

## **OPENING CEREMONY & PLENARY SESSIONS**

### **31 May 2010 (Monday) Ballroom**

#### **Opening Ceremony 8:00 – 8:40**

**Chair:** Prof. Weimin ZHANG

Prof. Wenjun ZHANG (SJTU President)

Dr. George E Totten (Conference Chair)

Dr. Robert B Wood (IFHTSE Secretary-General)

#### **Session A(a) 08:40 – 09:50**

**Chair:** Prof. Evan MA

08:40 – 09:15 **A1** George E Totten (*Texas A&M University, USA*)

[Process modeling for heat treatment: Current status and future developments](#)

09:15 – 09:50 **A2** T Inoue (*Fukuyama University, Japan*)

A mechanism of transformation plasticity and the identification of the characteristics

#### **09:50 - 10:20 Coffee break**

#### **Session A(b) 10:20 – 12:05**

**Chair:** Prof. T Inoue

10:20 – 10:55 **A4** Jianguo LIN (*Imperial College London, UK*)

[Hybrid forming processes for the production of lightweight high-strength automotive panel parts](#)

10:55 – 11:30 **A7** Jian LU (*The Hong Kong Polytechnic University, HK*)

Integrated design of product and component realized by thermal processes with pre-stressed engineering approach

11:30 – 12:05 **A5** S Denis (*LSG2M-UMR CNRS/INPL/UHP, France*)

Prediction of heat treatment residual stresses and distortions: Recent developments

#### **12:05 - 13:00 Lunch**

#### **Session A(c) 13:00 – 14:45**

**Chair:** Prof. Jian LU

13:00 – 13:35 **A6** Baicheng LIU (*Tsinghua University, China*)

[Modeling and simulation on deformation of heavy hydro turbine casting and heat treatment processes](#)

- 13:35 – 14:10 **A3 Jiansheng PAN** (*Shanghai Jiao Tong University, China*)  
Green heat treatment – the sustainable way of industrial developments
- 14:10 – 14:45 **A8 Evan MA** (*Johns Hopkins University, USA*)  
Modeling amorphous structures produced by melt quenching: Zr-Cu-Al  
bulk metallic glass versus Ge-Sb-Te chalcogenide phase-change glass

**14:45 - 15:15 Coffee break**

## **PARALLEL SESSIONS - 1**

**31 May 2010 (Monday) 15:15 – 17:00**

### **Session B(a) Meeting room No. 1**

**Chairs: Profs. Xuejun JIN & Huiping LI**

- 15:15 – 15:40 **B13 - Keynote Bo WU** (*Fuzhou University, China*)  
A general approach on the order-disorder transition of complex  
intermetallics by combining thermodynamic model with first-principles calculations
- 15:40 – 16:00 **B12 Chaoyang SUN** (*University of Science and Technology Beijing,  
China*)  
Experimental study of bainite transformation plasticity during continuous  
cooling for Armour steel
- 16:00 – 16:20 **B03 Zhuo YU** (*Leibniz University Hannover, Germany*)  
[Computation of the Isothermal Transformation Diagrams of  
42CrMo4 Steel from the Dilatometer Measurements with Continuous Cooling](#)
- 16:20– 16:40 **B10 Gangbo TANG** (*Central Iron and Steel Research Institute, China*)  
[Calculation on the incubation period of proeutectoid ferrite  
transformation for Si-Mn trip steel](#)
- 16:40 – 17:00 **D11 Jun DING** (*Shanghai Jiao Tong University, China*)  
String-like atomic motion in metallic glass under deformation

### **Session C(a) Meeting room No. 4**

**Chairs: Profs. S MacKenzie & D Landek**

- 15:15 – 15:40 **E04 - Keynote BL Ferguson** (*Deformation Control Technology, Inc.,  
USA*)  
[Using simulation for heat treat process design: Matching the quenching  
process with steel grade and product geometry](#)
- 15:40 – 16:00 **C09 Zhichao LI** (*Deformation Control Technology, Inc., USA*)  
[Computer modeling and validations of steel gear heat treatment  
processes using commercial software DANTE®](#)
- 16:00 – 16:20 **C10 K Cvetkovski** (*Chalmers University of Technology, Sweden*)  
[Short-time tempering kinetics of quench hardened pearlitic steels](#)

- 16:20 – 16:40 **C01 Weimin GAO** (*Deakin University, Australia*)  
[Integrated fluid-thermal-structure numerical analysis for the quenching of metallic components](#)
- 16:40 – 17:00 **C14 Tao CONG** (*Harbin Institute of Technology, China*)  
[First principles characterization of phase Ti<sub>2</sub>AlN prepared by plasma nitriding of Ti<sub>3</sub>Al alloy](#)

