

ADM2006 Conference Programme

For Postgraduate School Programme of 6th –8th January

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7th January

18:00 – 20:00 Registration

8th –10th January: Summary

8 th January	9 th January	10 th January
8:30 Registration Room 1 9:00-10:30 Opening Keynotes Speeches	8:30-10:30 (1) Room 1, Session 13: Manufacture, Materials and production (II) (2) Room 2, Session 14: Application of AI & smart computing in design and manufacture (II) (3) Room 3, Session 15: Product design & design methodology (III) (4) Room 4, Session 16: Enterprise management & supply chain (I)	8:30-10:30 (1) Room 1, Session 25: Distributed technology and collaborative design and manufacture (V) (2) Room 2, Session 26: Manufacture, materials and production (IV) (3) Room 3, Session 27: Product Design & design methodology (IV)
Lunch 10:30-10:45	Lunch 10:30-10:45	Lunch 10:30-10:45
10:45-12:45 (1) Room 1, Session 1: Asia IT&C/ and Asia Link special session (2) Room 2, Session 2: Engineering design & analysis (I) (3) Room 3, Session 3: Product design & design methodology (I) (4) Room 4, Session 4: CAD/CAM/CAE (I)	10:45-12:45 (1) Room 1, Session 17: Distributed Technology and collaborative design & manufacture (III) (2) Room 2, Session 18: Manufacture, materials and production (III) (3) Room 3, Session 19: Application of AI & smart computing in design and manufacture (III) (4) Room 4, Session 20: Enterprise management & supply chain (II)	10:45 – 12:45 (1) Room 1, Session 28: Manufacture, materials and production (V) (2) Room 2, Session 29: Engineering design and analysis (IV) (3) Room 3, Session 30: Application of AI & smart computing in design and manufacture (IV)
Lunch 12:45 – 14:00	Lunch 12:45 – 14:00	Lunch 12:45 – 14:00
14:00-16:00 (1) Room 1, Session 5: Distributed technology and collaborative design & manufacture (I) (2) Room 2, Session 6: Manufacture, materials & production (I) (3) Room 3, Session 7: Application of AI & smart computing in design and manufacture (I) (4) Room 4, Session 8: Robots, control and automation (I)	14:00-16:20 (7 papers) 1) Room 1, Session 21: Distributed Technology and Collaborative design and manufacture (IV) (2) Room 2, Session 22: Engineering Design & Analysis (III) (3) Room 3, Session 23: CAD/CAM/CAE (II) (4) Room 4, Session 24: Robots, control and automation (III)	14:00-15:30 Tour to Harbin Institute of Technology 15:30-19:00 Tour to Ice and Snow Grant World
Coffee/Tea Break 16:00 – 16:15	Coffee/Tea Break 16:20 – 16:35	
16:15-18:35 (1) Room 1, Session 9: Distributed Technology and Collaborative design & manufacture (II) (2) Room 2, Session 10: Engineering Design & Analysis (II) (3) Room 3, Session 11: Product Design & Design Method. (II) (4) Room 4, Session 12: Robots, control and automation (II)	16:35-18:35 Tour to Harbin Engineering University	
19:00 Welcome reception	19:00 Banquet	19:00 Dinner

Detail Programme of 8th – 10th January

8th January

8:00 Registration

9:00 – 9:15 Opening

9:15 – 9:55 Keynote Speeches

Chair: Professor Han van Loon

- **Designers and cost engineers: do they think differently?**
Professor Rajkumar Roy, Cranfield University, UK
- **EU ASIA IT&C and ASIA-LINK programmes supported research in web-based collaborative work environment and its further development**
Professor Daizhong Su, Nottingham Trent University, UK

10:30 – 10:45 Coffee/tea break

Session 1. 8th January, 10:45 – 12:45, Room 1:

Asia Link and Asia IT&C Special Session: EU-China collaboration in research and higher education

Chair: Professor Datong Qin, Chongqing University, China

- **Higher Education and Research in Finland**
Dr Harri Eskelinen, Senior Research Scientist, Lappeenranta University of Technology, Finland
- **Product Design education and entrepreneurship**
Paul Johnson, Academic Team Leader of Product Design, School of the Built Environment, Nottingham Trent University, UK
- **Industry Related Research**
Dr Mikel Sorli, Head of Design Engineering, Foundation Labein, Spain
- **Innovation in Mechanical Transmission Research**
Professor Datong Qin, Director of State Key Laboratory of Mechanical Transmissions, Chongqing University, China

Session 2. 8th January, 10:45 – 12:45, Room 2: Engineering Design and Analysis (I)

