

# Program schedule of 8<sup>th</sup> ForMGE (Including AMDS 2024)

## Opening Ceremony& Plenary Session (November 14th)

Time	Speaker	Affiliations	Presentation Title
Opening Ceremony& Plenary Session of 8 <sup>th</sup> ForMGE			
8:30-10:20	Opening Ceremony	Opening and Welcome Remarks	
		Inauguration Ceremony for the Formation of the Standardized Materials Data Steering Committee	
		Award Ceremony for MGE	
		Ningde City local promotion	
10:30-12:00	Gan Yong	Professor, China Steel Research Technology Group, Academician of the Chinese Academy of Engineering	TBD
	Jianxin Xie	Professor, University of Science and Technology Beijing, Academician of the Chinese Academy of Engineering	Construction and Development of National New Materials Big Data Infrastructure - Thoughts and Prospects
	Nick Birbilis	Vice President, Deakin University, Australia	Data driven materials design: Speeding up efforts in the materials genome
13:30-15:20	Ouyang Chuying	Co-President of R&D System, Contemporary AmpereX Technology Co., Limited (CATL)	Progress in CATL's Digitalization and Intelligence
	Yousung Jung	Professor, Seoul National University, Korea	Data-Enabled Synthesis Predictions for Molecules and Materials
	Steven Kenny	Professor, Loughborough University, UK	Atomistic Modelling of Thin Film Growth
	Luo Guoqiang	Professor, Wuhan University of Technology	Revealing the Complex Performance of Materials Through Gradient Strategies
Opening Ceremony& Plenary Session of AMDS 2024			
15:30-16:00	Opening Ceremony	Opening and Welcome Remarks	
16:00-18:00	Yong-hak Huh	Director, National Materials Research Data Center, Korea Research Institute of	Issues and Strategies for Materials Data Sharing

		Standards and Science (KRISS)	
	Minamoto Satoshi	Director, Materials Data Platform, National Institute for Materials Science (NIMS), Japan	Operation of Materials Data Platform in NIMS
	Wang Peng	Secretary-General, China Standard Test Materials Alliance (CSTM)	Construction of the (CSTM) Material Data Standard System
	Weber Heiko	Professor, Friedrich-Alexander University Erlangen-Nuremberg, Germany	Experimental Research Data in Materials Science and Solid-State Physics: Challenges, Strategies and Solutions
Technical Exhibition, Poster Presentation, etc.			

# High-Efficiency Materials Computation and Design Symposium

Time: November 15th and 16th

No.	Time	Speaker	Affiliations	Presentation Title
<b>2024.11.15</b>				
Host: Wang Yi, Chen Jun				
S1-01	8:30-8:55	Fan Zheyong	Bohai University	GPUMD software and its applications to materials calculations
S1-02	8:55-9:20	He Lixin	University of Science and Technology of China	The Progress and Outlook of ABACUS First-Principles Calculation Software
S1-03	9:20-9:45	Zhao Yan	Sichuan University	Development of Quantum Chemical Methods and Their Applications in Research of Energy and Environmental Materials
S1-04	9:45-10:10	Wei Hu	University of Science and Technology of China	First-Principles Material Simulation Driven by Algorithms and Computing Power
	10:10-10:25	Tea Break		
Host: Chen Xingqiu, Guan Pengfei				
S1-05	10:25 -10:50	Pedro Rivera	University of Southampton, UK	AI methods for alloy design: from genetic algorithms to knowledge graphs
S1-06	10:50-11:15	Ding Feng	Shenzhen Institute of Advanced Technology	Mechanism-driven Material Manufacturing
S1-07	11:15-11:40	Zhou Jun	Institute of Materials Research and Engineering (IMRE), Singapore	High-throughput screening for two-dimensional structures from non-layered materials
S1-08	11:40-12:00	Wang Hui	Central South University	Computational design of barocaloric materials for solid-state refrigeration
	12:00-13:30	Lunch		
Host: Xu Wei, Huang Dongnan				
S1-09	13:30-13:55	Su Xuming	Zhejiang City University	ICME Development of Carbon Fiber Composites
S1-10	13:55-14:20	Guan Pengfei	Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences	AI-Assisted Simulation and Design of Disordered Alloy Materials
S1-11	14:20-14:45	Chen Xingqiu	Institute of Metal Research, Chinese Academy of Sciences	Machine Learning Moment Tensor Potentials for Materials: Code Development and Applications
S1-12	14:45-15:05	Li Yongsheng	Nanjing University of Science and Technology	Multi-field coupled phase-field simulation of high temperature alloy
S1-13	15:05-15:25	Zhang Yanhui	Yanshan University	Entropy mechanism of phase stabilities for multicomponent alloy systems
S1-14	15:25-15:45	Zhang Shangzhou	Yantai University	Design of Composition and Microstructure in ZrNbTi-Based Refractory High-Entropy Alloy Films
	15:45-16:00	Tea Break		
Miu Naihua, Fan Xiaoli				
S1-15	16:00-16:25	Liu Wei	Changchun Institute of Applied Chemistry, Chinese Academy of Sciences	AI-driven theoretical exploration of single-molecule materials and devices

