

2014 MSEC-NAMRC-ICMP Paper Presentation Schedule

June 10 Tuesday

8:00 am–9:30 am Welcome and Keynote (together with RAPID and BigM) at Cobo Center Grand Riverview Ballroom

10:00 am–11:30 am Parallel Sessions and Malkin Symposium

ICMP 2-4-1 Advances in Additive Manufacturing

Cobo Center 140B 10:00 am-11:30 am

Session Chair: Toru Shimizu

ICMP2014-4987 BUILD STRATEGIES FOR 3D HETEROGENEOUS OBJECT IN ADDITIVE MANUFACTURING Bashir Khoda

ICMP2014-5034 TUNABLE PLASMONIC FILTERS USING LASER POLYMERIZED 3D MICRO-SPRINGS Hiroaki Nishiyama, Yuma Abe, Takuro Ichimura, Yukinori Ohzeki, Yasuto Saito

ICMP2014-4979 ROBUST CONTROL SYNTHESIS ON LASER CLADDING FOR DIRECT MANUFACTURING: CONTROL OF THE WIDTH AND HEIGHT OF THE DEPOSITED MATERIAL Mezari Rezak

MSEC 2-3-1 Advances in Abrasive Machining Processes: Opening Session

Cobo Center 310B 10:00 am-11:30 am

Session Chair: Changsheng Guo; Session Co-Chair: Barbara Linke

Opening Speech

MSEC2014-3975 EXPLORATION OF A NEW APPROACH FOR CALIBRATING GRINDING POWER MODEL Zhongde Shi, Changsheng Guo, Helmi Attia

MSEC2014-4001 CYLINDRICAL GRINDING OF NITRIDED STEELS: GRINDABILITY, SPECIFIC ENERGY, TEMPERATURES, RESIDUAL STRESSES AND FATIGUE FAILURE Jeffrey Badger

NAMRC 1-16 Control of Manufacturing Machines and Systems

Cobo Center 311AB 10:00 am-11:30 am

Session Chair: Patrick Kwon

NAMRC42-4536 Characterization of Machine Axis Errors for Modulated Tool Path (MTP) Machining Luke Berglind, John Ziegert, Kane Lingerfelt, Wes Love

NAMRC42-4482 A GRAPH-BASED METHOD FOR THE APPLICATION AND QUANTIFICATION OF DESIGN FOR ASSEMBLY (DFA) KNOWLEDGE IN EARLY DESIGN Steven Turek, Sam Anand

NAMRC42-4417 PERFORMANCE EVALUATION OF ORBITAL EDM ALONG HELICAL PATH OVER CAVITY SINKING EDM OF INCONEL 718 Harshit Dave, Harit Raval, Keyur Desai, Kamalakar Rajurkar

NAMRC 1-27 Modeling of Forming Processes

Cobo Center 312AB 10:00 am-11:30 am

Session Chair: Chetan Nikhare

NAMRC42-4497 TEXTURE AND SURFACE ROUGHNESS RESULTING FROM MULTISCALE OPEN DIE HYDROFORMING William Emblom, Richard J. Jones, Md. Farhan S. Ibne Islam, Mitra Aithal, Scott W. Wagner

NAMRC42-4493 FORMABILITY PREDICTION OF ALUMINUM SHEET ALLOYS UNDER ISOTHERMAL FORMING CONDITIONS Ghassan Kridli, Tigran Abovyan, Peter Friedman, Georges Ayoub

NAMRC42-4406 A NEW MODEL FOR THE PREDICTION OF WIDTH SPREAD IN ROUGHING MILLS Donghoon Lee, Kyongbo Lee, Jaesang Lee, Sungjin Yun, Taejin Shin, Sangmoo Hwang

NAMRC 1-38 Welding and Friction-Stir Processes

Cobo Center 313AB 10:00 am-11:30 am

Session Chair: Steve Schmid

NAMRC42-4527 CORRELATING PROCESS PARAMETERS TO THRUST FORCES AND TORQUE IN THE FRICTION STIR PROCESSING OF AZ31B Ali Ammouri , Ramsey Hamade

