

Tentative Program of PF24

(March 12, 2024)

Program Table

May 19 th	May 20 th	May 21 st		May 22 nd		May 23 rd		Room No.
Registration	Plenary Talks (Morning/Afternoon) Poster session (Evening)	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	
		Topic 1	Topic 1	Topic 1	Social Activities	Topic 1	Departure	Room 1
		Topic 2a	Topic 2a	Topic 2b		Topic 2a		Room 2
		Topic 3	Topic 2b	Topic 3		Topic 2b		Room 3
		Topic 4	Topic 2a	Topic 4		Topic 4		Room 4
		Topic 5	Topic 2b	Topic 5		Topic 5		Room 5

Topic 1-Solidification and additive manufacturing

Topic 2a- Solid state processes in functional materials

Topic 2b- Solid state processes in structural materials

Topic 3-Electrochemical reactions, corrosion, and oxidation

Topic 4-Brittle and ductile fracture

Topic 5-New method development, integration with ML, et al.

Banquet is scheduled on the May 21st night.

Plenary Session

Grand Room, May 20 th , Morning, Plenary Talks			
9:00-9:30	Opening Ceremony		
Plenary Talks			
9:30-10:20	Ingo Steinbach	Ruhr-University Bochum	Materials And Processes As Understood By Phase-Field Simulations: Solidification, Solid State Transformation, And High-Temperature Creep
Coffee Break			
10:50-11:40	Nele Moelans	KU Leuven	Recent Progress In The Application of Phase-Field Models To Multi-Phase And Multi-Component Alloy Microstructure Evolution
Lunch			
Grand Room, May 20 th , Afternoon, Plenary Talks			
14:00-14:50	Katsuyo Thornton	University of Michigan	Development and Application of Phase-Field Models for Microstructure Evolution under Complex Processing Conditions
14:50-15:40	Emilio Martinez-Paneda	University of Oxford	Opening New Horizons In The Prediction of Environmentally-Assisted Material Degradation: Phase Field Models For Hydrogen Embrittlement And Corrosion
Coffee Break			
16:10-17:00	Tong-Yi Zhang	Hong Kong University of Science and Technology (Guangzhou)	Materials/Mechanics-GPT And The Integration of Artificial Intelligence With Phase-Field Simulations

Parallel Oral Sessions

Time	Name	Affiliation	Title
Room 1, May 21, Solidification & Additive Manufacturing I , Chair: Damien Tournet			
8:30-9:00	Tomohiro Takaki	Kyoto Institute of Technology	Phase-Field Modeling And Simulation of Fragmentation And Deformation During Solidification
9:00-9:30	Mathis Plapp	Ecole Polytechnique/CNRS	Phase-Field Modeling of Dendritic Growth In Crystals With Strongly Anisotropic Surface Free Energy
9:30-9:50	Raphael Schiedung	ICAMS - The Interdisciplinary Centre For Advanced Materials Simulation	Mobility Corrections In Phase-Field Models For Material Solidification
9:50-10:10	Tamás Pusztai	Wigner Research Centre For Physics	Exploring Equilibrium And Steady-State Solutions With Elliptic PDE Solvers
Coffee Break			
Room 1, May 21, Solidification & Additive Manufacturing II, Chair: Mohsen Asle Zaeem			
10:30-11:00	Yuhong Zhao	University of Science And Technology Beijing	Phase-Field Modelling of Dendrites And Precipitates To Guiding Alloy Design And Process Optimization
11:00-11:20	Xiaofeng Yang	University of South Carolina	Efficient Numerical Algorithms For The Phase-Field Dendritic Model
11:20-11:40	Lei Wang	Northwestern Polytechnical University	Applications of Phase-Field Method In The Study of Solidification Defects Formation
11:40-12:00	Kai Wang	TU-Darmstadt	Electro-Chemo Coupled Phase Field Modeling of Grain Growth In SrTiO ₃ Polycrystalline Material
Room 1, May 21, Solidification & Additive Manufacturing III, Chair: Qingcheng Yang			
13:30-14:00	Jincheng Wang	Northwestern Polytechnical University	Cracking Mechanism of GH3536 Superalloy During Directed Energy Deposition Additive Manufacturing
14:00-14:30	Min Yi	Nanjing University of Aeronautics And Astronautics	Phase-Field Modeling From Additive Manufacturing Microstructure Evolution To Aerospace Structures
14:30-14:50	Guillaume Boussinot	Access E.V.	Pattern Formation In Additively Manufactured Binary Al-Ni And Ternary Al-Ni-Ce Eutectic Alloys
14:50-15:10	Leiji Li	Shanghai Jiao Tong University	Quantitative Phase Field Modeling of Morphological Evolution In The Rapid Directional Solidification Under Additive Manufacturing Conditions
15:10-15:30	Upadesh Subedi	Silesian University of Technology	Temperature Dependence of Free Energies In A Phase Field Model For Selective Laser Melting of Tin Powder On Copper Substrate

Coffee Break**Room 1, May 21, Solidification & Additive Manufacturing IV, Chair: Abhik Choudhury**

15:50-16:20	Murali Uddagiri	Ruhr University Bochum	Microstructure Evolution of Multi-Component Single Crystal Ni-Based Super Alloys Under Additive Manufacturing Process Conditions
16:20-16:40	Yangyiwei Yang	TU Darmstadt	Tailoring Material Properties Via Powder Bed Fusion: Multiphysics-Multiscale Phase-Field Simulations of Process-Property Relationships
16:40-17:00	Fathollah Varnik	Ruhr-University Bochum	A Phase-Field-Based Model For The Simulation of Reactive Gas Flows In Particle Beds
17:00-17:20	TÉO Boutin	Commissariat À L'Énergie Atomique	Phase Field Model of Dissolution: Application To Porous Media Formation
17:20-17:40	Xiaoqian Huang	Universite Claude Bernard Lyon 1	Thermodynamically Consistent Phase Field Modeling For Freeze Crystallization In A Binary System