Chair: Professor Frank H Schaefer, German University in Cairo, Egypt

- **A simplified model to simulate crash behavior of honeycomb (Paper No. 460)**
M. Asadi, H. Shirvani, E. Sanaei, M. Ashmead,
- **Connection strength and tightness of hydraulically expanded tube-to-tubesheet joints (Paper No. 323)**
Haifeng Wang, Zhifu Sang, G. E. O. Widera,
- **Coupled thermo-mechanical finite element analysis for the influence of rake angles on cutting process (Paper No. 224)**
Yuansheng Zhai, Yingchun Liang, Hongxiang Wang
- **Dynamics analysis and simulation of the 3-RPS parallel manipulator (Paper No. 228)**
Hua Chen, Weishan Chen, Junkao Liu
- **Optimization design of the forging joint-pipe for a pressure vessel (Paper No. 236)**
Jinhua Hu, Peng Wu, Shaomin Nie,

- **Optimization during the conceptual design phase on the basis of test stands for belt drives (Paper No. 110)**
Frank H Schaefer, German University in Cairo, Egypt

Session 3. 8th January, 10:45 – 12:45, Room 3: Product Design and Design Methodology (I)

Chair: Paul Johnson, Nottingham Trent University

- **An approach for module partition of hull for assembly (Paper No. H11)**
Jiatai Zhang, Fenkai Kong, Yuguang Zhong
- **Function-principle-structure model in the conceptual design phase based on ontology (Paper H12)**
Dongyan Shi, Changhua Qiu, Harbin Engineering University, China
- **Design and analysis of a novel spherical omnidirectional rolling robot (Paper 654)**
Tuanjie Li, Xuefeng Zhang, Chao Zhu
- **Study on a evaluation method for mouse design (Paper No. 223)**
Xiankui Zhang, Zuhuai Zhang, Lei Zhu, Shubin Zhang,
- **Case-based reasoning in product design (paper No.271)**
Hao Tan, Jianghong Zhao, Rui Jiang, Hunan University, China
- **The 24 hour product - from concept to interactive model in less than a day (Paper No. 495)**
Paul Johnson, Roger Griffiths

Session 4. 8th January, 10:45 – 12:45, Room 4: CAD/CAM/CAE (I)

Chair: Professor Zijun An, Yanshan University

- **New inverse mapping algorithms at points on 4-corner-point bilinear interpolation convex quadrilateral and surface (Paper No. 458)**
Caimao Su, Mingli Ke, Rongde Han, Zixin Li, Lexi Shao, Zhong Li, Zhanjiang
- **Simulation study on naval gun shell-feeding system based on the virtual prototype technique (Paper No. H10)**
Jiatai Zhang, Ani Luo
- **Research of 3-D cluster based on mathematical morphology (Paper 220)**
Yongmei Zhang, Yan Han,
- **A CT-imaging, CAD-based femoral head reconstruction system for surgery (Paper No 251)**
Shijie Li, Wei Wang, Shenwang Li
- **Research on software architecture of the intelligent integrated information system for CAD (Paper No.510)**
Pengshou Xie, Yongping Kang, Ruihong Dong
- **FEM modal analysis for the platform compass component (Paper No. 254)**
Qingfen Li, Shaowang Xie, Qilian Chen,

12:45 - 14:00 Lunch

Session 5. 8th January, 14:00– 16:00, Room 1: Distributed Technology and Collaborative Design & Manufacture (I)

Chair: Professor Kai Xu, Harbin Engineering University

- **Integration model and hierarchical management of design resources within the Web-enabled environment (Paper No.487)**
Jiansheng Li and Daizhong Su,
- **A grid based system for a manufacture/retailer virtual organization (Paper No. 475)**
Yu Xiong, Daizhong Su,
- **A Web Services-based framework of network CNC system (Paper No. H02)**
Kai Xue, Feng Huang, Yuezhu Xu

- **A product design process model for collaborative design (paper No. H04)**
Nengjian Wang, Qinhui Liu, Ze He,
- **Cache invalidation strategy based on mobile agent in mobile databases (Paper No. 252)**
Jianpei Zhang, Yan Chu, Jing Yang
- **Security policies and architecture for the manufacturing grid (Paper No 314)**
Hongxia Cai , Tao Yu, Minglun Fang

Session 6. 8th January, 14:00 – 16:00, Room 2: Manufacture, Materials and Production (I)

Chair: Professor Rajkumar Roy, Cranfield University, UK

- **Tig welding process experimental validation of simulated results (Paper No. 472)**
Afzaal. M. Malik, Ejaz. M. Qureshi, Naeem Ullah Dar, Iqbal Khan,
- **Ultrasonic machining and its capabilities in machining of titanium--a state of the art review (Paper No 470)**
Jatinder Kumar
- **Effects of job characteristics of advanced manufacturing technology on satisfaction and manufacturing performance: an empirical study (Paper No. 234)**
Jinbo Song, Dongbo Wang, Dashuang Dai, Yanqiu Song,
- **Welding quality and cost a comprehensive comparative study (Paper No. 473)**
Naeem Ullah Dar, Ejaz. M. Qureshi, Iqbal Khan, Afzaal M. Malik,
- **Size prediction and control in cylinder traverse grinding based on Elman Ann and fuzzy logic (Paper No. 322)**
Jiazhong Wang, Longshan Wang, Guofa Li, Guihong Zhou
- **A PSO algorithm-based approach to holon task allocation for holonic manufacturing system (Paper No. 418)**
Fuqing Zhao, Yi Hong, Dongmei Yu ,Yahong Yang ,Qiuyu Zhang, Huawei Yi,