NAMRC42-4429 A METHODOLOGY FOR CONTROLLING GRAIN SIZE IN FRICTION STIR PROCESSES Ali Ammouri, Ramsey Hamade

NAMRC42-4499 SLIP-LINE FIELD ANALYSIS OF LARGE STRAIN EXTRUSION MACHINING Wilfredo Moscoso-Kingsley

ASME MED Executive Committee Meeting

Cobo Center 411BC 10:00 am-11:30 am

MSEC 2-2-7 Process & Systems Modeling

Cobo Center 412A 10:00 am-11:30 am

Session Chair: Zhichao (Charlie) Li; Session Co-Chair: Arif Malik

MSEC2014-4098 FIXTURE LAYOUT OPTIMIZATION BASED ON SOCIAL RADIATION ALGORITHM Yanfeng Xing, Jun Ni, Shuhuai Lan

MSEC2014-4116 THE ROOT CAUSE OF NOSE AND FLANK WEAR AND THEIR BEHAVIOR IN TURNING Ti-6Al-4V WITH CARBIDES AND PCD INSERTS Trung Nguyen, Patrick Kwon, Thomas Bieler, Di Kang

MSEC2014-4175 FATIGUE EVALUATION OF 8630 CAST STEEL SUBJECTED TO POST-WELD HEAT TREATMENT AND STRESS RELIEVING Alireza Shirazi, Ihab Ragai

MSEC 2-1-1 Process Modeling

Cobo Center 412B 10:00 am-11:30 am

Session Chair: Xin Zhao; Session Co-Chair: Wenwu Zhang

MSEC2014-3956 MULTI-SCALE FINITE ELEMENT MODELING OF ALUMINA CERAMICS UNDERGOING LASER-ASSISTED MACHINING Xiangyang Dong, Yung Shin,

MSEC2014-3988 A NUMERICAL STUDY ON WELDING STAINLESS STEEL WITH LASERS Junke Jiao, Wenwu Zhang, Jiaqiang Sun,

MSEC2014-4029 RESIDUAL STRESS MODELING OF POWDER INJECTION LASER SURFACE CLADDING FOR DIE REPAIR APPLICATIONS Santanu Paul, Kaunain Ashraf, Ramesh Singh

MSEC 4-5-1 Challenges in Cloud Manufacturing-1

Cobo Center 413A 10:00 am-11:30 am

Session Chair: Lihui Wang; Session Co-Chair: Xun Xu

MSEC2014-3907 MODELING AND ANALYZING THE MATERIAL FLOW OF CROWDSOURCING PROCESSES IN CLOUD-BASED MANUFACTURING SYSTEMS USING STOCHASTIC PETRI NETS
Dazhong Wu, David Rosen, Dirk Schaefer

MSEC2014-4020 CLOUD MANUFACTURING IN SUPPORT OF SUSTAINABILITY Xi Vincent Wang, Xun Xu

MSEC2014-4094 CLOUD MANUFACTURING-A NEW PARADIGM AND APPROACH OF MANUFACTURING INFORMATIZATION Bohu Li, Lin Zhang, Xudong Chai, Fei Tao, Lei Ren, Yongzhi Wang, Chao Yin, Pei Huang, Xinpei Zhao, Zude Zhou, Baocun Hou, Tingyu Lin, Chen Yang, Anrui Hu, Jingeng Mai

NAMRC 1-39 Bio-manufacturing

Cobo Center 413B 10:00 am-11:30 am

Session Chair: Wei Li

NAMRC42-4435 EFFECT OF CARBON NANOTUBE REINFORCEMENT ON COAXIALLY EXTRUDED VASCULAR CONDUITS Yahui Zhang, Farzaneh Dolati, Yin Yu, Ibrahim Ozbolat

NAMRC42-4411 EFFECT OF DRUG LOADING AND LASER SURFACE MELTING ON DRUG RELEASE PROFILE FROM BIODEGRADABLE POLYMER Shan-Ting Hsu, Y Lawrence Yao