### **Session D(a) Meeting room No. 3**

**Chairs: Profs. Jianguo LIN & A Gontarz**

- 15:15 – 15:35 **D01 A Gontarz** (*Lublin University of Technology, Poland*)  
[Numerical analysis of unconventional forging process of hollowed shaft from Ti-6Al-4V alloy](#)
- 15:35 – 15:55 **D02 Z Pater** (*Lublin University of Technology, Poland*)  
[The analysis of the cross-wedge rolling process of toothed shafts made from 2618 aluminium alloy](#)
- 15:55 – 16:15 **D03 Haibo XIE** (*University of Wollongong, Australia*)  
 FEM temperature simulation of accelerated cooling on Run-out Table during hot rolling
- 16:15 – 16:35 **D04 Xiawei YANG** (*Harbin Institute of Technology, China*)  
[Fractal studies on primary phase morphology of the TA15 titanium alloy after hot compressive deformation](#)
- 16:35 – 16:55 **D07 Jixiang ZHANG** (*Chongqing Jiaotong University, China*)  
 Research of Al-Mg-Si alloy hot-rolled multi-stage recrystallization by experiment and simulation

### **Session E(a) Meeting room No. 2**

**Chairs: Profs. Liu-Ho CHIU & T Luebben**

- 15:15 – 15:40 **E01 - Keynote Young-Kook LEE** (*Yonsei University, Korea*)  
 Computer simulation of microstructure and distortion during quenching and tempering process of medium carbon steel
- 15:40 – 16:00 **E06 S MacKenzie** (*Houghton International, Inc., USA*)  
[Effect of alloy on the distortion of oil quenched automotive pinion gears](#)
- 16:00 – 16:20 **E09 Dae-Hoon KO** (*Pusan National University, Korea*)  
 Prediction and measurement of residual stress for 6061 aluminum alloy during T6 heat treatment
- 16:20 – 16:40 **E02 T Luebben** (*Foundation Institute of Materials Science (IWT), Germany*)  
[Dimensional analysis of distortion during through hardening of cylindrical steel workpieces](#)
- 16:40 – 17:00 **E03 J Rath** (*Foundation Institute of Materials Science (IWT), Germany*)  
[Generation of compressive residual stresses by high-speed water quenching](#)

### **Session G(a) Meeting room No. 5**

**Chairs: Profs. Hao LU & Bolin HE**

- 15:15 – 15:40 **G13 - Keynote Hsin-Chih LIN** (*National Taiwan University, Taiwan*)  
The Surface Coatings of Super-Light Magnesium-Lithium Alloys
- 15:40 – 16:00 **G06 Yongcheng LIN** (*Central South University, China*)  
Finite element model for the bonding process of anisotropic conductive films joints
- 16:00 – 16:20 **G07 Jihong YANG** (*Swinburne University of Technology, Australia*)  
3D transient thermal modelling of the temperature profile during laser assisted machining of Ti6Al4V alloy
- 16:20 – 16:40 **G11 Changwen CUI** (*Fuzhou University, China*)  
[Three-dimensional numerical simulation of splat formation on substrates with different conditions in plasma spraying](#)
- 16:40 – 17:00 **G09 Zhenhai XU** (*Harbin Institute of Technology, China*)  
Deposition conditions effect on TiN film growth by molecular dynamics simulations

**17:00 – 18:00 Supper**

## **PARALLEL SESSIONS - 2**

**01 June 2010 (Tuesday) 08:00 – 10:00**

### **Session B(b) Meeting room No. 1**

**Chairs: Profs. Baicheng LIU & Bo WU**

- 08:00 – 08:20 **B32 Yao SHEN** (*Shanghai Jiao Tong University, China*)  
The effects of coherency stress on interdiffusion across coherent multilayer interfaces
- 08:20 – 08:40 **B25 Xueshao QIU** (*Zhengzhou University of Light Industry, China*)  
The reconstruction of the temperature field base on Matlab and two-dimensional interpolation
- 08:40 – 09:00 **B24 Wei YOU** (*North China Institute of Science and Technology, China*)  
Predicting the CCT Diagrams of Steels Using Artificial Neural Network Models
- 09:00 – 09:20 **B06 Weimin GAO** (*Deakin University, Australia*)  
Modelling hydrogen diffusion and phase transformation for titanium powder hydrogenization-dehydrogenization (HDH) rolling process
- 09:20 – 09:40 **B17 Likun ZHANG** (*Fuzhou University, China*)  
Prediction of the site occupancy of alloying elements in REFe<sub>12</sub>-xM<sub>x</sub>-based alloy with ThMn<sub>12</sub> prototype by combining thermodynamic model with first-principles calculations

