meter scale microstructures from binary amorphous precursors

Prof. Tom WU (UNSW)

Paper Title: Smart "Binary Materials" for Photodetection from Mid-Infrared, Visible, to X-ray

Invited Speakers

CSM

Prof. Yong JIANG (University of Science and Technology Beijing)

Paper Title: Spin-orbit-torque engineering in multiferroic heterostructure

Prof. Xiangyi ZHANG (Yanshan University)

Paper Title: Designing Hybrid Nanostructures Towards High Energy Density

Prof. Jinbo YANG (Peking University)

Paper Title: Novel soft magnetic properties of rare earth-transitional metal compounds at high frequency

Prof. Ping JIN (Shanghai Institute of Ceramics, Chinese Academy of Sciences)

Paper Title: Smart windows: state-of-art and outlook

Prof. Zhiqi LIU (Beihang University)

Paper Title: Electric-field control of magnetic materials

Prof. Tianyu MA (Xi'an Jiaotong University)

Paper Title: Diffusional phase transition in Fe-Ga alloys and the resultant novel properties

Prof. Dunhui WANG (Nanjing University)

Paper Title: Broadening refrigeration temperature regions in ferromagnetic shape memory alloys

Prof. Sen YANG (Xi'an Jiaotong University)

Paper Title: Recent progress of large magnetostriction induced by magnetic MPB and strain glass

Prof. Yongsheng YU (Harbin Institute of Technology)

Paper Title: Halide Ion-mediated Synthesis of L10-FePt Nanoparticles with Tunable Magnetic Properties

Prof. Zhenchen ZHONG (Jiangxi University of Science And Technology)

Paper Title: Special microstructure evolution and enhanced magnetic properties of Ce-Fe-B-based spark plasma sintered magnets with core-shell structure by NdCu Addition

Prof. Yandong WANG (University of Science and Technology)

Prof. Fengxia HU (Institute of Physics, CAS)

Asso. Prof. Enke LIU (Institute of Physics, CAS)

JIM

Dr. Masashi MATSUURA (Tohoku University)

Paper Title: Magnetic properties and microstructure of high coercivity Zn-bonded Sm-Fe-N magnets

Dr. Hiroaki SUKEGAWA (NIMS)

Paper Title: Lattice-matched magnetic tunnel junctions using a spinel barrier for advanced spintronics devices

Prof. Tadao TANABE (Tohoku University)

Paper Title: 2D Layered Semiconducting Materials and Terahertz Non-Destructive Inspection

Dr. Kentaro TOYOKI (JASRI)

Paper Title: Local demagnetization processes in the fractured surface of a Nd-Fe-B sintered magnet: A soft X-ray magnetic circular dichroism spectromicroscopy study

KIM

Dr. Chul-Jin CHOI (Korea Institute of Materials Science)

Paper Title: Fabrication of rare earth free new Mn based permanent magnetic materials

MA

Prof. Hong YANG (UWA)

Paper Title: Generating large elastic strains in functional metallic thin films by a phase transforming substrate

TMS

Dr. Jiayan LAW (Sevilla University)

Paper Title: Magnetocaloric studies to identify first-order phase transitions

Prof. Ichiro TAKEUCHI (University of Maryland at College Park)

Paper Title: Compression-based elastocaloric cooling: recent advances in materials and systems

Symposium H: Materials Characterisation and Evaluation

Organizers

CSM

Zhiwei SHAN

Professor of Xi'an Jiaotong University

Xiaodong HAN

Professor of Beijing University of Technology

JIM

Satoshi HATA

Professor of Kyushu University

Email: hata.satoshi.207@m.kyushu-u.ac.jp

KIM

Ju-Young KIM

Professor of Ulsan Institute of Science and Technology (UNIST)

MA

Jin ZOU

Professor of University of Queensland

TMS

Jennifer Carter

Case Western Reserve University

Keynote Speakers

CSM

Prof. Jianghua CHEN (Hunan University)

Paper Title: Atomic-resolution electron microscopy for aluminum alloys as high-performance industry materials

Prof. Xiuliang MA (Institute of Metal Research)

Paper Title: Unmasking chloride attack on the passive film of metals

JIM

Prof. Shunsuke MUTO (Nagoya University)

Paper Title: Mining physical/chemical properties from nano-scale areas using STEM spectroscopic methods and informatics techniques

Dr. Akira TANIYAMA (Nippon Steel & Sumitomo Metal Corporation)

Paper Title: Advanced material characterization techniques in development of steel products
-Current topics and future anticipation in industrial application-

KIM

Prof. Shi-Hoon CHOI (Sunchon National University)

Paper Title: Heterogeneous deformation behaviors and microstructure evolution of Mg alloys during mini-V-bending, Erichsen and in-situ tension tests

Prof. Heung Nam HAN (Seoul National University)