S1-16	16:25-16:45	Zhang Weibin	Shandong University	Data-driven Design and Performance Regulation of Wear-Resistant Materials
S1-17	16:45-17:05	Fang Guoyong	Wenzhou University	Progress on Material Structure Generation via Artificial Intelligence
S1-18	17:05-17:25	Song Dandan	Beijing Jiaotong University	Machine Learning Guided Design and High Throughput Screening of OLED Materials
S1-19	17:25-17:45	Ju Shenghong	Shanghai Jiao Tong University	Designing High Thermal Conductive Polymers by Quantum Machine Learning
<b>2024.11.16</b>				
Host: Sun Zhimei, Xu Dingguo				
S1-20	8:30-8:55	Fan Xiaoli	Northwestern Polytechnical University	Combining the high-throughput calculations and machine learning study the friction at the interfaces of van der Waals structures
S1-21	8:55-9:20	Zhang Lei	Beijing Institute of Technology	Nonbonding Electron Delocalization Stabilizes the Flexible N <sub>8</sub> Assembly
S1-22	9:20-9:40	Wang Dong	Xian Jiaotong University	Phase field simulations aided multiscale precipitation design in titanium alloys
S1-23	9:40-10:00	Sun Sheng	Shanghai University	Metamaterials design accelerated by AI: Software and applications
	10:00-10:20	Tea Break		
Yang Mingli, Zhang Lei				
S1-24	10:20-10:40	Yu Ze	Contemporary Amperex Technology Co., Limited	Material genetic engineering leads battery system innovation (获奖报告)
S1-25	10:40-11:00	Sa Baisheng	Fuzhou University	Data Driven Efficient Designing of Potassium Sodium Niobate Based Ceramics (获奖报告)
S1-26	11:00-11:20	Pan Xiaoqiang	China Nuclear Power Research & Design Institute	Phase field simulation study in SiC coating process of TRISO fuel
S1-27	11:20-11:40	Dai Shengnan	Shanghai University	HH130: a Dataset for Universal Machine Learning Force Field and the Applications in the Thermal Transport of Half-Heusler Thermoelectric
S1-28	11:40-12:00	Zhu Linggang	Beihang University	Calculation and simulation of multicomponent materials at atomic scale (获奖报告)

## Revolutionary Materials Experimental Technology Symposium

**Time: November 15th and 16th**

No.	Time	Speaker	Affiliations	Presentation Title
<b>2024.11.15</b>				
Host: Huijian, Chunyang Wang				
S2-01	8:30-8:55	Yang Ren	City University of Hong Kong	Application of high-throughput synchrotron radiation characterization techniques in materials science
S2-02	8:55-9:20	Li Zhongming	Sichuan University	High-throughput, in-situ characterization platform for polymer processing-structure based on synchrotron radiation
S2-03	9:20-9:45	Wang Chunyang	Institute of Metal Research, Chinese Academy of Sciences	Advanced Transmission Electron Microscopy Techniques and Their Application in the Study of Cathode Materials for Lithium-Ion Batteries
S2-04	9:45-10:10	Feng Zongqiang	Chongqing University	High throughput three-dimensional characterization of the orientation distribution and deviation behavior of dislocation loops in aluminum alloys