Room 1, May 22, Solidification & Additive Manufacturing V, Chair: Tomohiro Takaki

8:30-9:00	Damien Tournet	IMDEA Materials	Phase-Field Insights Into Microstructure Selection During Solidification of Hcp Mg Alloys
9:00-9:30	Munekazu Ohno	Hokkaido University	Quantitative Phase-Field Modeling of Non-Equilibrium Interface Dynamics During Rapid Solidification
9:30-9:50	Guillaume Boussinot	Access E.V.	Review On The Non-Diagonal Phase Field Model And Its Applications
9:50-10:10	Li Yue	Northwestern Ploytechnical University	A Continuum Phase-Field Model With Interfacial Concentration Ordering Parameters

Coffee Break**Room 1, May 22, Solidification & Additive Manufacturing VI, Chair: Yuhong Zhao**

10:30-11:00	Abhik Choudhury	Indian Institute of Science	Diffuse-Interface Formulations For Coupling Process And Microstructure Simulations Within The Smooth-Boundary Framework
11:00-11:20	Mingwang Zhong	Northeastern University - USA	Grain Texture Selection During Rapid Alloy Solidification
11:20-11:40	Yuhan Cai	Karlsruhe Institute of Technology	Formation of Misoriented Lamellar Microstructures In Mo-Si-Ti Alloy: A Phase-Field Study

Room 1, May 23, Solidification & Additive Manufacturing VII, Chair: Jincheng Wang

8:30-9:00	Mohsen Asle Zaem	Colorado School of Mines	Integrating Machine Learning With Atomistic-Informed Phase-Field Simulations For Prediction of Microstructures During Rapid Solidification
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9:00-9:20	Weipeng Chen	North University of China	Temperature And Solute Diffusion In A-Mg Dendrite Growth of Mg-5wt.%Zn Alloy: A Phase-Field Study
9:20-9:40	Sa Ma	Central South University	Parallel-GPU-Accelerated Large-Scale Quantitative Phase-Field Simulation of Dendrite Growth For Al-Si-Mg Casting Alloys
9:40-10:00	Chuanqi Zhu	Tohoku University	Diffuse Interface Model For Alloy Solidification Under Non-Equilibrium Cooling Conditions

Coffee Break

Room 1, May 23, Solidification & Additive Manufacturing VIII, Chair: Murali Uddagiri

10:20-10:50	Qingcheng Yang	Shanghai University	A Thermodynamically Consistent Phase-Field-Micromechanics Model of Solid-State Sintering With Coupled Diffusion And Deformation
10:50-11:10	WENBO LIU	Xi'an Jiaotong University	Sintering of Ceramic Nuclear Fuels: Phase-Field Simulation
11:10-11:30	Sandeep Sugathan	Kookmin University	Phase Field Study of Solid-State Sintering Process In Binary Alloys
11:30-11:50	Ayush Suhane	The University of British Columbia	Atomistically Informed Phase Field Modeling For Austenite Grain Growth

Room 2, May 21, Solid State Processes in Functional Materials I , Chair: Jiamian Hu

8:30-9:00	Long-Qing Chen	The Pennsylvania State University	Thermodynamic Basis For Phase-Field Method of Ferroelectrics
9:00-9:30	Houbing Huang	Beijing Institute of Technology	Electric-Field-Induced Crystallization of Hf _{0.5} Zr _{0.5} O ₂ Thin Film Based On Phase-Field Modeling
9:30-9:50	Yu-Jia Wang	Institute of Metal Research, Chinese Academy of Sciences	Prediction And Observation of Polar Topological Domain Structures In Ferroelectric Thin Films
9:50-10:10	Jianhua Ren	Sun Yat-Sen University	Stabilization And Control of Weakly Correlated Polar Skyrmions In Ferroelectric Thin Films

Coffee Break

Room 2, May 21, Solid State Processes in Functional Materials II , Chair: Zijian Hong

10:30-11:00	Jie Wang	Zhejiang University	Phase Field Modeling of Topological Domain In Ferroelectric And Ferromagnetic Materials
11:00-11:30	Zhong-Hui Shen	Wuhan University of Technology	Phase-Field Programming Polarity Heterogeneity of Energy Storage Dielectrics By Bidirectional Intelligent Design
11:30-11:50	Ke Xu	Beijing Institute of Technology	Insight Into Domain Structure And Energy Storage Properties of Antiferroelectric Via Phase-Field Methods

Room 2, May 21, Solid State Processes in Functional Material III, Chair: Houbing Huang

13:30-14:00	Yann Le Bouar	LEM, CNRS/ONERA, France	Modeling of The Electrical Resistivity of Microstructures
14:00-14:30	Zijian Hong	Zhejiang University	Phase-Field Simulations of Polar Skyrmions

14:30-14:50	Ren-Ci Peng	Xidian University	The Role of Space Layer In Domain Dynamics of Hf _{0.5} Zr _{0.5} O ₂ Thin Films Via Phase-Field Simulations
14:50-15:10	Tang Shiyu	Beijing Institute of Technology	Multi-Field Manipulation of Topological Domains On BFO Nanoislands By Phase-Field Simulations
15:10-15:30	Xu Hou	The Hong Kong Polytechnic University	Effect of Grain Size On The Electrocaloric Properties of Polycrystalline Ferroelectrics
Coffee Break			
Room 2, May 21, Solid State Processes in Functional Material IV, Chair: Yann Le Bouar			
15:50-16:20	Ye Cao	University of Texas At Arlington	Physical Modeling of Resistive Switching In Metal Oxide-Based Resistive Random-Access Memory
16:20-16:50	Tao Xu	Kyoto University	Mechanical Rippling For Rich Ferroelectric Topologies In SrTiO ₃ Nanofilms
16:50-17:10	Zhanpeng Zhang	Xiangtan University	Thermodynamic Analysis of Stress-Mediated Electrocaloric In Ferroelectrics
17:10-17:30	Yinping Zeng	Changsha University of Science And Technology	Gibbs Energy And Phase-Field Modeling of Phase Transformation Under An External Magnetic Field