Paper Title: Analysis on Mechanical Softening of Nano-Ceramics induced by Electron-Beam Irradiation

MA

Prof. Dmitri GOLBERG (The Queensland University of Technology)

Paper Title: In situ Nanomaterial Property Studies in a High-Resolution Transmission Electron Microscope

Prof. Ian GENTLE (The University of Queensland)

Paper Title: Diffusion and stability in organic optoelectronic devices

Invited Speakers

CSM

Dr. Renchao CHE (Fudan University)

Paper Title: Phase transition of magnetic domain and microwave absorption

Dr. Lin GU (Institute of Physics CAS)

Paper Title: Picometer scale fine structure of materials and emergent properties in Noether's vision

Dr. Yong WANG (Zhejiang University)

Paper Title: In-situ TEM studies of nanocatalysts under gas environment

Dr. Degang XIE (Xi'an Jiaotong University)

Paper Title: Environmental attack in metals revealed by in situ ETEM

Dr. Sam YANG (CSIRO)

Paper Title: Non-destructive multi-scale characterization of material microstructure and properties

Dr. Qian YU (Zhejiang University)

Paper Title: Mechanical properties Characterization of Materials at Multiple Scale

Dr. Xiaoyan ZHONG (Qinghua University)

Paper Title: Atomic scale magnetic and structural imaging by achromatic electron microscopy

JIM

Dr. Ryo ISHIKAWA (The University of Tokyo)

Paper Title: Complex point defect analysis by atomic-resolution STEM

Dr. Takanori KIGUCHI (Tohoku University)

Paper Title: Nanostructure Analyses of Hafnia-Based Ferroelectric Thin Films by Aberration-Corrected Electron Microscopy

Dr. Goro MIYAMOTO (Tohoku University)

Paper Title: 3DAP analysis of solute segregation at ferrite or bainite / austenite interface

Dr. Kazuhisa SATO (Osaka University)

Paper Title: Synthesis of platinum silicide at platinum/silicon oxide interface by photon irradiation

Dr. Kosuke SUZUKI (Gunma University)

Paper Title: Quantum characterization for functional materials using high-energy X-ray Compton Scattering

Prof. Hiroyuki TODA (Kyushu University)

Paper Title: Recent Progress in High Resolution X-ray Tomography at High X-ray Energies

KIM

Prof. Jung Gu LEE (University of Ulsan)

Paper Title: Interpretation of stretch-flangeability using nanoindentation and in-situ fracture observation in dual-phase steels

Dr. Jun-Yun KANG (Korea Institute of Materials Science)

Paper Title: Application of EBSD on the Classification of Microconstituents in Advanced High-Strength Steels

MA

Prof. Xiaoxu HUANG (Technical University of Denmark)

Paper Title: 3D TEM characterization of heterogeneous precipitation at dislocations in an age-hardened Al-Cu-Mg alloy

Dr. Natasha WRIGHT (CSIRO)

Paper Title: Holistic Characterisation of Biomedical materials Produced by CSIRO' s Additive Manufacturing Centre

Dr. Rongkun ZHENG (University of Sydney)

Paper Title: 3D atomic-scale insights into advanced materials

Symposium I: Composite Materials

Organizers

CSM

Lin GENG

Professor of Harbin Institute of Technology

Boming ZHANG

Professor of Beihang University

JIM

Junya INOUE

Associate Professor of Tokyo University

KIM

Sang Bok LEE

Principal Researcher of Korea Institute of Materials Science (KIMS)

MA

Hao WANG

Professor of University of Southern Queensland

TMS

Rusty Gray III

Los Alamos National Lab

Keynote Speakers

CSM

Prof. Lujun HUANG (Harbin Institute of Technology)

Paper Title: Improvement of high temperature performance of titanium matrix composites by constructing hierarchical microstructure

Dr. Bo-Lv XIAO (Institute of Metal Research Chinese Academy of Sciences)

Paper Title: Effect of Cu/Mg ratio on mechanical properties and fracture behavior of SiCp/Al-Cu-Mg composites

KIM

Dr. Seungchan CHO (Korea Institute of Materials Science)

Paper Title: Characteristics of boron carbide reinforced aluminum matrix composites fabricated by casting process

Prof. HanSang KWON (Pukyung Unviersity)

Paper Title: Carbon nanotubes reinforced superprofile

Invited Speakers

CSM

Prof. Qiang GUO (Shanghai Jiao Tong University)

Paper Title: Interface-Dominated Mechanical Behavior in Graphene-Reinforced Metal Matrix Composites

Prof. En-Zuo LIU (Tianjin University)

Paper Title: The Modulation Mechanism of the Electron Distribution at Al₂O₃/Al Interface on the Interface Interaction and its Tensile Properties

Prof. Ping SHEN (Jilin University)

Paper Title: Wettability and reactivity between molten aluminum and carbon nanotubes