	10:10-10:25	Tea Break		
Host: Liu Yi, Cao Xiaobao				
S2-05	10:25-10:50	Kedar Hippalgaonkar	Nanyang Technological University, Singapore	Property directed generative design of inorganic materials
S2-06	10:50-11:15	Cao Xiaobao	Guangzhou Laboratory	Exploration of intelligent protein manufacturing
S2-07	11:15-11:40	Zhang Peiyu	XtalPi Inc.	AI and Robot Data-Driven Materials Discovery
S2-08	11:40-12:05	Zhao Yicheng	University of Electronic Science and Technology of China	High-Throughput Intelligent Experimental Technology for Electronic Thin Film and Device Development (获奖报告)
	12:05-13:30	Lunch		
Host: Wang Hong, Yanhui Liu				
S2-09	13:30-13:55	Brian Hayden	University of Southampton, UK	The Discovery and Development of Functional Solid-State Materials through Evaporative PVD and High Throughput Screening
S2-10	13:55-14:20	Liu Yanhui	Institute of Physics, Chinese Academy of Sciences	Combinatorial development of metallic glasses
S2-11	14:20-14:45	Chen Pengcheng	Fudan University	Exploring Polyelemental Nanosystems Through Nanoparticle Megalibraries
S2-12	14:45-15:05	Fu Teng	Sichuan University	Real-time high-throughput experimental method for polymer burning processes and accelerating flame-retardant material design
S2-13	15:05-15:15	Chen Rouxi	Southern University of Science and Technology	High-Throughput Ambient Pressure Hydrothermal Synthesis of ZnO Nanowires for Antibacterial Coatings
	15:15-15:30	Tea Break		
Host: Liu Zhifu, Liu Chang				
S2-14	15:30-15:55	Liu Chang	Xi'an Jiaotong University	High-throughput screening for wear-resistant alloys
S2-15	15:55-16:20	Li Jingyuan	University of Science and Technology Beijing	Development and Application of a Spiral Gradient Continuous Casting Device for High-Throughput Preparation
S2-16	16:20-16:45	Yu Xing	Steel Research Institute, National Engineering Research Center for Advanced Testing and Evaluation Technology	A new method for three-dimensional reconstruction characterization of material microstructure based on glow sputtering
S2-17	16:45-17:10	Ma Ming	Shanghai Institute of Ceramics, CAS	Combined 3D microfluidic vortex focusing and high-throughput screening for self-assembly synthesis of homogeneous nanomedicine
S2-18	17:10-17:30	Huang Ke	Sichuan University	Development of Additive Manufactured Invar Alloy and Its Metastructure through High-Throughput Intelligent R&D Platform
S2-19	17:30-17:50	Yang Lixia	Steel Research Institute, National Engineering Research Center for Advanced Testing and Evaluation Technology	The Application of Neutron Diffraction and Imaging Characterization Techniques in Engineering Materials
<b>2024.11.16</b>				
Host: Zhao Yicheng, Wang Xiaonan				

S2-20	8:30-8:55	Liu Yi	Shanghai University	Machine Learning-Assisted High-Throughput Multi-Objective Experimental Optimization of Composition and Processing for High-Strength and High-Conductivity Copper Alloys
S2-21	8:55-9:20	Wang Xiaonan	Tsinghua University	Materials Discovery in Energy and Chemical Engineering driven by "Large" and "Small" AI Models with Knowledge
S2-22	9:20-9:40	Chen Xuebin	Steel Research Institute, National Engineering Research Center for Advanced Testing and Evaluation Technology	Research on High-Throughput Integrated Characterization Techniques for Multi-Component Honeycomb Superalloy Samples
S2-23	9:40-10:00	Ma Boyuan	University of Science and Technology Beijing	Artificial Intelligence-Driven Research on Intelligent Analysis Algorithms and Systems for Materials Microscopic Images
	10:00-10:25	Tea Break		
Host: Guoping Dong, Zhonghui Shen				
S2-24	10:25 -10:50	Wang Junqiang	Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences	Designing metallic glasses with advanced properties using high-throughput strategy
S2-25	10:50-11:15	Shen Zhonghui	Wuhan University of Technology	Research and Development of dielectrics driven by data and intelligent algorithms
S2-26	11:15-11:40	Ding Linfeng	Donghua University	Composition-property design of alkali-free aluminosilicate glass by machine learning and structural insights from molecular dynamics simulations
S2-27	11:40-12:00	Zhu Li	City University of Hong Kong	Antiferromagnetism and Phase Stability of CrMnFeCoNi High-Entropy Alloy