ICMP 1-1-1 Advances in Manufacturing and Application of Metal Matrix Composites-I

Cobo Center 414A 10:00 am-11:30 am

Session Chair: Katsuyoshi Kondoh; Session Co-Chair: Yoshimi Watanabe; Gen Sasaki; Yoshuhiko Hangai

ICMP2014-4952 MICROSTRUCTURE CONTROL OF CNF/ALUMINUM COMPOSITES AND EFFECT ON ELECTRICAL CONDUCTIVITY Gen Sasaki, Okyong Lee, Kenjiro Sugio, Yongbum Choi, Kazuhiro Matsugi

ICMP2014-4953 DEPENDENCE OF CARBON STRUCTURE ON MACHINABILITY OF P/M HIGH STRENGTH BRASS COMPOSITE WITH GRAPHITE PARTICLE Hisashi Imai, Shufeng Li, Katsuyoshi Kondoh, Yoshiharu Kosaka

ICMP2014-4957 ELECTRICAL/THERMAL AND MECHANICAL PROPERTIES OF POWDER

METALLURGY AL MATRIX COMPOSITES REINFORCED BY CARBON NANOTUBE Biao Chen,
Shufeng Li, Hisashi Imai, Takahashi Makoto, Katsuyoshi Kondoh

ICMP 2-6-1 Forming and Joining of Traditional and Lightweight Materials-I

Cobo Center 414B 10:00 am-11:30 am

Session Chair: Masaaki Otsu; Session Co-Chair: Satoshi Kishimoto

ICMP2014-4913 GALVANIC CORROSION OF MECHANICAL FASTENER JOINT OF CFRP / ALUMINUM ALLOYS AND CFRP / TITANIUM ALLOY Toshi-Taka Ikeshoji, Tetsuya Morimoto, Miku Azeyanagi, Akio Suzumura, Takahisa Yamazaki

ICMP2014-5016 DEVELOPMENT OF DRILLING PROCESS FOR CFRP USING ELECTRIC DISCHARGE Ryota Takamura, Toshiharu HIRAMA, Naoto Ohtake

ICMP2014-5014 FINITE ELEMENT ANALYSES OF CONVENTIONAL SINGLE POINT INCREMENTAL FORMING AND FRICTION STIR INCREMENTAL FORMING OF ALUMINUM ALLOY SHEETS Masaaki Otsu, Y. Katayama, T. Muranaka, Ryo Matsumoto

ICMP 3-2-1 Micro/Nano Scale Fabrication Processes-I

Cobo Center 415A 10:00 am-11:30 am

**Session Chair: Ming Yang; Session Co-Chair: Yasunori Saotome, Masaaki Otsu,
Naoto Ohtake, Masahiko Yoshino**

ICMP2014-4907 EXPERIMENTAL AND NUMERICAL INVESTIGATIONS OF MICRO SHEET HYDROFORMING OF STAINLESS STEEL FOIL Hideki Sato, Ken-ichi Manabe, Dongbin Wei, Zhengyi Jiang

ICMP2014-4910 FINITE ELEMENT ANALYSIS OF SPRINGBACK BEHAVIOR IN RESISTANCE HEATING ASSISTED MICRO BENDING PROCESS Qiu Zheng, Tetsuhide Shimizu, Ming Yang

ICMP2014-4917 THE LOW TEMPERATURE BONDING OF THE DIAMOND USING A NANO PARTICLE OF SILVER Naoto Tanaka, Takahisa Yamazaki, Toshi-taka Ikeshoji, Akio Suzumura

11:30 am–Noon MSEC-NAMRC-ICMP Conference Welcome

Noon–1:30 pm Lunch: sponsored by ICMP

1:30 pm–3:00 pm Parallel Sessions and Panels / MSEC Keynotes

MSEC 2-6-1 Advances in Additive Manufacturing, I

Cobo Center 140B 1:30 pm-3:00 pm

Session Chair: Yong Huang; Session Co-Chair: Sam Anand

MSEC2014-4251 3D Printing of Bioactive Implant Coating and Biomimetic Scaffolding for Tissue Repair Jerry Fuh