Room 4, May 21, Solid State Processes in Functional Materials V, Chair: Zhong-Hui Shen			
13:30-14:00	Yu Su	Beijing Institute of Technology	Phase-Field Study of The Strongly Enhanced Capacitive Energy Density In Ferroelectric Films With Superfine Columnar Nanograins
14:00-14:30	Xiaoqin Ke	Xi'an Jiaotong University	Phase-Field Modelling On The Phase Transition Mechanisms And Associated Properties of Ferroelectric Materials
14:30-14:50	Dilshod Durdiev	FAU Erlangen-Nuremberg	A Novel Scheme For Full Parametrization of A Ferroelectric Phase-Field Model From MD Data
14:50-15:10	Ling Fan	Karlsruhe Institute of Technology (KIT)	A Phase-Field Model For Ferroelectric Materials—Based On The Multiphase-Field Approach

Coffee Break			
Room 4, May 21, Solid State Processes in Functional Materials VI, Chair: Yu Su			
15:30-16:00	Fei Li	Xi'an Jiaotong University	The Origin of Ultrahigh Piezoelectricity In Relaxor-Ferroelectric Solid Solution Crystals
16:00-16:30	Xiaoyan Lu	Harbin Institute of Technology	Phase Coexistence And Critical Behaviors In Ferroelectric Materials
16:30-16:50	Shuai YUAN	Guilin University of Electronic Technology	Hexagonal Close-Packed Skyrmion Lattices In Ferroelectric Ultrathin PbTiO ₃ Films
16:50-17:10	Xuhui Lou	Sichuan University	Electromechanical Grain Boundary Model With Formation Mechanism In Polycrystalline Ferroelectrics

Room 2, May 23, Solid State Processes in Functional Materials VII, Chair: Tiannan Yang			
8:30-9:00	Jiamian Hu	University of Wisconsin-Madison	Design of Narrowband Magnonic Terahertz Emitter By Dynamical Phase-Field Simulation

9:00-9:20	Shouzhe Dong	Beijing Institute of Technology	Voltage-Controlled Magnetic Double-Skyrmion States In Magnetolectric Elliptical Nanostructures By Phase-Field Model
9:20-9:40	Yu Wang	Central South University	Coherent Magnitude-Fluctuated Spin Waves Emitted By Magnetic Skyrmions
9:00-10:00	Jiajun Sun	Zhejiang University	Strain Mediated Transition Between Skyrmion And Antiskyrmion In Ferromagnetic Thin Films

Coffee Break

Room 2, May 23, Solid State Processes in Functional Materials VIII, Chair: Jie Wang

10:20-10:50	Tiannan Yang	Shanghai Jiao Tong University	Excited-State Evolution Dynamics of Ferroelectric Domains: A Phase-Field Study
10:50-11:20	Sizheng Zheng	Zhejiang University	The Origin of The Chiral Phase Transition In Ferroelectric/Dielectric Superlattices
11:20-11:40	Changqing Guo	Beijing Institute of Technology	Evolution of Domain Structures In Flexible Ferroelectric Thin Film Systems By Phase-Field Simulations

Room 3, May 21, Solid State Processes in Structural Materials I , Chair: Qingping Sun

13:30-14:00	Guozheng Kang	Southwest Jiaotong University	Phase Field Simulation On The Functional Properties of Shape Memory Alloys
14:00-14:30	Jiaming Zhu	Shandong University	Microstructure Evolution And High-Performance Design of Materials Via Phase Field Simulations
14:30-14:50	Hesham Salama	Interdisciplinary Centre For Advanced Materials Simulation (ICAMS)	Phase-Field Simulation Framework For Modeling Martensite And Bainite Formation In Steel
14:50-15:10	Xiaolong Sun	Northeastern University	Morphological Evolution of Ferrite-Austenite Interface And Cementite Grains In Divorced Eutectoid Transformation of Fe-1.05wt%C Alloy
15:10-15:30	Yuanchao Yang	Xi'an Jiaotong University	Phase Field Investigation of The Influence of Transformation Induced Plasticity In Lath Martensite

Coffee Break

Room 3, May 21, Solid State Processes in Structural Materials II , Chair: Guozheng Kang

15:50-16:20	Qingping Sun	HKUST	Development of Ultrahigh Fatigue Life Shape Memory Alloys For Solid-State Refrigeration Technology: Challenges And Opportunities
16:20-16:50	Hong-Hui Wu	University of Science And Technology Beijing	Phase Field Simulation Study On Microstructure Evolution of Low Carbon Steel
16:50-17:10	Ben Niu	Dalian University of Technology	Disorder-Order Transformation And Phase-Filed Simulation of Coherent B2/L21 Phase In Irradiated BCC Fe-Cr-Al Alloys
17:10-17:30	Qianglong Liang	Xi'an Jiaotong University	Fatigue-Resistant Elastocaloric Effect In Hypoeutectic Tini58 Alloy With Heterogeneous Microstructure

17:30-17:50	Jakub Mikula	Institute of High Performance Computing, Agency For Science, Technology And Research	Phase Field Model of Heat Treatment And Strengthening In Maraging Steel
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Room 5, May 21, Solid State Processes in Structural Materials III, Chair: Rongpei Shi