Prof. Xuexi ZHANG (Harbin Institute of Technology)

Paper Title: Graphene reinforced aluminum composite prepared by cold drawing

Symposium J: Amorphous Alloy and High Entropy Alloys

Organizers

CSM

Weihua WANG

Academician, Professor of The Institute of Physics, Chinese Academy of Sciences

Zhaoping LV

Professor of University of Science and Technology Beijing

JIM

Hidemi KATO

Professor of Tohoku University

KIM

Hojin RYU

Professor of Korea Advanced Institute of Science and Technology (KAIST)

MA

Michael FERRY

Professor of New South Wales

TMS

Evan MA

Johns Hopkins University

Keynote Speakers

JIM

Dr. Koichi TSUCHIYA (NIMS)

Paper Title: Microstructure Control in fcc high entropy alloys - SPD and Phase Transformation

Prof. Tohru YAMASAKI (University of Hyogo)

Paper Title: Plastic Deformation of Ni-based and Zr-based Alloys Having Amorphous and Nanocrystalline Dual Phase Structures

KIM

Prof. Byeong-Joo LEE (POSTECH)

Paper Title: Computational Design of High Entropy Alloys

MA

Prof. Irina BELOVA (University of Newcastle)

Paper Title: Self and Interdiffusion in High Entropy Alloys: What We Now Know

Dr. Xiaopeng LI (UNSW)

Paper Title: Additive manufacturing of metallic glasses and high entropy alloys: challenges and opportunities

Invited Speakers

CSM

Dr. Jinwoo HWANG (Ohio State University)

Paper Title: Correlating Structural Heterogeneity to Deformation in Metallic Glasses

Prof. Xidong HUI (University of Science And Technology Beijing)

Paper Title: Study on the correlation of the plasticity/toughness with the physical properties and structural heterogeneity for Zr-based bulk metallic glasses

Dr. Haibo KE (China Academy of Engineering Physics)

Paper Title: Structural heterogeneity in U-based metallic glasses

Prof. Lin LIU (Huazhong University of Science and Technology)

Paper Title: Manufacturing of Metallic Glasses

Dr. Scott Xingyuan MAO (University of Pittsburgh)

Paper Title: Single-element Metallic Glasses

Prof. Ye PAN (Southeast University)

Paper Title: Controlled microstructures and high photocatalytic efficiency of metal oxides synthesized by amorphous alloys

Prof. Baolong SHEN (Southeast University)

Paper Title: Preparation and Mechanical Properties of FeNiMoPCBSi Ferromagnetic Bulk Metallic Glasses

Prof. Shaolou WEI (Massachusetts Institute of Technology)

Paper Title: Reverse austenitic transformation in metastable high-entropy alloys

Dr. Yuan WU (University of Science and Technology Beijing)

Paper Title: Reinforcement of HEAs via stress-induced phase transformation

Prof. Yong YANG (City University of Hong Kong)

Paper Title: Large-area synthesis of freestanding ultra-thin films of complex alloys: from amorphous to high entropy alloys

JIM

Prof. Kenji AMIYA (Tohoku University)

Paper Title: Consolidation of the Ni-Cr-Nb-P-B metallic glass powder

Prof. Hiroshi OHTANI (Tohoku University)

Paper Title: Study on thermodynamic properties of high entropy alloys

Prof. Kazumasa SUGIYAMA (Tohoku University)

Paper Title: Middle Range Ordering of Zr-based Amorphous Alloys

Dr. Tomohito TSURU (Japan Atomic Energy Agency)

Paper Title: First-principles predictions of dislocation motion in high-entropy alloys

Prof. Takeshi WADA (Tohoku University)

Paper Title: Preparation high entropy bulk metallic glass with high glass forming ability

Prof. Kenta YAMANAKA (Tohoku University)

Paper Title: Additive manufacturing of an equiatomic AlCoCrFeNi high-entropy alloy with electron beam melting

KIM

Dr. Rajarshi BANERJEE (University of North Texas)

Paper Title: Competition Between L12 and B2/L21 Precipitation in FCC Based High Entropy Alloys: Multi-scale Microstructures and Tuning Mechanical Properties

Dr. Young-Sang NA (Korea Institute of Materials Science)

Paper Title: Effect of Co content on the mechanical properties of A2 and B2 phases in AlCoxCrFeNi high-entropy alloys

Prof. Ho Jin RYU (KAIST)

Paper Title: A Combinatorial Study of BCC High Entropy Alloys for Heat Resistant Applications

MA

Dr. Nima HAGHDADI (UNSW)

Paper Title: Material wear map for high entropy alloys

Dr. Amelia LIU (Monash University)

Paper Title: Order and structural variability in metallic glasses studied by electron nanodiffraction

Prof. Paul MUNROE (UNSW)