**Session C(b) Meeting room No. 4****Chairs: Profs. S Denis & M Reich**

- 08:00 – 08:25 **B20 - Keynote Jer-Ren YANG** (*National Taiwan University*)  
The heat treatment of superbainitic ferrite
- 08:25 – 08:45 **C03 M Reich** (*University of Rostock, Germany*)  
[Mechanical properties of undercooled aluminium alloys and their implementation in quenching simulation](#)
- 08:45 – 09:05 **C08 Dongmei ZHU** (*University of Science and Technology Beijing, China*)  
Numerical simulation research on heat transfer of air mist spray cooling
- 09:05 – 09:25 **C02 K Babu** (*Indian Institute of Technology Madras, India*)  
[Finite element modeling of quenching heat treatment of AISI 4140 steel with phase transformation](#)
- 09:25 – 09:45 **C07 D Landek** (*University of Zagreb, Croatia*)  
Prediction of properties of gas-quenched work pieces based on the modified hardenability test
- 09:45 – 10:05 **C05 Guoyong LIU** (*University of Science and Technology Beijing, China*)  
[Influencing factors on cooling uniformity of large caliber seamless pipe for quenching](#)

**Session D(b) Meeting room No. 3****Chairs: Profs. B Rivolta & Yanlin HE**

- 08:00 – 08:25 **D41- Keynote Fuxing YIN** (*National Institute for Materials Science, Japan*)  
[Hot-rolling bonded multilayered composite steels and the varied tensile deformation behavior](#)
- 08:25 – 08:45 **D14 Yongcheng LIN** (*Central South University, China*)  
Numerical simulation for effects of friction on quality of low alloy steel forgings
- 08:45 – 09:05 **D09 Yanlin HE** (*Shanghai University, China*)  
[Influence of soaking temperature on microstructure of multi-pass compression deformation for low carbon steels](#)
- 09:05 – 09:25 **D12 Xudong ZHOU** (*Henan University of Science and Technology, China*)  
[The forging penetration efficiency of steel H13 stepped shaft radial forging with GFM forging machine](#)
- 09:25 – 09:45 **D40 Ganlin XIE** (*University of Science and Technology Beijing, China*)  
[Microstructural modeling of dynamic recrystallization in Nb microalloyed steels](#)
- 09:45 – 10:05 **D23 Jixiang ZHANG** (*Chongqing Jiaotong University, China*)  
[A novel Monte Carlo Potts Model in metal recrystallization simulation](#)

### **Session E(b) Meeting room No. 2**

**Chairs: Profs. M Narazaki & Ning YU**

- 08:00 – 08:25 **E16 - Keynote M Narazaki** (*Utsunomiya University, Japan*)  
Simulation of asymmetrical quench distortion of long thin steel parts
- 08:25 – 08:45 **E07 J Ahlström** (*Chalmers University of Technology, Sweden*)  
[Modelling of distortion during cooling and machining of aluminium engine blocks with cast-in cast iron liners](#)
- 08:45 – 09:05 **E08 F Frerichs** (*Stiftung Institut für Werkstofftechnik, Germany*)  
[Effects of Inhomogeneous Distributions of Distortion Potential on Out of Roundness of Rings](#)
- 09:05 – 09:25 **E10 MV LI** (*Portland State University, USA*)  
Microstructure evolution and residual stresses in coke drum repair welds
- 09:25 – 09:45 **E13 Guanjie YUAN** (*University of Science and Technology Beijing, China*)  
[Finite element modeling of hydrostatic stresses distribution in copper dual-damascene interconnects](#)

### **Session G(b) Meeting room No. 5**

**Chairs: Profs. M Rachik & Wenya LI**

- 08:00 – 08:20 **G01 Jianglin HUANG** (*University of Birmingham, UK*)  
[Modelling of hydrogen effect on porosity formation in electron beam welded titanium-based alloys](#)
- 08:20 – 08:40 **G03 Huajun ZHANG** (*Harbin University of Science and Technology, China*)  
[Stress and distortion of simultaneous control by two-sided arc welding for thick plate of high strength steel](#)
- 08:40 – 09:00 **G05 Liang CHEN** (*Northwestern Polytechnical University, China*)  
[Effects of processing parameters on the temperature field and axial shortening of inertia friction welded GH4169 joints by numerical simulation](#)
- 09:00 – 09:20 **G20 R Shateri** (*Islamic Azad university, Iran*)  
Effect of solution annealing in post and preheat conditions on microstructure and mechanical properties of IN-718 weld metal
- 09:20 – 09:40 **G02 Ali Slimani** (*Compiègne University of Technology, France*)  
[High temperature indentation test to improve constitutive model for welding simulation](#)
- 09:40 – 10:00 **D35 Huagui HUANG** (*Yanshan University, China*)  
[Research on pores deformation welding condition for manufacturing of heavy forgings](#)

**10:00 – 10:30 Coffee Break**

**PARALLEL SESSIONS - 3****01 June 2010 (Tuesday) 10:00 – 12:00****Session B(c) Meeting room No. 1****Chairs: Profs. Zhaohui JIN & Ping ZHANG**