13:30-14:00	Yao Shen	Shanghai Jiao Tong University	Dual-Mesh Crystal Plasticity Finite Element (CPFE) – Phase Field (PF) Coupled Model For Dislocation And Twin Plasticity
14:00-14:30	Xu Zhang	Southwet Jiaotong University	Deformation Mechanism of Dual Heterogeneous Materials: A Combined Crystal Plasticity FEM And Phase Field Modeling
14:30-14:50	Xiaohua Niu	Xiamen University of Technology	A Phase Field Model For The Motion of The Prismatic Dislocation Loops By Both Climb And Self-Climb
14:50-15:10	Frank Wendler	Friedrich-Alexander University of Erlangen-NÜRNBERG	A Coarse Grained Phase-Field Finite Element Method For Shape Memory Alloys

Coffee Break

Room 5, May 21, Solid State Processes in Structural Materials IV, Chair: Yao Shen

15:30-16:00	Rongpei Shi	Harbin Institute of Technology (Shenzhen)	The Influence of Particle Size And Its Distribution On Microstructure Evolution And Densification Kinetics During Sintering - A Phase-Field Simulation Study
16:00-16:30	Tianlong Zhang	The Hong Kong University of Science And Technology	Design of Compositionally Modulated Strong Yet Ductile Ti Alloys
16:30-16:50	Hong Liu	Shanghai Jiao Tong University	Multiscale Simulation Study On Precipitation Behavior In Light Alloys
16:50-17:10	Mengyuan Hao	Northwest Institute of Nonferrous Metals	Heterogeneous Precipitate Microstructure Design In B-Ti Alloys By Regulating The Cooling Rate
17:10-17:30	Xiaoke Wu	Central South University	A Novel Nucleation Model For Multi-Component Alloys During Solid-State Phase Transition And Its Incorporation Into Phase-Field Model With Finite Interface Dissipation

Room 2, May 22, Solid State Processes in Structural Materials V, Chair: Saswata Bhattacharya

8:30-9:00	Yipeng Gao	Jilin University	Grain Boundary Engineering Using Self-Organized High-Index Twins: A Phase Field Study
9:00-9:30	Benoit Appolaire	Université De Lorraine	Phase-Field Cosserat Crystal Plasticity Towards Modelling Nucleation In Recrystallization

9:30-9:50	Haipeng Li	Jilin University	Phase Field Modeling And Stress Field Analyses of Twin-Twin, Twin-Grain Boundary Reactions Mediated By Disclinations In Mg Alloys
9:50-10:10	Yongsi Wei	Jilin University	Analytical Solution And Phase Field Simulations of Stress Fields Associated With Twin-Twin Reactions In Mg Alloys

Coffee Break

Room 2, May 22, Solid State Processes in Structural Materials VI, Chair: Benoit Appolaire

10:30-11:00	Saswata Bhattacharya	Indian Institute of Technology, Hyderabad	Morphology Selection In Bimetallic Nanoparticles: A Phase-Field Study
11:00-11:30	Dongke Sun	Southeast University	Lattice Boltzmann-Phase Field Modeling of The Coherent Hexagonal-To-Orthorhombic Transition In The Elastic Strain Field
11:30-11:50	Caihao Qiu	City University of Hong Kong	Grain Growth Controlled By Disconnection-Mediated Interface Migration
11:50-12:10	Liu Huo	Ruhr-Universität Bochum	A Multi-Phase Field Simulation of The Grain Growth In Smco Polycrystal Assisted By Magnetic Fields

Room 3, May 23, Solid State Processes in Structural Materials VII, Chair: Dong Wang

8:30-9:00	Yongsheng Li	Nanjing University of Science And Technology	Three Dimensional Phase-Field Simulation of Kinetics Evolution of Lamellar Γ -TiAl Alloys
9:00-9:20	Jinlin Li	Dalian University of Technology	Phase-Field Simulation of Coherent Γ/Γ' Microstructures In Co-Based Superalloys
9:20-9:40	Min Yang	Northwestern Polytechnical University	Effect of Γ' Volume Fraction On Creep of Ni-Based Single-Crystal Superalloys: A View From Evolutions of Internal Stress And Strain Fields
9:40-10:00	Ahmadreza Riyahi Khorasgani	Ruhr University of Bochum	Phase Field Modeling of Kirkendall Voids In A Compositionally Graded Superalloy

Coffee Break

Room 3, May 23, Solid State Processes in Structural Materials VIII, Chair: Yongsheng Li

10:20-10:50	Dong Wang	Xi'an Jiaotong University	Phase Field Simulations Assisted Multiscale Microstructure And Property Design of Alloys
10:50-11:10	Xiaolin Tian	North University of China	Spinodal Decomposition Mediated Misorientation Dependence of Grain Boundary Segregation: A Phase-Field-Crystal Study
11:10-11:30	Zheyuan Liu	Central South University	Atomic Scale Insights Into The Self-Assembly of Alternating Aln/Tin Lamellar Nanostructure Via Spinodal Decomposition In Altin Coating
11:30-11:50	Ali Khajezade	University of British Columbia	Phase Field Modeling of Anisotropic Grain Growth

Room 3, May 21, Electrochemical Reaction I , Chair: Lei Chen

8:30-9:00	Yong Du	Central South University	Multiphase Transformation And Mechanical Analysis of Sn-Based Nanoparticle During Lithiation Via CALPHAD-Guided Phase-Field Approach
9:00-9:30	Kejie Zhao	Purdue University	Corrosive Fracture And Its Interplay With Electrochemistry In Battery Electrodes
9:30-9:50	Ahmed Yousfi	Laboratoire De RÉActivITÉ Et Chimie Des Solide	Phase Field Model To Study The Lithiation Dynamics In Single Lifepo4 Crystal Cathode
9:50-10:10	Umair Hussain	Indian Institute of Technology Madras	Voltammetric Study of Phase Separating Materials In Li-Ion Battery Using Phase-Field Modelling