MSEC2014-3901 REVIEW ON PHASE FIELD MODELING OF MICROSTRUCTURE EVOLUTIONS:

APPLICATION TO ELECTRON BEAM ADDITIVE MANUFACTURING Seshadev Sahoo, Kevin Chou

MSEC 2-5-1 Forming & Joining Keynotes

Cobo Center 310B 1:30 pm-3:00 pm

Session Chair: Yannis Korkolis; Session Co-Chair: Gracious Ngaile

Keynote 1

MSEC2014-4197 EXTRUSION OF MULTI-MATERIAL COMPONENTS Nooman Ben Khalifa, Annika Foydl, Daniel Pietzka, Andreas Jäger, A. Erman Tekkaya

Keynote 2

MSEC2014-4002 MULTIAXIAL STRESS TESTS ON LIGHTWEIGHT MATERIALS IN SUPPORT OF MATERIAL MODELING AND ACCURATE SHEET FORMING SIMULATIONS Toshihiko Kuwabara

NAMRC 1-17 Machining Process Monitoring

Cobo Center 311AB 1:30 pm-3:00 pm

Session Chair: Rob Ivester

NAMRC42-4523 INFRARED THERMOGRAPHY OF THE CHIP-TOOL INTERFACE THROUGH TRANSPARENT CUTTING TOOLS Thejas Menon, Viswanathan Madhavan

NAMRC42-4532 UNCERTAINTY IN MEASUREMENT OF THE MAXIMUM CUTTING TOOL TEMPERATURE BY INFRARED THERMOGRAPHY Brandon Lane, Eric Whitenton, Viswanathan Madhavan, Alkan Donmez

NAMRC42-4521 PARTICLE FILTER FOR TOOL WEAR PREDICTION Jinjiang Wang, Peng Wang, Robert Gao

NAMRC 1-28 Quality Processes

Cobo Center 312AB 1:30 pm-3:00 pm

Session Chair: Rhythm Suren Wadhwa

NAMRC42-4503 COMPARATIVE STUDY BETWEEN 2D AND 3D CHARACTERIZATION METHODS FOR CYLINDER LINER PLATEAU HONED SURFACES Mohammed YOUSFI, Sabeur Mezghani, Ibrahim Demirci, Mohamed El Mansori

NAMRC42-4456 DEPENDENCE OF TOOTH FLANK FINISHING ON POWERTRAIN GEAR NOISE Simon Jolivet, Sabeur Mezghani, Mohamed El Mansori, Benoit Jourdain

NAMRC42-4501 DATA-DRIVEN PREDICTIVE NICKEL-HYDROGEN BATTERY HEALTH MONITORING AND PROGNOSTICS Yangbing Lou, Hancheng Dong, Xiaoning Jin, Jun Ni, Sheng Cheng, Haitao Zhu

MSEC 2-3-3 Aerospace, Automotive and New Markets

Cobo Center 313AB 1:30 pm-3:00 pm

Session Chair: Barbara Linke; Session Co-Chair: Mark J. Jackson

MSEC2014-3993 THERMAL ASPECTS AND GRINDING AGGRESSIVENESS IN VIEW OF OPTIMIZING HIGH-PERFORMANCE GRINDING OPERATIONS IN THE AUTOMOTIVE INDUSTRY Radovan Drazumeric, Jeffrey Badger, Janez Kopac, Peter Krajnik

MSEC2014-3931 ABRASIVE MACHINING OF AEROSPACE ALLOYS - CHALLENGES AND RECENT ADVANCEMENTS Changsheng Guo

MSEC2014-4130 INVESTIGATIONS FOR SAFE GRINDING OF Ti-6Al-4V PARTS PRODUCED BY DIRECT METAL LASER SINTERING (DMLS) TECHNOLOGY Radu Pavel, Anil Srivastava