- 10:30 – 10:55 **B21 - Keynote** Xuejun JIN (*Shanghai Jiao Tong University, China*)  
Microstructure design and implementation of new generation high strength multi-phase steels
- 10:55 – 11:15 **B08** Rongda ZHAO (*Harbin Institute of Technology Harbin, China*)  
[The formation of nanometer coherent structures during spinodal decomposition and ordering coexistence phase transformation in Fe-24Al alloys](#)
- 11:15 – 11:35 **B15** Zhenhuan ZHENG (*Fuzhou University, China*)  
Prediction of the site occupancies of alloying elements in D019-type Ti3Al-based alloy by combining thermodynamic model with ab initio Calculations
- 11:35 – 11:55 **B19** Tuo CHEN (*Fuzhou University, China*)  
Prediction of the ordering behaviors of alloying elements Ta, V, Mo and Hf in Ti2AlNb-based orthorhombic alloy by combining thermodynamic model with ab initio calculations

**Session C(c) Meeting room No. 4****Chairs: Profs. Jer-Ren YANG & BL Ferguson**

- 10:30 – 10:55 **E05 - Keynote** S MacKenzie (*Houghton International, Inc., USA*)  
[Comparison between High Pressure Hydrogen Quenching and Oil Quenching of Steel Parts Considering Load Effect \(\*\*Present in "C"\*\*\)](#)
- 10:55 – 11:20 **C11 - Keynote** Xiaodong HU (*Saitama Institute of Technology, Japan*)  
[The Developments and application of computer simulation code on Induction heat treatment process](#)
- 11:20 – 11:40 **H04** Min FENG (*Dalian Maritime University, China*)  
[Phase diagram simulation and heat-treatment of a Ni-based alloy for high-temperature vitriol pump](#)
- 11:40 – 12:00 **C13** MK Torbati (*Ferdowsi University of Mashhad, Iran*)  
Thermodynamic analytical modeling of gas reactions to investigate the effect of environmental temperature and humidity on carbon potential in gas carburizing process

**Session D(c) Meeting room No. 3****Chairs: Profs. Liwen ZHANG & Jixiang ZHANG**

- 10:30 – 10:55 **B02 - Keynote** B Rivolta (*Politecnico di Milano, Italy*)  
[Recrystallization kinetics of austenite in Nb microalloyed steel](#)
- 10:55 – 11:15 **D08** Weiming ZENG (*Shanghai University, China*)

[Recrystallization behavior of a Ti-microalloyed complex phase steel during hot compression](#)

11:15 – 11:35 **D37** **Xiao ZHAO** (*Northwestern Polytechnical University, China*)  
[Numerical analysis of the effect of material properties on the deformability of near hemispherical shell](#)

11:35 – 11:55 **D38** **Minjie LAI** (*Northwestern Polytechnical University, China*)  
[First-principles prediction of ductility in  \$\beta\$ -type Ti-Mo binary alloys](#)

**Session E(c) Meeting room No. 2**

**Chairs: Profs. Young-Kook LEE & T Uehara**

10:30 – 10:50 **E15** **Liu-Ho CHIU** (*Tatung University, Taiwan*)  
[Distortion measurement of martensitic stainless mold steels by vacuum heat treatment](#)

10:50 – 11:10 **E11** **V Shchukin** (*Khristianovich Institute of Theoretical and Applied Mechanics, Russia*)  
Numerical modeling of the stress-and-strain state of the surface layer of steel at high-frequency pulse treating

11:10 – 11:30 **E12** **T Uehara** (*Yamagata University, Japan*)  
Computer simulation of microscopic stress distribution in complex microstructure using a phase field model

**Session G(c) Meeting room No. 5**

**Chairs: Profs. Hsin-Chih LIN & Wenliang WANG**

10:30 – 10:50 **G10** **Lin MA** (*Academy of Armored Force Engineering, China*)  
[The analysis of stress and strain field of the laser cladding process on the ring circular orbit](#)

10:50 – 11:10 **G12** **Dejun KONG** (*Jiangsu Polytechnic University, China*)  
[Structures and properties of VC coating on Cr12MoV cold working die surface steel by TD process](#)

11:10 – 11:30 **B05** **Yaogen SHEN** (*City University of Hong Kong, HK*)  
Size-dependent lognormal grain size distribution in nanocomposite films

11:30 – 11:50 **G19** **Yi-Shiun DING** (*National Taiwan Ocean University, Taiwan*)  
[Notched tensile fracture of Ti-15V-3Cr-3Sn-3Al Alloy welds](#)