Coffee Break

Room 3, May 21, Electrochemical Reaction II, Chair: Yong Du

10:30-11:00	Lei Chen	University of Michigan-Dearborn	Optimization of External Pressure In Pouch Cell Manufacturing Through Large-Scale Phase-Field Simulations
11:00-11:20	Rui Zhang	Beijing Huairou Laboratory	Electrode Microstructure Design For Electrochemical Energy Storage Devices
11:20-11:40	Li Ting Gao	Shanghai University	Elucidating The Role of Rational Separator Microstructures In Guiding Dendrite Growth And Reviving Dead Li

Room 3, May 22, Electrochemical Reaction III, Chair: Geng Zhang

8:30-9:00	Ying Zhao	Tongji University	Phase-Field Formulation For Predicting Void Evolution At The Li--Electrolyte Interface In All-Solid-State Batteries
9:00-9:20	Sachin Poudel	Silesian University of Technology	A Computational Model For Examining The Role of Externally Applied Stress On Dendrite Growth Pattern In Solid State Lithium-Ion Batteries
9:20-9:40	Yuyang Lu	Westlake University	Phase Field Simulation For Crack Propagation In Polycrystalline Particles In Lithium Ion Batteries
9:40-10:00	Yang Bai	Max-Planck-Institut FÜR Eisenforschung GmbH	Chemomechanical Phase-Field Modeling of Phase Transformation During Iron Oxide Reduction With Hydrogen

Coffee Break

Room 3, May 22, Electrochemical Reaction IV, Chair: Ying Zhao

10:20-10:50	Geng Zhang	Fujian Science & Technology Innovation Laboratory For Energy Devices of China	Improved Electrochemical Phase-Field Model And Its Application To Ionic Deposition And Intercalation
10:50-11:10	Pan Wang	Central South University	A Quasi-Smooth Manifold Element (QSME) Method For Fast And Accurate Numerical Simulation of Stress Corrosion
11:10-11:30	Yajie Li	Shanghai University	Microstructure Optimization of Dendrite Inhibiting Battery Separators Via Phase-Field Modeling

11:30-11:50	Chuanjie Cui	University of Oxford	Phase Field Modelling of Stress Corrosion Cracking
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Room 4, May 21, Brittle And Ductile Fracture I , Chair: Yong Ni

8:30-9:00	Jiaying Wu	South China University of Technology	A Generalized Phase-Field Cohesive Zone Model For Fracture
9:00-9:30	Bai-Xiang Xu	TU Darmstadt	Cohesive Phase-Field Chemo-Mechanical Modeling of Inter- And Trans- Granular Fracture of Polycrystalline Materials: Application In Lithium Ion Battery Cathode Materials
9:30-9:50	Shucheta Shegufta	Friedrich-Alexander-Universität Erlangen-NÜrnberg	Fracture of Porous Media With Thermally Driven Healing of Damage: From Peridynamics To Phase Field Formulations
9:50-10:10	Bin Li	Guangdong Technion-Israel Institute of Technology	Crack Path Selection In Brittle Anisotropic Materials

Coffee Break

Room 4, May 21, Brittle And Ductile Fracture II, Chair: Bai-Xiang Xu

10:30-11:00	Yong Ni	University of Science And Technology of China	Phase Field Modeling of Some Crack Path Problems
10:00-11:20	Yong Zhang	Tongji University	On The Coupling of Fracture And Dielectric Breakdown In Piezoelectric Materials
11:20-11:40	Lin Chen	Northeastern University	Mixed-Mode Crack Opening Computation In The Phase Field Method
11:40-12:00	Qionghuan Zeng	Northwestern Polytechnical University	Phase-Field Investigation On The Effect of Grain Size On The Propagation Behavior of Intergranular Corrosion Cracks In Austenitic Stainless Steels

Room 4, May 22, Brittle And Ductile Fracture III, Chair: Zhanli Liu

8:30-9:00	Yongxing Shen	Shanghai Jiao Tong University	A Scheme For Crack Nucleation In The Phase Field Approach To Brittle Fracture
9:00-9:20	Yuanfeng Yu	Northwestern Polytechnical University	A Length Independent Regularized Phase Field Model For Brittle And Quasi-Brittle Fracture
9:20-9:40	Tao Zhang	South China University of Technology	Phase-Field Modeling of Storage Particle Delamination And Electrolyte Cracking In Cathodes of Solid State Batteries
9:40-10:00	Pei-Liang Bian	Hohai University	A Variationally-Consistent Phase-Field Cohesive Zone Model For Mixed-Mode Fracture Based On Energy Decomposition Scheme

Coffee Break

Room 4, May 22, Brittle And Ductile Fracture IV, Chair: Jiaying Wu

10:20-10:50	Pengyang Zhao	Shanghai Jiao Tong University	Integrated Modeling of Microstructural And Micromechanical Evolution Subjected To Thermal-Mechanical Loadings
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10:50-11:10	Tong Wang	Dalian University of Technology	Mesoscopic Phase Field Modelling of Progressive Damage In Hydroxyl-Terminated Polybutadiene (HTPB) Propellant of Solid Rocket Motor
11:10-11:30	Wenxiang Shi	Southwest Jiaotong University	A Diffusional-Mechanically Coupled Phase Field Model of Shape Memory Alloys In Hydrogen-Rich Environment
11:30-11:50	Shuo Yang	Shanghai Jiao Tong University	An Acceleration Scheme For The Phase Field Fatigue Fracture Simulation