## MGE Technologies and Industrial Application Symposium (Emerging Industry)

Time: November 15th

No.	Time	Speaker	Affiliations	Presentation Title
<b>2024.11.15</b>				
Host: Lin Jiaping, Niu Xiaobin				
S3-01	8:30-8:55	Niu Xiaobin	University of Electronic Science and Technology of China	DFT and machine learning drive the design of high-capacity anode materials
S3-02	8:55-9:20	Nie Hong	PetroChina Research Institute of Petroleum Processing Co., Ltd.	Exploration and innovation of data-driven machine learning in the development of hydrocracking catalysts
S3-03	9:20-9:45	Pan Feng	Peking University	Exploration of material genes and structural chemistry in Li-ion batteries
S3-04	9:45-10:10	Tian Jianjun	University of Science and Technology Beijing	Metal halide perovskite semiconductors optoelectronics and their machine learning
	10:10-10:25	Tea Break		
Host: Liu Zhe, Zhu Bonan				
S3-05	10:25 -10:55	Yan Changjian	Guangdong Corrosion Science and Technology Innovation Institute	Research on design and its mechanical/corrosion properties of magnesium alloy with high strength and corrosion resistant (获奖报告)

S3-06	10:50-11:15	Li Yuqiang	Shanghai Artificial Intelligence Laboratory	Physical Science Research Driven by Large Models
S3-07	11:15-11:40	Wang Yi	Northwestern Polytechnical University	Artificial Intelligence Enabled Smart Design and Manufacturing of Advanced Materials: The Endless Frontier in AI+ Era
S3-08	11:40-12:05	Lin Jiaping	East China University of Science and Technology	Machine learning-assisted molecular structure design of polymers
	12:05-13:30	Lunch		
Host: Han Songbai, Jia Chunyang				
S3-09	13:30-13:55	Ivan Cole	RMIT University, Australia	Virtual Inhibitor discovery based on refined understanding
S3-10	13:55-14:20	Jia Chunyang	University of Electronic Science and Technology of China	Developing Novel Optoelectronic Functional Materials by High-Throughput Engineering
S3-11	14:20-14:45	Yanjun Li	Norwegian University of Science and Technology, Norway	Influence of impurity atoms on the diffusivity and spatial evolution of vacancy in aluminum alloys
S3-12	14:45-15:10	Huang Dongnan	Chinalco Materials Application Research Institute	Digital Research and Application Technology of Aluminum Processing
S3-13	15:10-15:35	Wang Junjie	Northwestern Polytechnical University	Advancing Green and Efficient Synthetic Ammonia Catalytic Technologies through Artificial Intelligence
	15:35-15:50	Tea Break		
Host: Wang Yi, Gong Kui				
S3-14	15:50-16:15	Song Erhong	Shanghai Institute of Ceramics, Chinese Academy of Sciences	Intelligent Design: An Innovative Paradigm for Research in Catalytic Materials
S3-15	16:15-16:40	Han Songbo	Southern University of Science and Technology	Shenzhen Materials Genome Facility-Neutron Science Platform: Construction Progress and Applications
S3-16	16:40-17:05	Gong Kui	Hongzhiwei Technology (Shanghai) Co., Ltd.	The Application of "AI+MGE" Technology in New Materials Research and Development
S3-17	17:05-17:30	Yang Hongbin	Wuhan Zhihua Technology	AI+ automated intelligent laboratory empowering the design and development of advanced materials
S3-18	17:30-17:55	Wang Xiaoxu	Beijing DeepMind Technology Co., Ltd.	Intelligent R&D of Battery Design Automation (BDA) in the Era of AI for Science

## MGE Technologies and Industrial Application Symposium (New Energy)

Time: November 15th and 16th

No.	Time	Speaker	Affiliations	Presentation Title
<b>2024.11.15</b>				
Host: Liu Honglai, Cheng Jun				
S4-01	8:30-8:55	Liu Honglai	East China University of Science and Technology	A mesoscale thermodynamics model for electrochemical process
S4-02	8:55-9:20	Cheng Jun	Xiamen University	Towards AI <sup>2</sup> Electrochemistry (AI <sup>2</sup> = AI * ab initio)
S4-03	9:20-9:45	Francesco Ciucci	University of Bayreuth, Germany	Advancing Battery Technology through AI-Driven Multi-Agent Systems and High-Throughput Screening
S4-04	9:45-10:10	Zhu Youliang	Jilin University	A molecular dynamics simulation software for polymers
S4-05	10:10-10:35	Hou Tingzheng	Tsinghua University	Theory and Data Driven Design of Solid-State Electrolytes