**12:00 - 13:00 Lunch**



## **PARALLEL SESSIONS - 4**

**01 June 2010 (Tuesday) 13:00 – 15:00**

### **Session B(d) Meeting room No. 1**

**Chairs: Profs. Yao SHEN & Yaogen SHEN**

- 13:00 – 13:25 **B31 - Keynote** Jihua ZHANG (*Shanghai Jiao Tong University, China*)  
[Microstructural evolution of two way hysteresis-free shape memory effect in Mn-based antiferromagnetic alloys](#)
- 13:25 – 13:45 **B23** Maohua LIN (*Fuzhou University, China*)  
[Design of magnetic high entropy alloy with FCC structure by combining thermodynamic model with first-principles calculations](#)
- 13:45 – 14:05 **B14** Yongqiang LONG (*Henan University of Science and Technology, China*)  
[First-principles investigation of the structural stability and electronic property of precipitates on the Cu-rich side of Cu-Ni-Si alloys](#)
- 14:05 – 14:25 **B22** Chaohui ZHANG (*Fuzhou University, China*)  
[Design of high entropy alloy with FCC structure by combining thermodynamic model with first-principles calculations](#)
- 14:25 – 14:45 **B18** Guoxin YE (*Fuzhou University, China*)  
Prediction of the site occupancy of alloying elements in Ni<sub>3</sub>Al-based L12 alloy by combining thermodynamic model with first-principles Calculations

### **Session C(d) Meeting room No. 4**

**Chairs: Profs. Wei SHI & L Petrova**

- 13:00 – 13:25 **C06 - Keynote** Wei SHI (*Tsinghua University, China*)  
[Modeling of transformation plasticity during quenching processes of large steel forgings and experimental validation](#)
- 13:25 – 13:45 **C16** L Petrova (*Moscow State Automobile and Road Construction State Technical University, Russia Federation*)  
[Modeling of processes of thermo-chemical treatment: Traditions of Russian Scientific School](#)
- 13:45 – 14:05 **H09** Tei-Chen CHEN (*National Cheng Kung University, Taiwan*)  
Nanoscale mechanical behaviors of nanostructured silicon
- 14:05 – 14:25 **C18** Jian XU (*University of Science and Technology Beijing, China*)  
[Numerical simulation for thermal process upon reducing gas composition of pre-reduction shaft furnace](#)
- 14:25 – 14:45 **C20** N Svetushkov (*Moscow State Automobile and Road Institute, Russia*)  
Geometric integral methods in simulation of thermal processes

### **Session D(d) Meeting room No. 3**

**Chairs: Profs. Dongying JU & Huagui HUANG**

- 13:00 – 13:25 **D16 - Keynote Liwen ZHANG** (*Dalian University of Technology, China*)  
[3D Finite Element Simulation of Rod and Wire Continuous Rolling](#)
- 13:25 – 13:45 **D25 Yanshu ZHANG** (*Advanced Manufacture Technology Center, China Academy of Machinery Science & Technology, China*)  
[The Microstructure prediction of magnesium alloy AZ31D during hot extrusion](#)
- 13:45 – 14:05 **D26 Yüewen ZHAI** (*Beijing Research Institute of Mechanical & Electrical Technology, China*)  
[The application of numerical simulation technology to the forming process of large scale tee](#)
- 14:05 – 14:25 **D06 Jisen QIAO** (*State Key Laboratory of Gansu Advanced Non-ferrous Metal Materials, China*)  
Study on temperature evolution and metal flow of 6005A aluminum alloy during indirect hot extrusion
- 14:25 – 14:45 **D22 Lu LU** (*Tianjin Polytechnic University, China*)  
[Simulation of the tube forming process in Mannesmann mill](#)
- 14:45 – 15:05 **D05 Tingfang ZHANG** (*Nanchang University, China*)  
[Simulation experiment on friction coefficients during warm deep drawing of magnesium alloy sheet](#)

### **Session F(a) Meeting room No. 2**

**Chairs: Profs. P Gardin & Yitao YANG**

- 13:00 – 13:20 **F09 Shuang-Shii LIAN** (*National Taiwan University, Taiwan*)  
[Simulation study of the effects of parameters of graphite susceptor for induction melting process of polycrystalline silicon](#)
- 13:20 – 13:40 **F13 Xiaohua ZHAO** (*Northwestern Polytechnical University, China*)  
[Numerical simulation of fluid flow caused by buoyancy forces during VAR process](#)
- 13:40 – 14:00 **B01 P Gardin** (*Arcelor Mittal Global R&D, France*)  
[Mathematical modeling: an efficient way to predict inclusion evolution in liquid steel](#)
- 14:00 – 14:20 **F04 Shikun XIE** (*Jinggangshan University, China*)  
[Remelting technology and microstructural evolution of semi-solid Al-7Si-2RE alloy](#)
- 14:20 – 14:40 **F12 Liang HE** (*Worcester Polytechnic Institute, USA*)  
[Modeling on Directional Solidification of Solar Cell Grade Multicrystalline Silicon Ingot Casting](#)