Room 4, May 23, Brittle And Ductile Fracture V, Chair: Pengyang Zhao

8:30-9:00	Zhanli Liu	Tsinghua University	Reveal The Mixed Tensile-Shear Ductile Fracture of Impulsively Loaded Metal Plates By Developing A Phase-Field Fracture Model
9:00-9:20	Yudong Ren	Tongji University	Physically Consistent Nonlocal Macro-Meso-Scale Damage Model For Brittle Fracture
9:20-9:40	Wanxin Chen	The Technical University of Darmstadt	Cohesive Phase-Field Fracture Simulation of Wetting Impact On Chemo-Mechanical Bulk And Interfacial Damage: Application In Li-Ion Battery Cathode Materials
9:40-10:00	Yuanyuan Wang	Dalian University of Technology	Phase-Field Modeling of Crack Propagation Assisted By Irradiation Environment In Tungsten

Coffee Break

Room 4, May 23, Brittle And Ductile Fracture VI, Chair: Yongxing Shen

10:20-10:50	Hongjun Yu	Harbin Institute of Technology	A Thermodynamic Consistent Phase Field Model For The Fracture of Micropolar Medium Considering The Tension-Torsion Coupling Effect
10:50-11:10	Lukas Schöller	Karlsruhe Institute of Technology (KIT)	Phase-Field Modeling of Crack Propagation Considering Multi-Crack Order Parameters And Mechanical Jump Conditions
11:10-11:30	Zaiyong Wang	Taiyuan University of Technology	Numerical Study of Multiple Hydraulic Fractures Propagation In Poroelastic Media Based On Energy Decomposition Phase Field Method
11:30-11:50	Chang Liu	Southwest Jiaotong University	A Phase-Field Model For The Fracture Behavior of Ferroelectric Materials With Flexoelectric Effect

Room 5, May 21, New Method Development I, Chair: Daniel Schneide

8:30-9:00	Alphonse FINEL	Université Paris-Saclay	A New FFT-Based Mechanical Solver For Abrupt Interfaces
9:00-9:30	Ken Elder	Oakland University	Moire Patterns, Dislocations And Defects In Graphene And Hexagonal Boron (Hbn) Layers

9:30-9:50	Bohyun Yoon	Kyung Hee University	Anisotropic Grain Boundary Properties In Grain Growth Modelling: A Phase-Field Approach Using Spherical Gaussian Function
9:50-10:10	Ming Tang	Rice University	Accelerating Microstructure Evolution Simulations With Convolutional And Graph Neural Networks With Adaptive Spatiotemporal Resolution

Coffee Break

Room 5, May 21, New Method Development II, Chair: Ken Elder

10:30-11:00	Lijun Zhang	Central South University	Phase-Field Modeling of Microstructure Evolution: Ready For Materials Design?
11:00-11:20	Dong-Uk Kim	Kookmin University	An Efficient Phase Field Approach To Growth of Stoichiometric Compounds of Aluminum Alloys
11:20-11:40	Qing Wang	Dalian University of Technology	Design And Evolution of Coherent Microstructure In BCC/B2 High-Entropy Alloys Via The Cluster-Formula Approach And Phase-Field Method

Room 5, May 22, New Method Development III, Chair: Lijun Zhang

8:30-9:00	Daniel Schneide	Karlsruhe Institute of Technology (KIT), Germany	Chemo-Elastic Benchmarks In The Context of (Multi)Phase-Field Modeling
9:00-9:30	Pil-Ryung Cha	Kookmin University	Development Endeavors of Microstructure Prediction Models At The ICAPE (Integrated Computer-Aided Process Engineering) Center For Structural Materials
9:30-9:50	Nanxi Chen	Tongji University	Solving Phase Field AC-CH Equations Using A Novel PF-Pinns Framework
9:50-10:10	Anil Kunwar	Silesian University of Technology	Unveiling New Horizons In Materials Interface Understanding Through The Synergy of Phase Field Simulations And Machine Learning Techniques

Coffee Break

Room 5, May 22, New Method Development IV, Chair: Alphonse FINEL

10:30-11:00	Marco Salvalaglio	TU-Dresden	Coarse-Grained Phase Field Crystal Modeling of Elasticity And Defects
11:00-11:30	Jianshan Wang	Tianjin University	Modelling Polymorphic Transformations And Debonding of Bacterial Filagellar Filaments
11:30-11:50	Di Qiu	Shanghai University	Predicting Grain Boundary Dislocation Structures Using Microscopic Phase-Field Model And Neural Networks
11:50-12:10	Lan Shang	Zhejiang Lab	Physics-Informed Neural Networks For The Phase-Field Simulation of Ferroelectric Microstructure Evolution

Room 5, May 23, New Method Development V, Chair: Akinori Yamanaka

8:30-9:00	Namin Xiao	Beijing Institute of Aeronautical Materials, AECC	Design of Titanium Alloy For Aero-Engines Using An ICME Framework
9:00-9:30	Zhi-Feng Huang	Wayne State University, USA	Modeling Two-Dimensional Layered Materials Via Phase Field Crystal Method
9:30-9:50	Nan Wang	Guangdong Technion - Israel Institute of Technology	Connecting Continuum And Quantum Mechanical Electromigration Theories At Mesoscale Using Phase Field Crystal Method
9:50-10:10	Takumi Morino	Yokohama National University	Phase-Field Model For CALPHAD Coupling : Closed-Form Expression For The Interface Composition Satisfying Local Equilibrium
Coffee Break			
Room 5, May 23, New Method Development VI, Chair: Namin Xiao			
10:30-11:00	Akinori Yamanaka	Tokyo University of Agriculture And Technology	Bayesian Data Assimilation-Integrated Phase-Field Modeling of Fracture
11:00-11:20	Olivier Ronsin	Helmholtz Institute Erlangen-NÜrnberg For Renewable Energy, Forschungszentrum JÜlich	Phase-Field Simulations of Photoactive Layer Formation For Solution-Processed Photovoltaics
11:20-11:40	Sen Liu	University of Michigan -- Shanghai Jiao Tong University Joint Institute/Shanghai Jiao Tong University/China	Asymptotic Homogenization Framework For Fracture of Heterogeneous Materials Based On The Phase Field Approach
11:40-12:00	Vincent Feyen	KU Leuven	Scale-Bridging Quantitative High Driving Force Phase-Field Model Applied To The B To A Phase Transformation In Pure Titanium