Paper Title: Effect of nitrogen content on the microstructure and mechanical and tribological properties of magnetron sputtered FeMnNiCoCr nitride coatings

Dr. Karl SHAMLAYE (Deakin University)

Paper Title: Mapping solid-solution space of the Co - Cr - Fe - Ni system via rapid alloy selection and synthesis methods

Prof. Guoqiang XIE (Harbin Institute Of Technology (Shenzhen))

Paper Title: Biocompatible Ti-based bulk metallic glasses and the composites

Dr. Jianqiang WANG (Institute of Metal Research, CAS)

Paper Title: Impact damage mode in Fe-based amorphous coatings

TMS

Dr. Easo GEORGE (ORNL)

Paper Title: Phase instabilities and mechanical properties of high- and medium-entropy alloys

Symposium K: Nanocrystalline and Ultrafine-Grained Materials

Organizers

CSM

Yue ZHANG

Professor of University of Science and Technology Beijing

Zhiyong TANG

Professor of National Center for Nanoscience and Technology

JIM

Nobuhiro TSUJI

Professor of Kyoto University

Email: nobuhiro-tsuji@mtl.kyoto-u.ac.jp

KIM

Jae-il JANG

Professor of Hanyang University

MA

Kenong XIA

Professor of University of Melbourne

TMS

Nathan Mara

University of Minnesota

Keynote Speakers

JIM

Prof. Kei AMEYAMA (Ritsumeikan University)

Paper Title: Harmonic Structure Design: Creation of Innovative High Performance Metallic Materials

Prof. Kenji HIGASHIDA (Sasebo College)

Paper Title: Effect of grain refinement due to severe plastic deformation on the brittle-to-ductile transition in a low carbon steel

KIM

Prof. Kyung-Tae PARK (Hanbat National University)

Paper Title: Dynamic Tensile Extrusion Behavior of OFHC Cu having Ultrafine Grains and Fine Grains

MA

Prof. Michael CORTIE (University of Technology Sydney)

Paper Title: Using dielectric function as a probe of microstructure in metastable nanocrystalline alloy films

Prof. Enrique LAVERNIA (University of California, Irvine)

Paper Title: Fabrication and Mechanical Behavior of Porous Cu via Chemical De-Alloying Method

Prof. Ruslan VALIEV (Ufa State Aviation Technical University)

Paper Title: Nanostructural design of metallic materials for superior properties

TMS

Dr. Irene BEYERLEIN (UCSB)

Paper Title: Understanding interface-driven mechanisms in biphase nanolaminates

Invited Speakers

JIM

Dr. Yoshiteru AOYAGI (Tohoku University)

Paper Title: Multiscale Simulation Based on Macroscopic Deformation Model Predicted by Microstructure Information of Ultrafine-grained Metals

Dr. Seiichiro II (National Institute for Materials Science (NIMS))

Paper Title: Direct observation of the dislocation interaction with grain boundary in Ultrafine-Grained IF steels by in-situ TEM technique

Dr. Yoshifumi IKOMA (Kyushu University)

Paper Title: Structural and functional properties of ultrafine-grained Si produced by high-pressure torsion

Dr. Daisuke TERADA (Chiba Institute of Technology)

Paper Title: Effect of severe plastic deformation and subsequent aging on strength-ductility balance of ultra-fine grained Al-Si-Mg alloy

Prof. Yoshikazu TODAKA (Toyohashi University of Science and Technology)

Paper Title: Phase transformation of Ti-Mg alloys by heavy plastic deformation

KIM

Prof. In-Chul CHOI (Kumoh National Institute of Technology)

Paper Title: Analysis on temperature- and rate-dependent nanomechanical behavior of nanocrystalline high-entropy alloys through high-temperature nanoindentation

Prof. Nokeun PARK (Yeungnam University)

Paper Title: Strength-ductility balance in an ultrafine-grained non-equiatomic Fe₅₀(CoCrMnNi)₅₀ medium-entropy alloy with a fully recrystallized microstructure

Dr. Jin-Yoo SUH (Korea Institute of Science and Technology (KIST))

Paper Title: Accumulated roll bonding of high Cr steel at elevated temperatures

MA

Dr. Yan HUANG (Brunel University)

Paper Title: The effect of solutes and second-phase particles on grain refinement during ECAP in Al alloys

Dr. Zakaria QUADIR (Curtain University)

Paper Title: Utilizing solute solution drag of Nb in Ni for fabricating multilayered structures in a sheet metal

Dr. Glenn SNEDDON (University of Sydney)

Paper Title: Investigating deformation in nanocrystalline materials using in-situ transmission Kikuchi diffraction

Dr. Ahmad ZAFARI (University of Melbourne)

Paper Title: Grain refinement in a metastable beta Ti alloy deformed to large strains at high strain rates

TMS

Dr. Eric HINTSALA (Bruker Nano Surfaces)