**Session F(b) Meeting room No. 5**

**Chairs: Profs. NK Prabhu & Fuxing YIN**

- 13:00 – 13:20 **B04 Jianzheng GUO** (*ESI US R&D, USA*)  
Prediction of microstructure and mechanical properties in aluminum castings after heat treatment
- 13:20 – 13:40 **F02 Lijia HE** (*Liaoning University of Technology, China*)  
Modification analysis of hypereutectic Al-Si alloy with P or phosphide by EET
- 13:40 – 14:00 **F01 NK Prabhu** (*National Institute of Technology Karnataka, India*)  
[Measurement of heat transfer coefficients during downward solidification of commercially pure Zn and ZA8 alloy](#)
- 14:00 – 14:20 **F06 Rongzhen XIAO** (*Lanzhou University of Technology, China*)  
[Phase-field modeling of free dendritic growth in a binary alloy under a forced flow](#)
- 14:20 – 14:40 **F05 Li WANG** (*Tsinghua University, China*)  
[Numerical simulation of macrosegregation during steel ingot solidification using continuum model](#)

**15:00 – 15:30 Coffee break**

**PARALLEL SESSIONS - 5**

**01 June 2010 (Tuesday) 15:30 – 17:30**

**Session H(a) Meeting room No. 1**

**Chairs: Profs. Tei-Chen CHEN & I Petrc**

- 15:30 – 15:50 **H07 Yu ZHANG** (*University of Science and Technology Beijing, China*)  
[Development and application of thermal mathematical model of iron ore pellet bed in grate](#)
- 15:50 – 16:10 **H10 Mei ZHANG** (*Shanghai University, China*)  
[High temperature mechanical properties of a Ti-microalloyed complex phase steel](#)
- 16:10 – 16:30 **H11 Ying BA** (*Harbin Institute of Technology, China*)  
Thermo-elasto-plastic damage analysis of functionally graded materials under thermal loading
- 16:30 – 16:50 **H12 Yeqiong WU** (*Harbin Institute of Technology, China*)  
[Properties and electronic structure of iron under pressure up to 30GPa](#)
- 16:50 – 17:10 **H13 Guofei LIU** (*University of Mining and Technology (Beijing), China*)  
Numerical simulation of defect inspection using electromagnetic stimulated thermography

17:10 – 17:30

- 17:30 – 17:50 **H20 Lei LU** (*Inner Mongolia University of Technology, China*)  
A symmetry-homotopy hybrid algorithm for solving boundary value problem of partial differential equations

### **Session H(b) Meeting room No. 4**

**Chairs: Profs. Duc Hai Do & Sheng WANG**

- 15:30 – 15:50 **H01 B ŠAMEC** (*University of Maribor, Slovenia*)  
[Numerical analysis of a railway brake disc](#)
- 15:50 – 16:10 **H02 Grega Oder** (*University of Maribor, Slovenia*)  
[Numerical analysis of braking discs for a »Taurus« class locomotive](#)
- 16:10 – 16:30 **H03 Duc Hai Do** (*Magdeburg University, Germany*)  
Mathematical modelling and simulation of lime burning process in a normal shaft kiln
- 16:30 – 16:50 **H05 Haiwei ZHENG** (*University of Science and Technology Beijing, China*)  
[Optimization of pellet production process parameters in grate using simulation results](#)
- 16:50 – 17:10 **H06 Zhiyin XIE** (*University of Science and Technology Beijing, China*)  
[Optimization of pellet induration process parameters in rotary kiln using simulation results](#)
- 17:10 -17:30 **H19 Zhong ZHENG** (*Hubei University of Technology, China*)  
[Effects of conformal cooling channel on injection molding and productivity](#)

### **Session D(e) Meeting room No. 3**

**Chairs: Profs. Lin CHEN & Z Pater**

- 15:30 – 15:50 **D13 Zhu SU** (*Chongqing University, China*)  
Thermal-mechanical coupling simulation and springback control in hot forming process of fan blade
- 15:50 – 16:10 **D18 Lin CHEN** (*Inner Mongolia university of science and technology, China*)  
[Numerical simulation analysis in cooling temperature field and bending deformation after rolling of 100-meter rail](#)
- 16:10 – 16:30 **D19 Lin CHEN** (*Inner Mongolia university of science and technology, China*)  
[Research and Application of Pre-bent automatic control Models of 100 meters rail](#)
- 16:30 – 16:50 **D20 Kun CHEN** (*Shanghai University, China*)  
[Simulation of large forging flat-anvils stretching process and its optimization](#)

- 16:50 – 17:10 **D21 Dong HE** (*Harbin Institute of Technology, China*)  
[A study of FCC metal tension behavior by crystal plasticity finite element method](#)
- 17:10 – 17:30 **D36 Hua WANG** (*Shanghai University, China*)  
[FEM study of the tensile behavior of annealed ULC-BH steels](#)