	10:35-10:50	Tea Break		
	10:50-12:00	Round-table Forum "New Horizons: Post-90s Entrepreneurs Discuss MGE's Industrial Breakthroughs and Prospects"		
	12:00-13:30	Lunch		
Host: Jiang Shan, Hong Zijian				
S4-06	13:30-13:55	Mei Ye	Sichuang Information Technology Co., Ltd.	Integrated Software and Hardware Acceleration for Efficient Material Computation and Design: Practices and Prospects in China and Abroad
S4-07	13:55-14:20	Gao Guoping	Xi'an Jiaotong University	The HER volcano based on the potential of zero charge and hydrogen adsorption energy
S4-08	14:20-14:45	Fang Yulong	The 13th Research Institute, China Electronics Technology Group Corporation	Research and development as well as engineering applications of compound semiconductor materials driven by artificial intelligence
S4-09	14:45-15:10	Xu Xiang	Zhejiang University	Mathematical Approaches for Microstructure Evolution of Ni-based Superalloys
S4-10	15:10-15:35	Kuang Wangwang	Hongzhi Era Laboratory	Computer-Aided Design of Lithium-Ion Batteries: Software Development, Applications and Prospects
	15:35-15:50	Tea Break		
Host: Zhu Youliang, Gao Guoping				
S4-11	15:50-16:15	Wu GuiXuan	Institute of Coal Chemistry, Chinese Academy of Sciences	Present progress in the development of the oxide thermodynamic database and its representative applications
S4-12	16:15-16:40	Jiang Shan	ShanghaiTech University	Computational Design and Automation for Materials Discovery
S4-13	16:40-17:05	Hong Zijian	Zhejiang University	Graph Neural Network-based Machine Learning Assisted Prediction of Battery Materials
S4-14	17:05-17:30	Xu Yanyan	Shanghai Jiao Tong University	Large Language Models to Accelerate Chemical Synthesis
S4-15	17:30-17:55	Zeng Zhuo	Suzhou Woshi Digital Technology Co., Ltd.	A data-driven framework for chemical synthesis process design
<b>2024.11.16</b>				
Host: Liu Jianjun, Cheng Tao				
S4-16	8:30-8:55	Liu Jianjun	Shanghai Institute of Ceramics, Chinese Academy of Sciences	Computation- and Data-Driven Studies of Battery Materials Design and Synthesis
S4-17	8:55-9:20	Yang Jinglei	Hong Kong University of Science and Technology	Modulization and High-throughput Design for Fast Screening of Composition and Processing of Functional Coatings
S4-18	9:20-9:45	Cheng Tao	Soochow University	Modeling of Electrochemical Interface and Interphase
S4-19	9:45-10:05	Liu Yuyang	Huanliang Technology (Shanghai) Co., Ltd.	Aligning machine learning with material design and optimization
	10:05-10:20	Tea Break		
Host: Zhao Xushan, Li Ximao				
S4-20	10:20-10:40	Yang Rukun	Shenzhen Jiyang Smart Technology Co., Ltd.	Data-Driven Extreme Manufacturing Technology for Power Batteries
S4-21	10:40-11:00	Pu Chuanzhi	Wanhua Chemical Group Co., Ltd.	Polymer Design and Innovation Driven by Digital Intelligence Technology



S4-22	11:00-11:20	Sun Xiang	Zhejiang Provincial Chemical Industry Research Institute Co., Ltd.	Accelerating the Screening of layered 2D materials for Hydrogen Evolution Reaction by AI-Based Local Geometric Analysis
	11:20-12:10	Sub-forum competition works display unit		
S4-23	11:20-11:30	Chen YiLin	Tongji University	Fully Atomistic Model for the Optimization of Electrolyte Formula in Commercial Lithium Batteries
S4-24	11:30-11:40	Chen Zong Li	Tongji University	Digital Modeling Technology and Microstructure Optimization of Lithium-Ion Batteries Considering the Heterogeneous Features of Typical Electrode Structures
S4-25	11:40-11:50	Xu Dawei	East China Normal University	Modulation of active center distance of hybrid perovskite for boosting photocatalytic reduction of carbon dioxide to ethylene
S4-26	11:50-12:00	Zhang Yu	Nanjing University	Organic Synthesis Materials Acceleration Platform: OS-MAP
S4-27	12:00-12:10	Pu Xin	Jilin University	Computer-Aided Structural Design of Solid Polymer Electrolytes