Poster Sessions

No.	Name	Affiliation	Title
Solidification & Additive Manufacturing			
1	Raphael Schiedung	ICAMS - The Interdisciplinary Centre For Advanced Materials Simulation	Openphase Studio: The Microstructure Simulation Suite
2	Wenhang Ning	University of Science And Technology Beijing	Evolution of Iron-Rich Phase During Solidification of Al-Si-Fe Alloys
3	Shunsuke Kanki	Kyoto Institute of Technology	Estimation of Solid-Liquid Interfacial Properties In Pure Metal Solidification By Integrating Phase-Field With Molecular Dynamics Simulations Using Data Assimilation
4	Namito Yamanaka	Kyoto Institute of Technology	Multi-Phase-Field Lattice Boltzmann Modeling And Systematic Simulations For Semi-Solid Deformation
5	Konosuke Ikeda	Kyoto Institute of Technology	Multi-Phase-Field Lattice Boltzmann Modeling of Microstructure Evolutions Affected By Melt Pool Flow During Powder Bed Fusion

6	Yuki Takahashi	Kyoto Institute of Technology	Efficient Large-Scale Simulations of Multi-Phase-Field Method For Various Scanning Strategies In Metal Additive Manufacturing
7	Ayano Yamamura	Kyoto Institute of Technology	Data Assimilation For Precise Evaluation of Columnar Dendrite Growth Via Phase-Field Method–X-Ray Tomography Integration
8	Murali Uddagiri	Ruhr University Bochum	Phase Field Simulation of Eutectic Solidification of A Multi-Phase Multicomponent Al-Based Alloy
9	Wout Mertens	KU Leuven	Unraveling Cooling Rate Impact On Ti Phase Transition: Integrated Simulations And Experiments
10	TamÁS Pusztai	Wigner Research Centre For Physics	Phase-Field Modeling of Unconventional Morphologies Formed In Biomineralizing Systems
11	Hao Wang	Clausthal University of Technology	Statistical Mechanics Informed Phase Field Modelling of Li ₂ SiO ₃ Solidification From The Li ₂ O-SiO ₂ Melt
12	Heran Wang	Xi'an Jiaotong University	Phase-Field Simulation of The Effect of Stress Field On Pseudospinodal Decomposition
13	Shinji Sakane	Kyoto Institute of Technology	Systematic Evaluation of Settling Equiaxed Dendrite During Solidification By The Phase-Field Lattice Boltzmann Simulations
14	Yuanzuo Wang	Beijing University of Technology	Phase Field Approach To Stress Corrosion Crack of Elastoplastic Solid
15	Siqin Liu	Beihang University	Phase Field Modeling of Transcrystalline Growth During Additive Manufacturing of Semi-Crystalline Thermoplastic Polymer Composites
16	Ying Gao	Xi'an University of Technology	Atomistic Investigation of Coarsening Kinetics of Supported Nanoparticles Using The Phase Field Crystal Model

No.	Name	Affiliation	Title
Solid State Processes in Structure And Functional Materials			
1	Xlin-Wei Wu	Tianjin University	An Electro-Thermo-Mechanical Coupling Phase-Field Model of Defect'S Evolution Induced By Electromigration In Interconnects
2	Wenkui Yang	North University of China	Dislocation Loop And Irradiation-Induced Synergistic-Competitive Mechanism In Cu-Rich Precipitates: A Phase-Field Study
3	Hassaan Ali	Hongik University	Phase Field Modeling of Strain Induced Phase Transformations In Mote2
4	Xiong Shuai	Jiangxi University of Science And Technology	Simulation of Microstructure Evolution And Response of Mechanical Properties And Corrosion Resistance of Aluminum Alloy In Early Aging
5	Liqiang He	Xi'an Jiaotong University	Large Electrostrain With Nearly-Vanished Hysteresis In Eco-Friendly Perovskites By Building Coexistent Ferroelectric Glasses
6	Aoi Nakazawa	Kyoto Institute of Technology	Continuous Simulation From Powder Compaction To Sintering Using High-Performance Multi-Phase-Field Computing
7	Juan Zhang	Southwest Jiaotong University	A Phase-Field-Finite-Element Simulation On Ratchetting of Medium Manganese TRIP Steel
8	Shenglong Wang	Nanjing University of Science And Technology	Morphology And Phase Boundary Evolutions of Co-Based Superalloy With Lattice Mismatch Strain