Paper Title: Evaluating microstructures and interfaces by high speed nanoindentation mapping

Dr. Jessica KROGSTAD (University Of Illinois, Urbana-Champaign)

Paper Title: Interplay between thermal stability and environmental tolerance in nanocrystalline alloys

Dr. Rajiv MISHRA (University of North Texas)

Paper Title: Hierarchical Microstructural Paradigms for Simultaneous Enhancement of Strength and Ductility

Symposium L: Computational Design and Simulation of Materials

Organizers

CSM

Tongyi ZHANG
Academician, Professor of Shanghai University
Zhimei SUN
Professor of Beihang University

JIM

Shigenobu OGATA
Professor of Osaka University

KIM

Byeong-Joo LEE
Professor of Pohang University of Science and Technology (POSTCEH)

MA

Salvy RUSSO
Professor of RMIT

TMS

Saryu FENSIN
Los Alamos National Lab
Michele MANUEL
University of Florida

Keynote Speakers

CSM

Prof. Jeffrey REIMERS (Shanghai University)

Paper Title: Van Der Waals Forces Control Both The Internal Chemical Structure Within Abp2X6 Monolayers And Ferroelectric/Antiferroelectric Interlayer Stacking

Prof. Tongyi ZHANG (Shanghai University)

Paper Title: Surface induced size-dependent thermodynamic properties of nanomaterials

KIM

Dr. Kwang-Ryeol LEE (Korea Institute of Science and Technology)

Paper Title: Materials Design by Computation

MA

Prof. Jared COLE (RMIT Univeristy)

Paper Title: The materials science of Josephson junctions: modelling their formation and electrical response from an atomistic point of view

Prof. Tiffany WALSH (Deakin University)

Paper Title: Molecular Modelling of Bio/Nano Interfaces: Materials for Bio-sensing, Energy, and Catalysis

Invited Speakers

CSM

Dr. Koushik BISWAS (Indian Institute Of Technology Kharagpur)

Paper Title: Density functional study on Energy Materials: Possibilities and Prediction

Prof. Ying CHEN (Tohoku University)

Paper Title: Fermi surface stability analysis in Fe-rich Si alloy

Dr. Alan LUO (The Ohio State University)

Paper Title: Integrated Computational Materials Engineering (ICME) for Lightweight Metallic Materials and Manufacturing

Prof. Riccardo MAZZARELLO (RWTH Aachen University)

Paper Title: First-principles investigation of ultrathin films of phase-change materials

Prof. Zhimei SUN (Beihang University)

Paper Title: Accelerating Phase-Change Materials Design by Integrating High-Throughput Ab Initio Calculations with Experiments

Prof. Yunjiang WANG (Institute of Mechanics, Chinese Academy of Sciences)

Paper Title: Understanding the collective diffusion of amorphous solids: an accelerated MD study

Dr. Hui YU (Institute of Metal Research, Chinese Academy of Sciences)

Paper Title: DFT calculations of generalized stacking fault energies and critical shear stresses of alpha-titanium alloys: On the plastic deformation anisotropy and dwell fatigue susceptibility

Prof. Wei ZHANG (Xi'an Jiaotong University)

Paper Title: Designing crystallization in phase-change materials for universal memory

KIM

Prof. Seungwu HAN (Seoul National University)

Paper Title: Data-driven material research based on first-principles calculations

Prof. Hyuck Mo LEE (Korea Advanced Institute of Science and Technology)

Paper Title: High Throughput Screening of Alloy Catalysts for PEMFC and Machine Learning Prediction of Chemisorption

Prof. Donghwa LEE (Pohang University of Science and Technology)

Paper Title: First-Principles-based Novel Materials Design for Pb-free hybrid Perovskite

MA

Prof. Mike FORD (University of Technology Sydney)

Paper Title: High Throughput Materials Discovery Using a Combination of Density Functional Theory and Artificial Intelligence

Dr. Marlies HANKEL (University of Queensland)

Paper Title: Layered two-dimensional materials as anode and cathode in metal ion batteries

Prof. Zhe LIU (University of Melbourne)

Paper Title: Computational Design of Two-Dimensional Smart Energy Conversion and Energy Storage Materials

Prof. Nikhil MEDHEKAR (Monash University)

Paper Title: In-Silico Investigation of Electrode Materials for Rechargeable Magnesium Batteries

Dr. Asaph WIDMER-COOPER (University of Sydney)

Paper Title: Colloidal Stability of Apolar Nanoparticles

TMS

Dr. Fadi ABDELJAWAD (Clemson)

Paper Title: Atomistic and Mesoscale Modeling of Sintering Kinetics: Application to Additive Manufacturing

Dr. Zi-Kui LIU (Penn state)

Paper Title: Computational Thermodynamics, Materials Genome, and Materials Design