Session 7. 8th January, 14:00 – 16:00, Room 3:

Application of Artificial Intelligence and Smart Computing in Design and Manufacture (I)

Chair: Professor Bingkui Chen, State Key Laboratory of Mechanical Transmission, Chongqing University

- **Improved chromosome encoding for genetic algorithm of gear design (Paper No. 486)**
Jiansheng Li, Daizhong Su, Shuyan Ji
- **A path-driven multicast routing algorithm for computer communication (Paper No. 324)**
Ling Zhou, Yamin Sun
- **Knowledge representation and function models in a composite material design expert system (Paper No. 379)**
Peng Wang, Ping Long, Qingfen Li,
- **EBCOT-based Z-scan radiation DWT in JPEG2000 (Paper No. 424)**
Chao Xu, Sufang Hu,
- **Adaptive control of machining process based on entropy error function and wavelet neural network (Paper No. 609)**
Xingyu Lai, Bangyan Ye, Weiguang Li, Chunyan Yan
- **A radial basis function neural network for construction vehicle shift decisions (Paper No. 615)**
Hongyan Zhang, Dingxuan Zhao, Ning Chen, Xinxing Tang, Jiwu Xia

Session 8. 8th January, 14:00 – 16:00 Room 4: Robots, Control and Automation (I)

Chair: Dr A Al-Habaibeh, Nottingham Trent University, UK

- **A color visual tracking system of mobile robot (paper No. H03)**
Jie Yang, Mingjun Zhang, Jianan Xu
- **The study on predicting the chip breaking behavior under the concept of equivalent parameters (paper No. 331)**

Erliang Liu, Rongdi Han, Guangyu Tan, Zhenjia Li

- **Study on the developed curve thinning method and vectorization method of image recognizing (paper No. 341)**
Dewei Tang, Hongying Yu, Dexiang Zong, Mingyu Liu
- **Dynamic characteristic of inspection robot along 220kv phase conductor (paper No. 305)**
Xiaohui Xiao, Gongping Wu, Sanping Li
- **Quality and productivity improvements in food processing using automated control (paper No. 102)**
A Ellwood, A Al-Habaibeh, S Donley,
- **Modern developments in condition monitoring systems of machining processes - a literature survey (paper No. 103)**
A Al-Azmi, A. Al-Habaibeh, D. Su

16:00 – 16:15 Coffee/Tea Break

Session 9. 8th January, 16:15– 18:35, Room 1: Distributed Technology and Collaborative Design & Manufacture (II)

Chair: Professor Xiaoran Chen, State Key Laboratory of Mechanical Transmission, Chongqing University

- **Unified bill of material in a networked environment (paper No. H13)**
Shifan Zhu, Xiaohua Zhang
- **Study on the key technology of integration between PDM and CAD (paper No. 480)**
Lin Lin, Yu Yao, Yonggeng Wei, Hongyu Zhao
- **Framework of Web Service and HLA based collaborative simulation system (paper No. 320)**
Hongwei Wang, Heming Zhang
- **Dynamic adaptive data replication strategies in grid environments (paper No. 527)**
Qingfan Gu, Jieyi Wu, Sabing Zhang
- **Application of Soap technology in OSA-CBM system (paper No. 548)**
Xiaofen Zhang, Jingtao Hu
- **A novel wireless network architecture and its application in industrial control system (paper No. 552)**
Qi Yan, Quan Wen, Jie Cao, Jianmin He
- **Integrated worm design based on distributed heterogeneous system (paper No. 492)**
Shuyan Ji, Daizhong Su

Session 10. 8th January, 16:15– 18:35, Room 2: Engineering Design and Analysis (II)

Chair: Dr E Lai, Nottingham Trent University, UK

- **Study of turntable decomposition on seven-axis linkage parallel kinematics machine (paper No. 244)**
Shi Yong, Yonggeng Wei, Shisheng Zhong
- **Design and simulation for the reducer of down-hole progressive cavity pump (paper No. 274)**
Geng Wu, Ligang Yao, Yingjie Cai, J. S. Dai
- **Simulation on precision machining process of weak stiffness parts based on finite element analysis method (paper No. 258)**
Jin Yao, Jianfeng Huang, Hong Li, Qingquan Zhang, Yonggang Xu,
- **An approach to intelligent and flexible workflow based engineering design management (paper No. 494)**
Dongbo Wang, Xiu-Tian Yan, William J Ion, Runxiao Wang
- **Component-based reusable workflow engine design (paper No. 356)**
Haibo Li, Dechen Zhan, Sheng Su
- **Research on the static performance of the aerostatic lead screw and nut (paper No. 368)**
Xuemei Yu, Zesheng Lu
- **Development of a probing system to study friction generated acoustics (paper No. 491)**