## Materials Big Data and AI for Science Symposium (FMGE-AMDS Joint)

Time: November 15th

No.	Time	Speaker	Affiliations	Presentation Title
<b>2024.11.15</b>				
Host: Chen Xiang, Chong Xiaoyu				
D5-01	8:30-8:55	Turab Lookman	AiMat Res LLC	How can theory guide data science?
D5-02	8:55-9:20	Alex Ganose	Imperial College London, UK	Computational Materials Discovery in the Age of Automation
D5-03	9:20-9:45	Chen Xiang	Tsinghua University	Artificial Intelligence Design of Lithium Battery Electrolytes
D5-04	9:45-10:10	Jiayu Peng	University at Buffalo, USA	Bridging physics-informed and data-driven materials designs to catalyze deep decarbonization
	10:10-10:25	Tea Break		
Host: Fu Huadong, Wang Yi				
D5-05	10:25 -10:50	Weng Hongming	Institute of Physics, Chinese Academy of Sciences	Data Resource Construction for Condensed matter quantum material science and AI empowerment
D5-06	10:50-11:15	Yue Li	Max -Planck- Institute for Sustainable Materials, Germany	Artificial intelligence-enhanced atom probe microscopy: Local chemical ordering analysis
D5-07	11:15-11:40	Wang Shanshan	National University of Defense Technology	Machine learning empowered material atomic structural understanding
D5-08	11:40-12:05	Xiong Jie	Shanghai University	Domain Knowledge Embedded Materials Data Mining (获奖报告)
	12:05-13:30	Lunch		
Host: Xue Dezhen, Ye Yicong				

D5-09	13:30-13:55	Tongqi Wen	The University of Hong Kong	Small and Large Atomic/Language Models for Materials Science
D5-10	13:55-14:20	Ye Yicong	National University of Defense Technology	MatPilot, an AI Materials Scientist Empowered by Large Language Models: Intelligent R&D Practice for Functional Ceramics (获奖报告)
D5-11	14:20-14:45	Jiang Xue	University of Science and Technology Beijing	Steel Design Based on a Large Language Model
D5-12	14:45-15:10	Sun Zhaoyan	Changchun Institute of Applied Chemistry, Chinese Academy of Sciences	Genetic Engineering of Polymer Materials: Small Data, Model Interpretability, and Large Language Models
D5-13	15:10-15:30	Liu Yue	Shanghai University	Empowering Material Knowledge Extraction with Large Language Models
D5-14	15:30-15:50	Wang Jue	Chengdu Caili Company	Enhancing Materials Research through LLM: Building a Comprehensive Platform and Facilitating Knowledge-Led Innovation
	15:50-16:05	Tea Break		
Host: Wu Yuan, Wang Chenchong				
D5-15	16:05-16:30	Wu Yuan	University of Science and Technology Beijing	A Multi-Objective Synergistic Design Approach for Achieving Low Modulus and High Yield Strength in High Entropy Alloys
D5-16	16:30-16:55	Zhong Xiaoyu	Kunming University of Science and Technology	The Design and Application of Noble Metal-Based Superalloys Driven by the Synergy of Physical Models and Machine Learning
D5-17	16:55-17:20	Rao Ziyuan	Shanghai Jiao Tong University	Microstructure and mechanism information-guided multimodal data analysis and design for steel materials
D5-18	17:20-17:45	Lian Lixian	Sichuan University	Alloy Design Based on Artificial Intelligence and Machine Learning (获奖报告)
D5-19	17:45-18:05	Yuan Ruihao	Northwestern Polytechnical University	Multi-objective intelligent optimization design and development of new superalloys