Dr. Darby LUSCHER (LANL)

Paper Title: Continuum dislocation-density based models for the dynamic shock response of single-crystal and polycrystalline materials

Dr. Dallas TRINKLE (UIUC)

Paper Title: Computational approaches for mass transport calculations

Symposium M: Renewable Energy Materials and Nuclear Materials

Organizers

CSM

Min ZHU

Professor of South China University of Technology

Yuan DENG

Professor of Beihang University

Guanghong LU

Professor of Beihang University

JIM

Tetsuya UDA

Professor of Kyoto University

KIM

Taek-Soo KIM

Principal Researcher of Korea Institute of Industrial Technology (KITECH)

MA

Dmitri GOLBERG

Professor of Queensland University of Technology

TMS

Assel AITKALIYEVA

University of Florida

Keynote Speakers

CSM

Prof. Tiejun ZHU (Zhejiang University)

Paper Title: Defective Half-Heusler Thermoelectric Compounds

KIM

Prof. Jong-Hyeon LEE (Chungnam National University)

Paper Title: Alternative ways of producing group IV metals through a liquid copper-aided direct reduction process of oxide feedstocks

MA

Prof. Ying CHEN (Deakin University)

Paper Title: Solving Major Challenges in Lithium-Sulfur Batteries

Prof. Sasaki TAKAYOSHI (NIMS)

Paper Title: Construction of Superlattice-like Sandwich Structures from 2D Oxide and Hydroxide Nanosheets towards Superior Energy Storage and Conversion

Invited Speakers

CSM

Prof. Zhigang CHEN (University of Southern Queensland)

Paper Title: High-Performance Thermoelectric Materials: Progress and Applications

Prof. Shaojun GUO (Peking University)

Paper Title: Stain-Controlled Energy Electrocatalysis on Multimetallic Nanomaterials

Dr. Renzong HU (South China University of Technology)

Paper Title: Advanced Sn-based anode materials for Li storage

Dr. Chenyang LU (Xi'an Jiaotong University)

Paper Title: Enhancing irradiation tolerance in single-phase concentrated solid solution alloys by tuning chemical complexity

Prof. James STUBBINS (University Of Illinois At Urbana-Champaign)

Paper Title: Neutron Irradiation Behavior of Fe-Cr Alloys, from Model to Engineering Alloy Compositions

Prof. Xiaoqiu YE (China Academy of Engineering Physics)

Paper Title: In-situ investigation of hydrogen induced corrosion of titanium

Dr. Hongbo ZHOU (Beihang University)

Paper Title: Towards understanding the influence of Re on H dissolution and retention in W by investigating the interaction between dispersed/aggregated-Re and H

KIM

Dr. Young-Joo EO (Korea Institute of Energy Research)

Paper Title: Development of commercialization technology of CIGS thin film solar cell at KIER

MA

Prof. Ajayan VINU (University of New Castle)

Paper Title: Advanced Nanoporous Nitrides for Energy and Environmental Applications

Prof. Xi WANG (Beijing Jiaotong University)

Paper Title: Atom-realm effects of 2D hereroatomic nanosheets: atomic mechanisms and application

Prof. Yusuke YAMAUCHI (University of Queensland)

Paper Title: 'Polymeric Micelle Assembly' for Synthesis of Porous Materials with Highly Crystallized Frameworks

TMS

Dr. Jie LIAN (Rensselaer Polytechnic Institute)

Paper Title: High-Density Uranium Silicide Fuels – Radiation Response and Oxidation Resistance

Dr. James STUBBINS (University of Illinois at Urbana-Champaign)

Paper Title: Development of Austenitic Oxide Dispersion Strengthened Alloys for Nuclear Applications

Dr. Mitra TAHERI (Drexel U.)

Dr. Janelle WHARRY (Purdue U.)

Paper Title: Role of Irradiation and Weld-Induced Post-Irradiation Annealing on Deformation Mechanisms in 304L Stainless Steel

Symposium N: Additive Manufacturing and Powder Metallurgy

Organizers

CSM

Huiping TANG

Professor of Northwest Institute for Nonferrous Metal Research

Yong LIU

Professor of Central South University

JIM

Yuichiro KOIZUMI

Professor of Osaka University

KIM

Kee-Ahn LEE

Professor of Inha University

MA

Qian MA

Professor of RMIT

TMS

Ed HERDERICK

Ohio State University

Keynote Speakers

CSM

Prof. Xiang XIONG (Central South University)

Paper Title: PM materials and new technologies in automotive industry

Prof. Guoqing ZHANG (AVIC Beijing Institute of Aeronautical Materials (BIAM))

Paper Title: Development and applications of gas atomisation and spray forming for high performance alloys

JIM

Prof. Akihiko CHIBA (Tohoku University)