T. Tyler, E. Lai,

Session 11. 8th January, 16:15– 18:35, Room 3: Product Design and Design Methodology (II)

Chair: Professor Mingxi Tang, The Hong Kong Polytechnic University, Hong Kong

- **The conceptual design of mechanical system by characteristic equation of mechanism based on state space theory (paper No. 272)**
Liping Zhang, Delun Wang
- **Quality function deployment expansion in product life cycle design (paper No. 273)**
Ming Lei, Ligang Yao, Zuping Zhu
- **A virtual prototyping method for general design of flying vehicle (paper No. 373)**
Chong Nie, Weiping Wang, Wen Zhao, Yifan Zhu
- **A dynamic PERT/CPM technique with compound number supporting enterprise process flexible scheduling (paper No. 374)**
WenAn Tan, Song Li, LingGuo Zeng, Weiming Shen, Zhejiang
- **Integration of mechanical constraints with geometric model in product design and the knowledge reuse (paper No. 422)**
Wu Lv, Xiaolin Hou, Fuyan Lin, Mingkai Bao
- **Evaluation method to determine radial accuracy of spindle units of simulation turntable (paper No. 426)**
Yu Yao, Zhiyong Qu, Weishan Chen, Guodong Li
- **Digital design thinking a research programme in computational design in Hong Kong (paper No. 461) Mingxi Tang**

Session 12. 8th January, 16:15– 18:35, Room 4: Robots, Control and Automation (II)

Chair: John Redgate, Nottingham Trent University, UK

- **Neural generalized predictive control for an autonomous underwater vehicle (paper No. H06)**
Jianan Xu, Mingjin Zhang
- **Research on movement model of two-wheeled self-balance robot (paper No. 428)**
Jie Zhao, Yong Qin, Xiaoyu Wang
- **Implementing routers with a single stage of buffering (paper No. 434)**
Ximing Hu, Jing Qu, Peng Yi, Binqiang Wang,
- **Study on energy-saving variable speed hydraulic control system (Paper No. 435)**
Haikuo Shen, Bo Jin, Yaxin Yu, Ying Che
- **The orientation system of the mobile robot based on GPS/GIS/GSM (Paper No. 559)**
Feng Cui, Minglu Zhang
- **Dynamics analysis and simulation on special-purpose robot for hydraulic turbine repair (Paper No. 621) Ping Yang,**
Heqi Li, Feng Yu, Shuzhen Zhang
- **Simulink model of electric vehicle for maximum efficiency operation (Paper No. 113)**
J. Redgate, A. Al-Habaibeh, D. Su

9th January

Session 13. 9th January, 8:30 – 10:30, Room 1: Manufacture, Materials and Production (II)

Chair: Dongyan Shi, Harbin Engineering University

- **The equivalent normal curvature milling model with the whirlwind milling method machining freeform surfaces (Paper No. 365)**
Xianzhong Yi, Haiying Qi, Qiang Liu, Xianbing Yi

- **Adaptive feedrate optimization and jerk control algorithm in high-speed CNC machining (Paper No. 516)**
Daping Wan, Dejin Hu, Haifeng Wang, Shengfa Liu
- **Research on multilayer heat transfer for hot embossing of polymeric microfluidic chip (Paper No. 276)**
Weiqing Lin, Zichen Chen, Jianzhong Fu
- **A rapid assembling approach based on assembly feature (Paper No. 452)**
Xiaodong Shao, Tianxin Li, Jincheng Xu
- **On-machine diamond wheel dressing/truing and compensation arrangement with vision monitoring system (Paper No. 437)**
Daping Wan, Dejin Hu, Haifeng Wang, Yonghong Zhang
- **CIRPS: a contemporary integrated rapid prototyping system (Paper No. 525)**
Anping Xu, Yunxia Qu, Yushan Liu, Guolin Duan, Runhua Tan

Session 14. 9th January, 8:30 – 10:30, Room 2:

Application of Artificial Intelligence and Smart Computing in Design and Manufacture (II)