## AMDS—Materials Data Management and Image Data

Time: November 15th

No.	Time	Speaker	Affiliations	Presentation Title
<b>2024.11.15</b>				
Host: Wang Hong, Kwang-Ryeol Lee				
D6-01	8:30-9:00	Kwang-Ryeol Lee	Korea Institute of Science and Technology, Korea	Standardization of Materials R&D Data Scheme and Vocabulary
D6-02	9:00-9:25	Wang Hong	Shanghai Jiao Tong University	The standard system for AI ready materials data
D6-03	9:25-9:50	Zhang Yi	China National Building Materials Group Corporation	Exploration and application of digital transformation in the inorganic non-metallic materials industry
D6-04	9:50-10:15	Takuya Kadohira	National Institute for Materials Science, Japan	Management of experimental data in NIMS
	10:15-10:35	Tea Break		
Host: Zhang Lanting, Shi Siqi				

D6-05	10:35-11:00	Shi Siqi	Shanghai University	Constructing high-performance Machine Learning Models depends on high-quality materials data
D6-06	11:00-11:25	Isao Kuwajima	National Institute for Materials Science, Japan	Data collection and retrieval system in NIMS
D6-07	11:25-11:50	Zhang Lanting	Shanghai Jiao Tong University	Some key considerations on materials data ecology in the context of large models
D6-08	11:50-12:10	Yu Zhigang	Shanghai University	An unbiased recommendation framework mining the optimal combination of data subsets and algorithms
	12:10-13:30	Lunch		
Host: Ren Lingling, He Jie				
D6-09	13:30-14:00	Ren Lingling	China Institute of Metrology	Metrology and traceability of materials big data
D6-10	14:00-14:25	Xu Cheng	University of Science and Technology Beijing	Toward Collaborative Intelligence: Secure Big-data Sharing and Computing in Materials Genomics Engineering
D6-11	14:25-14:50	Wu Xing	Shanghai University	A Spatial-frequency Domain-based image Noise Suppression Model and Application in Silicon Chip Defect Detection
D6-12	14:50-15:15	Huang Jianxing	Huawei Technologies Co., Ltd.	Ecological construction practices for industrial software simulation materials data
D6-13	15:15-15:35	Jie He	University of Science and Technology Beijing	MGED-Assistant: Smart Material Database Powered by LLM
	15:35-15:55	Tea Break		
Host: Jaimyun Jung, Ban Xiaojuan				
D6-14	15:55-16:25	Jaimyun Jung	Korea Institute of Materials Science, Korea	Inverse design of 3D microstructures using latent diffusion model
D6-15	16:25-16:50	Ban Xiaojuan	University of Science and Technology Beijing	An approach to efficiently extracting microstructures via visual large model
D6-16	16:50-17:15	Sangil Hyun	Korea Institute of Ceramic Engineering and Technology, Korea	Virtual characterization models developed by multiphysics computer simulation & data-driven AI for ceramic manufacturing process
D6-17	17:15-17:40	Han Yuexing	Shanghai University	Research on Machine Learning Methods for Mining Material Properties from Material Images
D6-18	17:40-18:00	Jin Jianfeng	Northeastern University	A Web-based System for Automated Microstructure Recognition and Mechanical Properties Prediction of Polycrystalline Alloys
D6-19	18:00-18:20	Wan Weihao	Steel Research Institute, NAK Technologies Co., Ltd.	A high-throughput statistical mapping characterization method for microstructure based on multi-element coupling

## AMDS — Data Driven Materials Design

Time: November 15th

No.	Time	Speaker	Affiliations	Presentation Title
<b>2024.11.15</b>				
Host: Shen Lei, Du Yong				
D7-1	8:30-9:00	Seungwu Han	Seoul National University, Korea	SevenNet: a pretrained universal machine learning force fields