### **Session H(c) Meeting room No. 2**

**Chairs: Profs. J Ahlstrom & Junxiao FENG**

- 15:30 – 15:50 **H14 Guohua LI** (*China University of Mining & Technology (Beijing), China*)  
 Numerical Simulation of the NDT of Metallic Composites Plate by Infrared Thermography
- 15:50 – 16:10 **H28 Zhibin SUN** (*University of Science and Technology Beijing, China*)  
[Optimization of pellet production process parameters in annular cooler using simulation results](#)
- 16:10 – 16:30 **H29 Sheng WANG** (*RIKEN, Japan*)  
[Performance, flow and thermal characteristics of a viscous micro/nano pump simulated by particle/continuum methods](#)
- 16:30 – 16:50 **H15 Wenjun ZHAO** (*Harbin Institute of Technology, China*)  
[Modeling of recirculation zone around the nozzle used in spray forming](#)
- 16:50 – 17:10 **H16 Linghang XING** (*Changjiang Scientific Research Institute, China*)  
[Modified QUICK schemes for 3D advection-diffusion equation of pollutants on unstructured grids](#)
- 17:30 – 17:50 **H18 Yanzhe LI** (*Lanzhou Jiao Tong University, China*)  
 Modeling and simulation for electromagnetic shielding performance of magnesium

### **Session F(c) Meeting room No. 5**

**Chairs: Profs. Shuang-Shii LIAN & Jianfeng GU**

- 15:30 – 15:50 **F14 Enyu GUO** (*Tsinghua University, China*)  
[Modeling and simulation of solidification and temperature of thick-wall stainless steel pipe in horizontal centrifugal casting process](#)
- 15:50 – 16:10 **F08 Guiyong WU** (*Dalian University of Technology, China*)  
 Numerical simulation of structure and shrinkage in cast-steel ingot
- 16:10 – 16:30 **F03 Baiyang LOU** (*Zhejiang University of Technology, China*)  
 Numerical simulation of mold filling and solidification process of a disc aluminum alloy in pressure die casting
- 16:30 – 16:50
- 16:50 – 17:10 **F07 Hongmin GUO** (*Nanchang University, China*)  
 Micro-scale modeling of soft impingement during rheocasting

**18:00 – 20:00 Conference banquet**

## **POSTER SESSIONS**

### **01 June 2010 (Tuesday) 18:30 – 21:30 Meeting room No. 1**

#### **B SESSION – Phase transformation & Alloy design**

- b09 Jing WU** (*Shanghai University, China*)  
Study on the initiation and evolution of strengthening phase in niobium micro-alloyed steel by 3DAP
- b11 Naqiong ZHU** (*Shanghai University, China*)  
[Modeling of nucleation and growth of  \$M\_{23}C\_6\$  carbide in multi-component Fe-based alloy](#)
- b16 Xiangying MENG** (*Northeastern University, China*)  
[First-principles calculation of the temperature dependence of hardening precipitation in Mg-Gd alloys](#)
- b26 Shikun XIE** (*Jinggangshan University, China*)  
[Process of Equiaxed Grains of RE-Al Alloy under Slope Vibration](#)
- b27 Shanglei YANG** (*Shanghai University of Engineering Science, China*)  
[Calculation on the solid solution forming enthalpies of Re-Mo-Ti gradient alloy in thermodynamics](#)
- b28 Hong DING** (*Shanghai Jiao Tong University, China*)  
[Monte Carlo study of B2-L2<sub>1</sub> ordering transitions in Au-Cu-Al systems](#)
- b30 Ping DONG** (*National Key Laboratory Surface Physics and Chemistry, China*)  
[Numerical simulation of temperature and stress fields in beryllium cutting process](#)
- b33 Ning YU** (*Shanghai Jiao Tong University, China*)  
Simulating mechanical behaviour of porous materials for SOFC

#### **C SESSION – Heat treatment**

- c15 H Yahagi** (*Saitama Institute of Technology, Japan*)  
[Thermal flow simulation and visualization of PAG quenchant in cooling evaluation equipment with twin stir](#)
- c19 Huiping LI** (*Shandong University, China*)  
[Research on the quenching performance of 22MnB5 quenched in the steel die](#)
- c21 Xunwei ZUO** (*Shanghai Jiao Tong University, China*)  
[Timed quenching process for large-scale AISI4140 steel shaft](#)
- c22 Yingli ZHAO** (*Kunming University of Science and Technology, China*)  
[Kinetics of austenite grain growth in medium-carbon Nb-bearing steel](#)
- c23 Dongying JU** (*Saitama Institute of Technology, Japan*)  
[The developments and application of computer simulation code on induction heat treatment process](#)
- c24 Ruikai CHEN** (*Shanghai Jiao Tong University, China*)  
[A novel process to refine the grain size of NiCrMoV steel](#)