Chair: Dr Jiansheng Li, Nottingham Trent University

- **Study on fuzzy PID with genetic algorithm optimization control strategy of force feedback bilateral servo system (Paper No. 622)**
Guang Wen, Dingxuan Zhao, Tao Ni, Le Deng,
- **The genetic algorithm for a scheduling problem of single stage batch process with parallel machines (Paper No. 362)**
Sheng Su, Dechen Zhan, Haijie Yu, Haibo Li
- **Impulse response feature extraction based on immune genetic algorithm with correlation filtering (Paper No. 614)**
Hongliang Li, Sun'an Wang
- **Implementation and application of heuristic frequency optimizing system in GSM/GPRS networks (Paper No. 265)**
Wen Ye, Lei Cheng, Hongxu Cui
- **An aggregation degree based clustering approach for solving the partitioning problem in collaborative virtual environment (Paper No. 326)**
Xiaomei Hu, Zhengjun Zhai, Xiaobin Cai
- **Gear design optimisation with a variable penalty function (Paper No. 490)**
Shuyan Ji, Daizhong Su, Jiansheng Li

Session 15. 9th January, 8:30 – 10:30, Room 3: Product Design and Design Methodology (III)

Chair: Dr Shijian Luo, Zhejiang University

- **Study on reverse modeling of turbine blade based on FBRE method (Paper No. 508)**
Yunfeng Liu, Mingfei Guo, Xingtao Dong, Wei Peng
- **Research on rigidity and torsional vibration model of cycloid steel ball transmission system**
Peng Zhang and Zijun An
- **Optimum design and emulate experiment of the sandwiched transducer-type spherical ultrasonic motor (Paper No. 439)**
Xuetao Zhao, Weishan Cheng, Shengjun Shi
- **B-spline curve smoothing fitting based on minimization structural risk (Paper No. 440)**
Ling Jing, Ling Zhen
- **A knowledge integration based design thinking model to product innovation (Paper No. 553)**
Shangshang Zhu, Per Boelskifte, Shijian Luo

- **Exploring the expected image scale in product design of mobile phone products (Paper No. 416)**
Shijian Luo,

Session 16. 9th January, 8:30 – 10:30, Room 4: Enterprise, Management and Supply Chain (I)

Chair: Professor Han van Loon, Leistungs Consult GmbH, Switzerland

- **A research and application of ERP interface based on ABAP/4 (Paper No. 353)**
Chengqiao Wang, Fei Qiao
- **The model of partner choosing in knowledge chain based on AHP (Paper No. 506)**
Xiaodan Wang, Xin Gu, Weicheng Wang
- **A new manufacture oriented cooperative partner selection method (Paper No. H01)**
Mingzhu Yao, Dongyan Shi, Ze He
- **Framework of virtual enterprise building decision support system based on resource viewpoint (Paper No. 529)**
Xiangyang Li, Xuanguo Xu, Yanxin Wang
- **Design, knowledge management and STARS**
Han van Loon

10:30 – 10:45, Coffee/Tea Break

Session 17. 9th January, 10:45 – 12:45, Room 1:

Distributed Technology and Collaborative Design & Manufacture (III)

Chair: Jiachen Hou, Nottingham Trent University, UK

- **Improving the performance of TCP Vegas congestion control algorithm in ad hoc networks (Paper No. 616)**
Changqing Gong, Guodong Zhang, Feng Tian, Bin Wu, Northeastern University
- **A novel service location model for mobile agent (Paper No. 264)**
Aizhen Liu, Jiazhen Wang, Jianli Hu, Suzhen Wang
- **Resource allocation research based on contract net in manufacturing grid (Paper No. 336)**
Shengyou Shi, Haicheng Yang, Rong Mo, Hongjun Liu, Neng Wan
- **Exploring success factors for Web Service: behavioral perspective from end users (Paper No. 538)**
Yan Liu, Changfeng Zhou, Yingwu Chen
- **Design the proxy gateway for wireless Internet services (Paper No. 618)**
Fu Lin, Guiming He
- **Modularised product design specification within the Web-Services environment (Paper No. 489)**
Jiachen Hou, Daizhong Su

Session 18. 9th January, 10:45 – 12:45, Room 2: Manufacture, Materials and Production (III)

Chair: Professor Zhongkai Xiong, Chongqing University

- **Scheduling algorithm of special assembly problems based on classifying operations (Paper No. 531)**
Zhiqiang Xie, Jing Yang, Jing Cong
- **Direct laser fabrication of metallic components (Paper No. 549)**
Kai Zhang, Weijun Liu, Xiaofeng Shang
- **Improved architecture of H.264 CABAC encoder (Paper No. 613)**
Wei Wang, Chao Xu
- **An intelligent agent and Petri Net approach to production scheduling of reconfigurable manufacturing system (Paper No. 567)**
Nan Xie, Aiping Li

- **Research and development of an open soft-CNC system and related technology (Paper No. H08)**
Xia Li, Hongbin Liang, Hua Tian,
- **Experimental study of die-sinking electrical discharge machining with rotating and non-rotating electrodes (Paper No. 485)**
M. Sayehbani, F. Sassani

Session 19. 9th January, 10:45 – 12:45, Room 3:

Application of Artificial Intelligence and Smart Computing in Design and Manufacture (III)