MSEC 4-3-1 Modeling and Control of Manufacturing Machines

Cobo Center 411BC 1:30 pm-3:00 pm

Session Chair: Kira Barton; Session Co-Chair: Stephen Ludwick

MSEC2014-1002 REDUCTION OF RAPID POSITIONING TIME BY REFERENCE PATH MODIFICATION: A PRELIMINARY INVESTIGATION Chan-Rong Lin, Bokai Chen, Chinedum Okwudire

MSEC2014-3985 SIMPLE DYNAMICS AND OPEN-LOOP CONTROL FOR HORIZONTAL BOOM MOTION OF ROTARY CRANES Naoki Uchiyama, Shigenori Sano, Huimin Ouyang

MSEC2014-4111 ACTIVE CHATTER DAMPING IN PLUNGE GRINDING USING MAGNETIC ACTUATORS Markus Ahrens, Ruben Fischer, Matthias Dagen, Berend Denkena, Tobias Ortmajer

MSEC 2-9-1 Advancement in Manufacturing Processes for Energy Efficiency

Cobo Center 412A 1:30 pm-3:00 pm

Session Chair: Wayne Cai; Session Co-Chair: Alan Luo

MSEC2014-4210 EXPERIMENTAL AND NUMERICAL ANALYSIS OF LASER PEEN FORMING MECHANISMS OF SHEET METAL Hua Ding, Ninggang Shen, Keqin Li, Wu Bo, Chelsey N. Pence, Hongtao Ding

MSEC2014-4040 A COMPARATIVE STUDY OF ENERGY AND MATERIAL FLOW IN MODULATION-ASSISTED MACHINING AND CONVENTIONAL MACHINING Ho Yeung, Yang Guo, James Mann, W. Dale Compton, Srinivasan Chandrasekar

MSEC2014-4140 PREDICTION OF TOOL WEAR BASED ON CUTTING FORCES WHEN END MILLING TITANIUM ALLOY Ti-6Al-4V Cynthia Stanley, Durul Ulutan, Laine Mears

MSEC 2-1-2 Laser Materials Processing I

Cobo Center 412B 1:30 pm-3:00 pm

Session Chair: Qiong Nian; Session Co-Chair: Adrian Lutey

MSEC2014-3967 PULSED LASER ABLATION OF LITHIUM ION BATTERY ELECTRODES Adrian Lutey, Alessandro Fortunato, Alessandro Ascari, Simone Carmignato, Leonardo Orazi

MSEC2014-4051 LASER CRYSTALLIZATION OF TRANSPARENT AZO FILMS ON SAPPHIRE WITH HIGH ELECTRON MOBILITY FOR PHOTO-APPLICATION Qiong Nian, Martin Y. Zhang, Bradley D. Schwartz, Gary Cheng

MSEC2014-4165 A PARAMETRIC STUDY ON LASER WELDING OF MAGNESIUM ALLOY AZ31 BY A FIBER LASER Neil Bailey, Wenda Tan, Yung Shin

MSEC 4-5-2 Challenges in Cloud Manufacturing-2

Cobo Center 413A 1:30 pm-3:00 pm

Session Chair: Xun Xu; Session Co-Chair: Lihui Wang

MSEC2014-4019 DEVELOPMENT STATUS OF CLOUD MANUFACTURING IN CHINA Lin Zhang, Jingeng Mai, Fei Tao, Yongliang Luo, Lei Ren

MSEC2014-4036 DYNAMIC MODELING OF MANUFACTURING EQUIPMENT CAPABILITY IN CLOUD MANUFACTURING Jiajia Yu, Zude Zhou, Wenjun Xu

MSEC2014-4099 INTELLIGENT USER INTERFACE IN CLOUD MANUFACTURING Lei Ren, Lin Zhang, Baocun Hou, Qiong Wu, Dongxing Teng