**D SESSION – Deformation & Recrystallization**

- d10 Xiangru LIU** (*Henan University of Science & Technology, China*)  
[The study of warm surface rolling of steel 45 groove axle](#)
- d15 Ben ZENG** (*Shanghai University, China*)  
[Simulation on rolling force and temperature field of plate steel during hot rolling](#)
- d17 Lin CHEN** (*Inner Mongolia university of science and technology, China*)  
[Dynamic recrystallization model and simulation analysis of SPCC steel hot rolling](#)
- d27 Guanyu DENG** (*University of Wollongong, Australia*)  
 Orientation evolution during equal channel angular pressing of aluminum single crystal
- d29 Shu GUO** (*Harbin Institute of Technology, China*)  
[Simulation of hot deformation of spray formed 7XXX alloy with high Zn content](#)
- d30 Junqing GUO** (*Henan University of Science and Technology, China*)  
[Study on Computer Simulation and Superplastic Extrusion of AZ31B Seamless Tube](#)
- d31 Xiaochun MA** (*Zhejiang University of Technology, Hangzhou, China*)  
 Study on the finite element numerical simulation of automobile beam stamping forming
- d32 Junguang HE** (*Henan University of Science and Technology, China*)  
[Computer simulations of the continuous annealing recrystallization for cold rolled strip steel in galvanizing line](#)
- d33 Lei ZHANG** (*Shandong University, China*)  
 Numerical simulation of U-channel forming process of quenchable steel at elevated temperature
- d34 Yu ZHANG** (*Chongqing Jiaotong University, China*)  
 Design of flash structure for forging die based on intelligent optimization algorithms
- d39 Bin TANG** (*Northwestern Polytechnical University, China*)  
[Asymmetric deformation of near hemispherical diaphragm under uniform surface load: Simulation and Experimental](#)
- d42 Yongge FAN** (*Southwest University of Science and Technology, China*)  
 Numerical simulation of expanding process for hollow billet during extrusion steel tube

**F SESSION – Melting & Casting**

- f11 Yitao YANG** (*Shanghai University, China*)  
[The establishment of some particular methods in casting simulation](#)
- f15 Zhijun YANG** (*Northwestern Polytechnical University, China*)  
 Numerical simulation of temperature distribution and heat transfer during the solidification of Ti-6Al-4V ingots in VAR process

## **G SESSION – Welding & Coating**

- g04 Yansong ZHANG** (*Shanghai Jiao Tong University, China*)  
The effect of post heating on Nugget quality for spot welding dual phase steels using FE and experimental methods
- g08 A Sliwa** (*Silesian University of Technology, Poland*)  
[Finite element method application for modeling of PVD coatings Properties](#)
- g14 Yong SUN** (*University of Wollongong, Australia*)  
Molecular dynamics simulation of bonding at the Fe-Al interface
- g15 Bolin HE** (*East China Jiaotong University, China*)  
[Effects of crack opening angle and external loads on the reliability of welded pipe with circumferential crack](#)
- g16 Wen-Ya LI** (*Northwestern Polytechnical University, China*)  
[Modeling of the whole friction stir welding process by the explicit finite element method](#)
- g17 Yong HU** (*East China Jiaotong University, China*)  
Numerical simulation of semisolid die casting process of magnesium alloy
- g18 Zhi ZHANG** (*Naval University of Engineering, Wuhan, China*)  
[Analysis of Temperature – Stress Coupling Field in Laser Cladding Process with Powder Feeding](#)

## **H SESSION – Miscellaneous**

- h08 Yinghua JIANG** (*Dongbu Steel Co. Ltd, Korea*)  
[Evaluation model of susceptibility to hot shortness of Cu-containing LC steel](#)
- h21 Yu-Sen YANG** (*National Kaohsiung First University of Science and Technology, Taiwan*)  
[A study of the measurement method of spheroidizing rate on coils of low carbon steel](#)
- h22 T Ghrib** (*Photothermal Laboratory, IPEIN, Tunisia*)  
Detection of Surface Defects by the Photothermal Deflection
- h23 Jiuba WEN** (*Henan University of Science and Technology, China*)  
[Analysis of Electrochemical Noise and Physical Model of Corrosion Process of Al-Zn-In Series Alloys in NaCl Solutions](#)
- h24 Wenliang WANG** (*Nanchang University, China*)  
[Simulated annealing algorithm and optical thin film](#)
- h25 Peng ZHANG** (*Harbin Institute of Technology at Weihai, China*)  
FEM-based thermo-physical process of laser spot heating of sheet metal
- h27 Jingfeng SHAO** (*Xi'an Polytechnic University, China*)  
[Development and modeling of production management and decision analysis system for finishing workshop based on multi-agent](#)