Chair: Professor Hongbing Fang, Mississippi State University, USA

- **Application of rough sets theory in digital image watermarking (Paper No. 338)**
Dongmei Yu, Qiuyu Zhang, Yan Yan, Huawei Yi, Xue Wang
- **A multi-agent approach to simulate and analyze the drivers' route choice behavior under the impact of real-time information (Paper No. 377)**
Shi An, Jing Li, Jianxun Cui, Liping Cui
- **A novel evolutionary algorithms based on number theoretic net for nonlinear optimization (Paper No. 309)**
Fei Gao
- **On-line dimensional errors prediction in slender bar turning using artificial neural network (Paper No. 425)**
Rongdi Han, Bodi Cui, Jianliang Guo
- **An improved genetic algorithm for the permutation flow-shop scheduling problem with makespan criterion (Paper No. 339)**
Qiuyu Zhang, Dongmei Yu, Huawei Yi, Yan Yan, Shuang Liang,
- **Towards the improvement of evolutionary computing using a dominant tree, divide-and-conquer mechanism (Paper No. 468)**
Hongbing Fang, Mark F. Horstemeyer,

Session 20. 9th January, 10:45 – 12:45, Room 4: Enterprise, Management and Supply Chain (II)

Chair: Dr Mikel Sorli, Foundation Labein, Spain

- **Strategic supplier selection model for mass customisation (Paper No. 488)**
Jiachen Hou, Daizhong Su, Zhongkai Xiong
- **A cooperative advertising investment model in assembly supply chain with multiple suppliers (Paper No. 114)**
Yu Xiong, Daizhong Su, Jiajia Nie
- **Incorporating transportation costs into JIT lot-splitting decisions for coordinated supply chains (Paper No. 438)**
Lanshun Nie, Xiaofei Xu, Dechen Zhan
- **Supporting innovation management in extended enterprise (Paper No. 471)**
Mikel Sorli, Dragan Stokic, Alvaro Gorostiza
- **A cooperative advertising investment model in supply chain considering non-price factor (Paper No. 108)**
Jiajia Nie, Zhongkai Xiong
- **Drop-shipping supply chain performance with competing retailers**
Gendao Li, Zhongkai Xiong

12:45 - 14:00 Lunch

Session 21. 9th January, 14:00– 16:20, Room 1: Distributed Technology and Collaborative Design & Manufacture (IV)

Chair: Inigo Mendikoa Foundation Labein, Spain

- **Semantic-grid-enabled peer-to-peer framework for enterprise information integration (Paper No. 419)**

Jingtao Zhou, Mingwei Wang

- **A model for resolving semantic conflicts in collaborative design (Paper No. 504)**
Mingwei Wang, Jingtao Zhou, Shusheng Zhang
- **Research and application of grid information service based on WS MDS (Paper No. 302)**
Zhanting Yuan, Qiuyu Zhang, Hui Wang
- **SoC-PSE: a grid-based problem solving environment for SoC design (Paper No. 544)**
Yuehu Liu, Kai Wang, Mingming Xu, Jing Xu, Kuizhi Mei
- **Integrated architecture and implementation on distributed information system for group-oriented manufacturing industries (Paper No. 227)**
Xiaobing Liu, Yongli Sun, Yingguang Hao
- **Inventive approaches for problems detection in collaborative design (Paper No. 469)**
Inigo Mendikoa, Dr.Mikel Sorli, Jose I. Barbero, Ana Carrillo, Alvaro Gorostiza,

Session 22. 9th January, 14:00 – 16:20, Room 2: Engineering Design and Analysis (III)

Chair: Professor Heikki Martikka, Lappeenranta University of Technology, Finland

- **A method of virtual design for the fatigue life of a dynamic structure (Paper No. 507)**
Wenli Zhao, Xiaojun Zhou, Degang Liu
- **Finite element analysis for platform of 3 DOF spacecraft simulator based on the theory of deformable body mechanics (Paper No. 455)**
Yanbin Li, Zuwen Wang, Gang Bao
- **Application of modern design method for scroll compressor (Paper No. 545)**
Bin Peng, Zhenquan Liu
- **Optimization and investigation of dynamic properties of motorcycle frame (Paper No. 501)**
Gang Lei, Linqing Liao, Bao Chen, QiuHong Jiao
- **Research and experiment on sleeve damage mechanism of oil film bearing in large-scale mill (Paper No. 642)**
Qingxue Huang, Jianmei Wang, Shichun Yang, Chunjiang Zhao, Yugui Li, Lifeng Ma
- **Fuzzy variable-coefficient PID controller for hydraulic turbine speed governor (Paper No. 646)**
Bo Jin, Yaxin Yu
- **Power transmission dynamics at extreme loadings (Paper No. 104)**
Heikki Martikka, Ilkka Pollanen, Chaoyang Li

Session 23. 9th January, 14:00 – 16:20, Room 3: CAD/CAM/CAE (II)