MSEC 2-8-3 Biomedical Materials Manufacturing

Cobo Center 413B 1:30 pm-3:00 pm

Session Chair: Bruce L. Tai; Session Co-Chair: Jason Z. Moore

MSEC2014-4035 ENVIRONMENTALLY BENIGN ELECTROPOLISHING OF BIOMEDICAL ALLOYS Maria Inman, Timothy Hall, Holly Garich, E.J. Taylor

MSEC2014-4064 MICROSTRUCTURAL AND DYNAMIC MECHANICAL CHARACTERIZATION OF BIODEGRADABLE MAGNESIUM-CALCIUM ALLOY FOR ORTHOPEDIC IMPLANT APPLICATIONS V.S. Brooks, Y.B. Guo

MSEC2014-4163 DIRECT FABRICATION OF HIGHLY CONDUCTIVE MICRO SILVER TRACKS USING ELECTROHYDRODYNAMIC JET PRINTING FOR SUB-20 μ M MICRO-MANUFACTURING Yuan-Shin Lee, Jingyan Dong, Hantang Qin, Chuang Wei

ICMP 1-1-2 Advances in Manufacturing and Application of Metal Matrix Composites- II

Cobo Center 414A 1:30 pm-3:00 pm

Session Chair: Katsuyoshi Kondoh; Session Co-Chair: Yoshimi Watanabe, Gen Sasaki, Yoshuhiko Hangai

ICMP2014-5022 CHARACTERIZATION OF A METAL-CORE PIEZOELECTRIC CERAMICS FIBER/ALUMINUM COMPOSITE Tetsuro Yanaseko, Hiroshi Asanuma, Hiroshi Sato

ICMP2014-5025 FABRICATION OF AN ALUMINUM MATRIX PIEZOCOMPOSITE USING HOLLOW PIEZOELECTRIC CERAMICS FIBER Hiroshi Asanuma, Supriant, Tetsuro Yanaseko, Jun Kunikata, Takamitsu Chiba, Hiroshi Sato

ICMP2014-5038 TRIBOLOGICAL BEHAVIOR OF DUAL MATRIX AL-CNT COMPOSITES Mina Bastwros, Amal Esawi, Abdulla Wifi

ICMP 2-6-2 Forming and Joining of Traditional and Lightweight Materials-II

Cobo Center 414B 1:30 pm-3:00 pm

Session Chair: Masaaki Otsu; Session Co-Chair: Satoshi Kishimoto

ICMP2014-5036 EXPERIMENTAL STUDY ON ANISOTROPY OF FREE SURFACE ROUGHENING BEHAVIOR FOR METAL SHEETS IN UNI-AXIAL TENSILE TEST Tsuyoshi Furushima, Tetsuro Masuda, Ken-ichi Manabe, Sergei Alexandrov

ICMP2014-4924 EFFECTS OF FOLDING NUMBERS, SCORING DEPTH AND BENDING VELOCITY ON BENDING-MOMENT RELAXATION OF CREASED PAPERBOARD Shigeru Nagasawa, Shinya Ozawa, Yasushi Fukuzawa

ICMP2014-4973 STRAIN RATE SENSITIVITY AND MATERIAL ANISOTROPY OF ADDITIVE MANUFACTURED AISI 630 STAINLESS STEEL Tyler LeBrun, Hidetoshi Kobayashi, Keitaro Horikawa, Ken-ichi Tanigaki

ICMP 3-2-2 Micro/Nano Scale Fabrication Processes-II

Cobo Center 415A 1:30 pm-3:00 pm

Session Chair: Ming Yang; Session Co-Chair: Yasunori Saotome, Masaaki Otsu, Naoto Ohtake, Masahiko Yoshino

ICMP2014-4926 SCALABLE LASER NANOMANUFACTURING OF PATTERNED METALLIC STRUCTURES Yaowu Hu, Prashant Kumar, Huang Gao, Gary Cheng

ICMP2014-4982 MECHANICAL PROPERTIES OF NI-ALLOY THIN FILMS FABRICATED BY LIGA PROCESS Yasunori Saotome, Yoshiyuki Ichinosawa, Seichin Kinuta