9	Zhiheng Luo	Guangdong Technion- Israel Institute of Technology	Effects of Space Charge On Freestanding Ferroelectric Thin Films
10	Tianjiao Dong	Xi'an Jiaotong Universit	Phase Field Simulations For The Crossover From Sharp Martensitic Transformation Into Smooth Strain Glass Transition By Fine Precipitates
11	Yunting Su	Xi'an Jiaotong University	Computer Simulations For Shuffle-Regulated Strain Glass Transition In Compositionally Modulated Ti-Nb Alloys
12	Jianwei Li	Xi'an Jiaotong University	Effects of External Stress On Microstructure Evolution In Γ -TiAl Alloys By Phase Field Method
13	Tianmeng Zhang	Guangdong Technion – Israel Institute of Technology (GTIT)	Exploring The Role of Dislocations In Solid-State Dewetting Through Phase Field Crystal Method
14	Jiyuan Ding	Jilin University	A Disclination-Based Theory of Twin-Twin Reactions: Complete Analyses of Symmetry-Correlated Deformation Pathways, Twinning Disclination Generation And Resulting Stress Concentration
15	Silong Quan	School of Mechanical And Electronic Engineering, East China University of Technology, Nanchang, Jiangxi, China	Study On Interfacial Dislocation Network Transition And Formation Mechanism In Van Der Waals Heterojunctions
16	Yuefeng Sheng	Shanghai University/China	Phase Field Method Study On The Microscopic Mechanism of Twinning And Dislocations In Mn-Cu Damping Alloys
17	Chunfeng Du	Jilin University	A Lie-Algebra-Based Description of Disclination Densities And The Quantification of Partial Disclinations In Deformed Polycrystalline Metals
18	Meixiong Zhu	Institute of Metal,Research Chinese Academy of Sciences	Enhancing Energy Storage Performance In Bifeo3 Films Via Oxygen Vacancies And Strain Engineering
19	Zhenzhi Liu	Shanghai University	An Integrated Simulation Scheme To Predict Microstructural Evolution And Creep Behavior For A Nine-Component Ni-Based Superalloy
20	Kohta Kasai	Kyoto University	Quasiparticle-Like Structures And Behaviors of Magnetic Skyrmion Lattice Defects From Phase-Field Simulations
21	Huimei Li	Institute of Metal,Research Chinese Academy of Sciences	Electric-Field-Induced Topological Transition In PbTiO ₃ /SrTiO ₃ Superlattice
22	Xi Liu	Central South University	Phase Field Simulation of Grain Ripening During Liquid Phase Sintering of NbC Matrix Cermets
23	Yiqi Guan	Central South University	Phase-Field Simulation of Core-Rim Structure During Early Sintering In TiC-WC-Ni Cermet
24	Hong Mao	Hunan Institute of Science And Technology	Strain-Induced Grain Boundary Migration And Grain Rotation In Polycrystalline Metals: Atomic-And Meso-Scale Phase Field Simulations
25	Jiachen Hu	Southwest Jiaotong University	Plastic Deformation of Magnesium Single Crystal: A Crystal Plasticity Coupled Twinning Phase Field Simulation
26	Rongpei Shi	Harbin Institute of Technology (Shenzhen)	The Influence of Particle Size And Its Distribution On Microstructure Evolution And Densification Kinetics During Sintering - A Phase-Field Simulation Study

27	Dan Sun	Nuclear Power Institute of China	Phase-Field Simulation of Recrystallization Coupling Bubble Evolution During Irradiation In UO ₂
28	Bo Xu	Sichuan University	Toward Tunable Functional Properties of NiTi Shape Memory Alloys By Grain Size Engineering: A Phase Field Study

No.	Name	Affiliation	Title
Electrochemical Reactions, Corrosion And Oxidation			
1	Jiachen Wang	North University of China	Phase-Field Simulation of Interface Growth of Magnesium Metal Anodes During Electrodeposition
2	Haodong Zhang	Karlsruhe Institute For Technology	Thermodynamics of Dielectric Materials

No.	Name	Affiliation	Title
Brittle And Ductile Fracture			
1	Ye Feng	Northwestern Polytechnical University	Phase-Field Method of Cohesive Fracture: Mixed-Mode Cohesive Law And Frictional Contact
2	Zhipeng Yao	Friedrich-Alexander-Universität Erlangen-NÜRNberg	A Phase Field Model For Interface Sliding And Interface Failure Parameterized By DFT Data
3	Wenquan Zhou	Northwest A&F University	Investigations Into The Deformation Behavior of Graphene Loops By Using Phase Field Crystal Model
4	Xin Li	Nanjing University of Aeronautics And Astronautics	A Phase-Field Fracture Model For Fatigue Behavior In Fiber-Reinforced Composites Considering Anisotropic Fatigue Effects

No.	Name	Affiliation	Title
New Method Development And Integration With ML.			
1	Zhaobo Liu	Beijing Institute of Technology	Electric-Field-Induced Crystallization of Hf _{0.5} Zr _{0.5} O ₂ Thin Film Based On Phase-Field Modeling
2	Hwanwook Lee	Hongik University	Phase-Field Simulation of Thin Film Deposition And Crystallization
3	Woojin Jung	Kyunghee University	Advanced Phase-Field Modeling of Constituent Redistribution In U-Zr Fuel Considering Fission Gas
4	Yechan Kim	Hongik University	Multiphysics Modeling of Thermal Disturbance In Three-Dimensional Phase-Change Memory
5	Yao Yang	Zhejiang Lab	Deep Multi-Task Learning With Multi-Scale Features For Metal-Organic Framework Properties Prediction
6	Hongwen Zhang	Zhejiang Lab	Predicting Crystal Material Property By Combining Composition And Structure
7	Hongmin Zhang	Karlsruhe Institute of Technology	Effect of Wall Free Energy Formulation On The Wetting Phenomenon: Conservative Allen-Cahn Model
8	Xin SU	Guangdong Technion-Israel Institute of Technology	Modeling Grain Boundary Motion Driven By Electric Current
9	Ingo Steinbach	Ruhr-University Bochum	Quantum Phase Field
10	Liu Xi	Dalian University of Technology	A Quantitative Phase-Field Model of Gas Bubble Evolution In Phase Boundary of Uranium-Based Fuels

11	Jiajun Zhao	Dalian University of Technology	Three-Dimensional Phase-Field Modelling of Fission Gas Resolution Effect On Nano-Sized Bubble Formation In UO ₂
12	Xuejian Wang	Friedrich-Alexander University of Erlangen-NÜrnberg	An Extended Phase-Field-Drift-Diffusion Model For Oxygen Vacancy Migration In Single-Crystal Barium Titanate
13	Meiling He	Central South University	Determination of Elastic-Plastic Parameters of Binder Phase In Cemented Carbide Using Nanoindentation And Finite Element Simulation
14	Xiaoxiao Chen	Wuhan University of Technology	Programming Polarity Heterogeneity of Energy Storage Dielectrics By Bidirectional Intelligent Design