Chair: Dr Eugene Lai, Nottingham Trent University, UK

- **A geometric method to construct smooth connecting surfaces for polyhedron corner rendering (Paper No. 645)**
Xiaolin Lu
- **Research on virtual demo environment of virtual machine tool (Paper No. 315)**
Dong Wang, Tao Yu,
- **3-D simulation of temperature field and burn-through prediction during in-service welding onto SS304 pipes (Paper No. 327)**
Xiaolong Xue, Zhiliang Wang, Zhifu Sang, Jiagui Zhu,
- **Two viewpoints about dynamic simulation of mechanical system based on virtual prototype technology (Paper No. 515)**
Mingquan Shi
- **A framework to implement the online cost estimation for injection mould (Paper No. 369)**
Hongbo Lan, Chengrui Zhang,

- **Computation model for service resource based on ontology (Paper No. 560)**
Fei Zhang, Zichen Chen, Yi Mei
- **Review of Web-based collaborative product design (Paper No. 493)**
Yongjun Zheng, Paul Johnson, Daizhong Su

Session 24. 9th January, 14:00 – 16:20 Room 4: Robots, Control and Automation (III)

Chair: Professor Kun Mean Hou, University of Blaise Pascal Clermont-Ferrand II, France

- **Adaptive PID control for a class of nonlinear systems based on programmable multi-axis controller (Paper No. H07)**
Haitao Zhu, Kai Xue, Ping Wang, Qihong Li
- **Research of the condition monitoring system for sensors of AUV (Paper No. H09)**
Yujia Wang, Mingjun Zhang, Zhixian Jin,
- **Kinematic calibration of parallel robots (Paper No. 629)**
Dayong Yu, Junwei Han, Dacheng Cong
- **Research of the finalized task-based reconfigurable modular robot topology (Paper No. 522)**
Jie Zhao, Yanhui Wei, Weida Wang, Hegao Cai
- **Research of learning method in multi-agent robot system (Paper No. 213)**
Li Ma, Linlin Ci, Genyan Ge
- **Research on mobile manipulator navigation and object detection (Paper No. 260)**
Jianchang Zhang, Dapeng Zhang, Minglu Zhan, Shanshan Zhao
- **Wireless sensor network, remote heart healthcare application (Paper No. 202)**
Haiying Zhou, Kun Mean Hou, Laurent Gineste, Christophe De Vault

16:20 – 16:35 Coffee/Tea Break

16:35 – 18:30 Tour to Harbin Engineering University

19:00 Banquet

10th January

Session 25. 10th January, 8:30 – 10:30, Room 1:

Distributed Technology and Collaborative Design and Manufacture (V)

Chair: Inigo Mendikoa, Foundation Labein, Spain

- **Using grid computing technology to enable collaborative manufacturing (Paper No. 332)**
Xiaozhu Wu, Chongchen Chen, Minghui Fan, Hongyu Huang,
- **Bluetooth based wireless networked sensor in robot wireless network (Paper No. 360)**
Lin Lei, Houjun Wang
- **Research on coverage problem of wireless sensor networks (Paper No. 363)**
Xueqing Wang, Wu Yang, Yongtian Yang
- **A Web-based manufacturing integration of concurrent engineering and co-design (Paper No. 542)**
Quan Wen, Jianmin He, Jie Cao
- **Web Service and HLA based collaborative modeling and simulation for complex product design (Paper No. 410)**
Kai Wang, Heming Zhang
- **Virtual assembly simulation in a distributed haptic virtual environment (Paper No. 111)**

Rosa Iglesias, Ana Carrillo, Sara Casado, Teresa Gutierrez, Jose Ignacio Barbero,

Session 26. 10th January, 8:30 – 10:30, Room 2: Manufacture, Materials and Production (IV)

Chair: Dr Lin Lin, Harbin Institute of Technology

- **The collaborative manufacturing link: tolerances (Paper No. 112)**
A. Carrillo, A. Alvarez, J.L. Barbero, J. Libano
- **Study of integratable MES based on manufacturing grid (Paper No. 211)**
Zicong Zhou, Qian Luo, Dekun Chen
- **Research on database in simulation of semiconductor production line (Paper No. 378)**
Ming Fang, Fei Qiao, Xiaohong Xu
- **Two stage interpolation method in high speed machining (Paper No. 404)**
Guoshun Ji, Wen Wang, Zichen Chen
- **Voronoi diagram-based approach on the contour-parallel tool-path planning of free surface (Paper No. 627)**
Zhiqiang Jiang, Xilan Feng, Song Chen
- **Phase-field simulation of microsegregation patterns of Ni-Cu binary alloy (Paper No. 204)**
Changsheng Zhu, Zhiping Wang, Pengshou Xie

Session 27. 10th January, 8:30 – 10:30, Room 3: Product Design and Design Methodology (IV)