Paper Title: Effects of powder quality on fatigue strength of Ti-6Al-4V alloy fabricated by electron beam additive manufacturing

Prof. Hideshi MIURA (Kyushu University)

Paper Title: High Performance Ti Alloy Compacts through AM and MIM Processes

KIM

Prof. Jai-Sung LEE (Hanyang University)

Paper Title: Progress in Bimodal Metal Nanopowder Processing

MA

Prof. Ma QIAN (RMIT University)

Paper Title: The needs for 3D-printed bone replacement and repair in Australia and technical challenges

Prof. Tim SERCOMBE (The University of Western Australia)

Paper Title: Selective laser melting of titanium for biomedical applications

Invited Speakers

CSM

Prof. Yunping LI (Central South University)

Paper Title: Ultrahigh Oxidation Resistance and High Electrical Conductivity in Copper Silver Powder

Prof. Yong LIU (Central South University)

Paper Title: Manufacturing complex-component alloys by using powder metallurgy

Prof. Xuanhui QU (University of Science & Technology Beijing)

Paper Title: Net-shape Forming and Microstructure Controlling of Tungsten Products

Prof. Huiping TANG (Northwest Institute for Nonferrous Metal Research Group)

Paper Title: Refractory metals fabricated by selective electron beam melting

Dr. Changshu XIANG (Xi'an Sailong Metal Materials Co., Ltd.)

Paper Title: Research and Development Progress in Production of Refractory Metal Powders by Plasma Rotating Electrode Process

Dr. Lijuan ZHANG (National Innovation Institute of Additive Manufacturing)

Paper Title: Properties and Heat-treatment of High Entropy Alloy CoCrFeMnNi Manufactured in SLM Process

JIM

Dr. Koji KAKEHI (Tokyo Metropolitan University)

Paper Title: Microstructure and high-temperature properties of Ni-base superalloys fabricated by selective laser melting

Prof. Takeshi FUJITA (Ko-chi Institute of Technology)

Paper Title: Hierarchical Nanoporous Copper by 3D Printing Technique for Highly Efficient Catalysts

Prof. Naoyuki NOMURA (Tohoku University)

Paper Title: Microstructure and mechanical properties of Cu-Cr-Zr alloy builds fabricated by powder bed fusion process using fiber laser

Prof. Yoshimi WATANABE (Nagoya Institute of Technology)

Paper Title: Selective Laser Melting of Ti-6Al-4V and Al with Heterogeneous Nucleation Site Particles

Dr. Makoto WATANABE (National Institute For Materials Science)

Paper Title: Image analysis for microstructure and property evaluations on SLM Ti-6Al-4V alloy

Dr. Shi-Hai SUN (Osaka University)

Paper Title: Development of crystallographic texture with scanning strategy in selective laser melting

KIM

Dr. Kee-Ahn LEE (Inha University)

Paper Title: Microstructure and high temperature mechanical properties of particle reinforced 316L stainless steel composites manufactured by selective laser melting process

Prof. Shi-Hoon CHOI (Suncheon National University)

Paper Title: Deformation and fracture behaviors of 316L stainless steels fabricated by SPS and SLM techniques under uniaxial tension

Prof. Yoon Suk CHOI (Pusan National University)

Paper Title: Numerical and experimental studies on melt-pool scale behaviors of metal layers processed by Direct Energy Deposition (DED) and Powder Bed Fusion (PBF) techniques

Prof. Pan WANG (Singapore Institute of Manufacturing Technology (SIMTech))

Paper Title: Additively manufactured CoCrFeNiMn-xTi high-entropy alloy via electron beam melting

MA

Prof. Kate FOX (RMIT University)

Paper Title: Recent advances at the implant bio interface

Dr. Stefan GULIZIA (CSIRO)

Paper Title: Development of a Titanium Manufacturing Industry in Australia

Prof. Huijun LI (University of Wollongong)

Paper Title: In-situ alloying with twin wire arc based additive manufacturing

Prof. Andrey MOLOTNIKOV (Monash University)

Paper Title: Additive Manufactured TiTa Alloys for Biomedical Applications

Dr. Dong QIU (RMIT University)

Paper Title: Developing low-cost, high-strength Ti-Cu alloys through laser metal deposition

Prof. Dong RUAN (Swinburne University of Technology)

Paper Title: Mechanical Properties of Auxetic Structures

Prof. Wei XU (Deakin University)

Paper Title: Controlling microstructure in situ in additively manufactured Ti-6Al-4V by selective laser melting

TMS

Dr. Thoma DAN (University of Wisconsin)

Paper Title: Design Innovations with Metal Additive Manufacturing

Symposium O: Electronic and Spin Electron Materials

Organizers

CSM

Hongda CHEN

Professor of Institute of Semiconductors, Chinese Academy of Sciences

Feng PAN

Professor of Tsinghua University

JIM

Rie Y. UMETSU (Ms.)