D7-2	9:00-9:25	Du Yong	Central South University	Intelligent design of AI alloy by integrating CALPHAD, machine learning and key experiments
D7-3	9:25-9:50	Lei Shen	National University of Singapore, Singapore	High-throughput calculations of 2D heterostructures
D7-4	9:50-10:15	In Kim	Korea Institute of Ceramic Engineering and Technology, Korea	Advancing the Development of Polymer Composites through Artificial Intelligence
	10:15-10:35	Tea Break		
Host: Yibin Xu, Junggho Shin				
D7-5	10:35-11:00	Yibin Xu	National Institute for Materials Science, Japan	Data-driven Exploration for Li Ionic Conductor
D7-6	11:00-11:25	Junggho Shin	Korea Research Institute of Chemical Technology, Korea	Web-based Interface for Search and Analysis of Materials Data: ChemDX and MatDX
D7-7	11:25-11:50	Liu Zhe	Northwestern Polytechnical University	Design and Screening of Functional Organic Molecules for Perovskite Solar Cells via Machine Learning
D7-8	11:50-12:10	Heechae Choi	Xi'an Jiaotong-Liverpool University, China	TBD
	12:10-13:30	Lunch		
Host: Ho Won Lee, Wang Guojun, Pan Teng				
D7-9	13:30-14:00	Ho Won Lee	Korea Institute of Materials Science, Korea	Overcoming Small Dataset Challenges in Semantic Segmentation of Metallographic Microscopy Images
D7-10	14:00-14:25	Wang Guojun	Chinalco Materials Application Research Institute	Design and development of high performance aluminum alloy based on integrated computing and machine learning
D7-11	14:25-14:50	Xiang Xiaodong	Southern University of Science and Technology	New AI Algorithm for Materials Science
D7-12	14:50-15:15	Pan Deng	Shanghai University	KAN Made Learning Physics Laws Simple
D7-13	15:15-15:35	Sun Song	Anhui University	Material Genome Engineering in Catalysis
	15:35-15:55	Tea Break		
Host: Sehyeok Oh, Liu Yi				
D7-14	15:55-16:25	Sehyeok Oh	Korea Institute of Materials Science, Korea	Innovative Applications of AI to Mechanical /Materials Processing
D7-15	16:25-16:50	Liu Yi	Shanghai University	"What you need is pre-attention": Small-data machine learning with center-environment features
D7-16	16:50-17:15	Hoheok Kim	Korea institute of materials science, Korea	Deep learning application for modeling the heat treatment condition-microstructure-property relationship
D7-17	17:15-17:40	Yin Haiqing	University of Science and Technology Beijing	Screening strategy for refractory high-entropy alloys
D7-18	17:40-18:00	Tian Yuan	Shanghai University	Noise-aware active learning to develop high-temperature shape memory alloys with large latent heat
D7-19	18:00-18:20	Huang Haiyou	University of Science and Technology Beijing	Finding New High-Temperature Superconductors Based on Crystal Graph Neural Networks

## The 3<sup>rd</sup> workshop towards Materials Data Standards

Time: November 16th

No.	Time	Speaker	Affiliations	Presentation Title
2024.11.16				
D8-1	8:30-8:55	Ryo Maezono	Japan Advanced Institute of Science and Technology, JAIST, Japan	AI-recognition of XRD pattern using auto-encoder
D8-2	8:55-9:20	Zhang Lei	Nanjing University of Information Science and Technology	Data-driven language models for materials science
D8-3	9:20-9:45	Byungju Lee	Korea Institute of Science and Technology, Korea	Accelerating materials language processing with large language models
D8-4	9:45-10:10	Zhang Yuzhi	Beijing DeepMomentum Technology Co., Ltd.	New-generation materials design platform empowered by AI foundation models
	10:10-10:30	Tea Break		
	10:30-12:10	Round-Table Discussion		

## Materials Genome Engineering Advances

Time: November 16th

No.	Time	Speaker	Affiliations	Presentation Title
2024.11.16				
S9-1	8:40-9:05	Wang Chenchong	Northeastern University	Integration and Development of Physical Models and Artificial Intelligence in Alloy Design (获奖报告)
S9-2	9:05-9:30	Wang Hui	Central South University	Machine-learning aided investigation of electrocaloric materials
S9-3	9:30-9:55	Hui Jian	Shanghai Jiao Tong University	Progress in the Construction of On-the-fly High-throughput Experimental "Data Factory"
	9:55-10:10	Tea Break		
S9-4	10:10-10:35	Yu Tianshu	The Chinese University of Hong Kong (Shenzhen)	Predicting Reaction Feasibility and Robustness Using High-Throughput Data and Bayesian Learning
S9-5	10:35-11:00	Ma Lingwei	University of Science and Technology Beijing	High-throughput experiments and WBE characterization for weathering steel surface treatment
S9-6	11:00-11:25	Li Weidong	University of Science and Technology Beijing	Designing low-texture and high-formability magnesium alloys via an integrated strategy