Chair: Professor In-Chul Kim, Pukyong National University, Korea

- **Method on how to design a portable UV-Vis spectrophotometer (Paper No. 619)**
Feng Wan, Youquan Zhao, Shifu Fan
- **An agent-based framework for improving product conceptual design (Paper No. 447)**
Dongxing Cao, Xiuhong Wang, Ninghua Zhu, Runhua Tan, Yanhui Han
- **Function modeling of conceptual design based on Petri Nets (Paper No. 634)**
Tuanjie Li, Xiaoyong Zhou, Xuefeng Zhang
- **Design of the scan mirror compatible with calibration (Paper No. 561)**
Xinzhi Han, Hongying Yu, Hongbing Shen, Zhaojun Liu, Shaofan Tang
- **Speaker cone surface design with coons patch (Paper No. 248)**
Yingyue Xue, Xianfeng Jiang
- **A study on the characteristics of Korean traditional fishing boat for development of a modern sailing boat (Paper No. 478)**
Gen-Ong Park, Dong-Joon Kim, Jong-Heon Park, In-Chul Kim

10:30 – 10:45, Coffee/Tea Break

Session 28. 10th January, 10:45 – 12:45, Room 1: Manufacture, Materials and Production (V)

Chair: Dr A Al-Habaibeh, Nottingham Trent University, UK

- **Modeling for laser-material interaction to predict and control the cross sectional area of coaxial laser cladding with powder (Paper No. 238)**
Liangliang Nan, Weijun Liu, Kai Zhang
- **Modal analysis of workpiece clamped with a special follower rest during turning slender bar (Paper No. 303)**
Rongdi Han, Jianliang Guo, Bodi Cui, Baolin Yin
- **Research on the encapsulation of manufacturing resources based on OGSA (Paper No. 210)**
Qian Luo, Dekun Chen
- **Study on multi-location enterprises-oriented hybrid distributed manufacturing execution system (Paper No. 229)**

Xiao Bing Liu, Hong Guang Bo, Yue Ma, Qiu Nan Meng

- **Design of a gear grinding machine with base circle differential generation and its CNC system (Paper No. 412)**
Yongping Liu, Xue Zhao, Heqi Li

Session 29. 10th January, 10:45 – 12:45, Room 2: Engineering Design and Analysis (IV)

Chair: Professor Dong-Myung Bae, Pukyong National University, Korea

- **Optimal utilization of automotive parabolic leaf springs fatigue life measurements for optimum quality assurance (Paper No. 105)**
Heikki Martikka, Ilkka Pollanen, Chaoyang Li
- **Design, analysis of a new style lock-unlock mechanism for spaceborne appendages (Paper No. 249)**
Zongquan Deng, Binghui Wu, Xiang Wu
- **Switching power amplifier and its properties research on electromagnetic bearing (Paper No. 562)**
Guodong Li, Qingchun Zhang, Yingchun Liang, Zhiyong Qu
- **Numerical analysis on underwater explosion using the two-phase ALE-Godunov scheme (Paper No. 479)**
Sangmook Shin, In Chul Kim, Yong Jig Kim
- **Numerical analysis of vibration characteristics in water tank (Paper No. 477)**
Sung-Yong Bae, Dong-Myung Bae, Ja-Sam Goo
- **Development of servo-hydraulic control loading system and research on its force tracking performance (Paper No. 624)**
Hui Wang, Liwen Wang, Xiangan Yan, Jinming Huang

Session 30. 10th January, 10:45 – 12:45, Room 3:

Application of Artificial Intelligence and smart computing in design and manufacture (IV)

Chair: Dr Jiansheng Li, Nottingham Trent University, UK

- **A multi-agent based cooperative knowledge based engineering framework (Paper No. 408)**
Mingwei Wang, Jingtao Zhou, Shusheng Zhang
- **CMAC neural network and PID hybrid control of position in electric-hydraulic servo motor system (Paper No. 214)**
Le Deng, Dingxuan Zhao, Tao Ni, Guang Wen, Xinxing Tang
- **A algorithm of color image edge detection based on RGB dimensional reduction model and multi-structural elements mathematical morphology (Paper No. 225)**
Jianping Li, Bai Zhang, Shuqing Zhang
- **Design and development of a high-performance 3rd-generation IRFPA imaging and demo system (Paper No. 449)**
Huaiqiong Li, Qian Chen
- **A new approach for agent-based manufacturing system control (Paper No. 217)**
Xiaolong Ren, Haoyu Wen, Guohua Xu
- **An inverse kinematics of mobile manipulator based on RBF neural network (Paper No. 259)**
Jianchang Zhang, Bin Li, Ruibo Zhang, Shanshan Zhao, Minglu Zhang

12:45 - 14:00 Lunch

14:00 - 15:30 Visit Harbin Institute of Technology

15:30 – 19:00 Tour to Ice and Snow Grand World

19:00 Dinner