Associate Professor of Tohoku University

KIM

Joonyeon CHANG

Director-General of Korea Institute of Science and Technology (KIST)

MA

Lianzhou WANG

Professor of University of Queensland

Keynote Speakers

CSM

Dr. Xiufeng HAN (Institute of Physics, Chinese Academy of Sciences)

Paper Title: Magnon Valve and Magnon Junction Effects

Prof. Chih-Huang LAI (National Tsing Hua University)

Paper Title: Manipulating exchange bias by spin-orbit torque

Prof. Lane W. MARTIN (University of California, Berkeley)

Paper Title: Emergent Skyrmion and Topological Phases in Ferroic Superlattices

Prof. Junsaku NITTA (Tohoku University)

Paper Title: Spin-orbit torque in epitaxial Pt/Co bilayer systems

Prof. Dieter WEISS (University of Regensburg)

Paper Title: Spin-Orbit Interaction at Epitaxial Fe/GaAs Interfaces & Spin Injection and Detection in 2DES

Prof. Hyunsoo YANG (National University Of Singapore)

Paper Title: Spin-Orbit Technologies: From Magnetic Memory To Terahertz Generation

KIM

Prof. Young Keun KIM (Korea University)

Paper Title: Spin-orbit torque switching in heavy metal-ferromagnet junctions for memory devices

MA

Prof. Rachel CARUSO (RMIT)

Paper Title: Fabricating inorganic materials with structural control

Prof. Chuan ZHAO (UNSW)

Paper Title: Nickel-Iron Based Catalysts for Water Electrolysis

Invited Speakers

CSM

Dr. Minori GOTO (Osaka University)

Paper Title: Heat controlled magnetic anisotropy effect

Dr. Wei HAN (Peking University)

Paper Title: Spintronics in Quantum Materials

Dr. Cheng SONG (Tsinghua University)

Paper Title: Spin-orbit Torque Switching in Antiferromagnets

Dr. Xiuzhen YU (University of Tokyo)

Paper Title: Imaging topological electron-spin textures by using atomic-resolution Lorentz TEM

KIM

Dr. Gyung-Min CHOI (Sungkyunkwan University)

Paper Title: Spin generation from ultrafast perturbation of magnetization

MA

Prof. Lan FU (Australian National University)

Paper Title: Optoelectronic characterisation of III-V semiconductor nanowire structures and devices

Prof. Ziqi SUN (Queensland University of Technology)

Paper Title: Two-dimensional metal oxide nanomaterials for energy applications

Symposium P: Dynamic Behaviour of Materials

Organizers

Marc Andre Meyers, Professor of University of California, San Diego

Na Yan, Professor of Northwestern Polytechnical University

Keynote Speakers

CSM

Prof. Lanhong DAI (Institute of Mechanics, Chinese Academy of Sciences)

Paper Title: Dynamic fracture of metallic glasses under shock loadings

Prof. Lei LU (National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences)

Paper Title: Strengthening and Work Hardening in Gradient Nanotwinned Metals

TMS

Prof. Marc Andre MEYERS (University of California, San Diego)

Paper Title: Superior Dynamic Response of CrCoNi-Based High-Entropy Alloys

Invited Speakers

CSM

Dr. Chunhuan GUO (Harbin Engineering University)

Paper Title: Investigation on the adiabatic shear behavior of heat-treated Ti-6Al-4V alloy under different strain rates

Dr. Yazhou GUO (Northwestern Polytechnical University)

Paper Title: Temperature Rise Associated with Adiabatic Shear Band: Causation or Consequence

Prof. Tao SUO (Northwestern Polytechnical University)

Paper Title: The effect of texture on the evolution of adiabatic shear band: experiment and simulation

Dr. Bingfeng WANG (Central South University)

Paper Title: Microstructure and mechanical properties of a FeCoNiCrMn high entropy alloy at high velocity loading

Dr. Na YAN (Northwestern Polytechnical University)

Paper Title: Shear Localization and Microstructural Evolution in Dynamic Deformation Process

MA

Dr. Juan Pablo ESCOBEDO (UNSW Canberra at the Australian Defence Force Academy)

Paper Title: Dynamic fracture mechanisms in multiphase materials

TMS

Dr. Zezhou LI (University of California, San Diego)

Paper Title: Dynamic behavior of Ultrafine-grained and noncrystalline titanium at cryogenic temperature

Dr. Ghatu SUBHASH (University of Florida)

Paper Title: Dynamic Shear Response and Taylor Impact Behavior of Hydrogels

Dr. Shiteng ZHAO (University of California, Berkeley)

Paper Title: Revealing the laser shock-induced amorphous silicon by advanced electron microscopy

Others

Prof. Pedro MIRANDA (University of Extremadura, Spain)

Paper Title: Bioinspired ceramic/polymer segmented armour