ICMP2014-4989 DEVELOPMENT OF A NANO STRUCTURED FOIL MOLD FOR THE TEMPLATED THERMAL DEWETTING OF A NANO DOT ARRAY Masahiko Yoshino, Motoki Terano, Ryo Hotoda, Masahiro Mita

3:30 pm–5:00 pm Parallel Sessions and Panels

MSEC 2-6-2 Advances in Additive Manufacturing

Cobo Center 140B 3:30 pm-5:00 pm

Session Chair: Yong Huang; Session Co-Chair: Sam Anand

MSEC2014-3960 COMPOSITION OPTIMIZATION FOR FUNCTIONALLY GRADIENT PARTS CONSIDERING MANUFACTURING CONSTRAINTS Amir Ghazanfari, Ming-Chuan Leu

MSEC2014-4009 A NOVEL MULTI-MATERIAL ADDITIVE MANUFACTURING TECHNIQUE FOR FABRICATING LAMINATED POLYMER NANOCOMPOSITE STRUCTURES Clayson Spackman, Kyle Picha, Garrett Gross, James Nowak, Phil Smith, Jian Zheng, Johnson Samuel, Sandipan Mishra

MSEC 5-2-1 Energy Conscious Manufacturing Scheduling

Cobo Center 310B 3:30 pm-5:00 pm

Session Chair: Chris Yingchun Yuan; Session Co-Chair: Yong Wang

MSEC2014-4141 GEOGRAPHIC DIFFERENCES OF GREENHOUSE GAS EMISSION REDUCTION FROM ELECTRIC VEHICLE DEPLOYMENT IN THE UNITED STATES Fan Yang, Chris Yingchun Yuan, Xiang

Zhao

MSEC2014-3926 MANUFACTURING SCHEDULING FOR ENERGY COST REDUCTION IN A SMART GRID SCENARIO Hao Zhang, Fu Zhao, John Sutherland

MSEC2014-4006 SIMULATION-BASED OPTIMIZATION OF ELECTRICITY DEMAND RESPONSE FOR SUSTAINABLE MANUFACTURING SYSTEMS Leah Cuyler, Zeyi Sun, Lin Li

NAMRC 1-18 Materials modeling

Cobo Center 311AB 3:30 pm-5:00 pm

Session Chair: Yuebin Guo

NAMRC42-4481 A TIME-COMPRESSED NUMERICAL APPROACH FOR THERMAL ANALYSIS OF PREHEATING PROCESS IN POWDER METALLURGY Shlok Sundaresh, Antonino Ducato, Rajiv Shivpuri

NAMRC42-4462 PREDICTION OF MATERIALS MICROSTRUCTURAL TEXTURE EVOLUTION IN MACHINING VIA VISCOPLASTIC SELF-CONSISTENT MODELING Omar Fergani, Ali Tabei, Hamid Garmestani, Steven Liang

NAMRC42-4452 DEVELOPMENT OF MATERIAL INFORMATION MODEL TO SUPPORT THE POWDER METALLURGICAL PRODUCT AND PROCESSES Omer Yaman, Utpal Roy

NAMRC 1-29 Sustainable Manufacturing

Cobo Center 312AB 3:30 pm-5:00 pm

Session Chair: Shreyes Melkote

NAMRC42-4457 DEVELOPMENT AND UTILIZATION OF A PROCESS-ORIENTED INFORMATION MODEL FOR SUSTAINABLE MANUFACTURING Heng Zhang, Bicheng Zhu, Yunpeng Li, Omer Yaman, Utpal Roy

NAMRC42-4416 SYNERGIZING LEAN AND GREEN FOR CONTINUOUS IMPROVEMENT R.S. Wadhwa

NAMRC42-4409 NEW CONCEPTS FOR BIO-INSPIRED SUSTAINABLE GRINDING Barbara Linke, Jorge Moreno

MSEC 2-3-4 Monitoring, Modeling and Conditioning

Cobo Center 313AB 3:30 pm-5:00 pm

Session Chair: Mark J. Jackson; Session Co-Chair: Changsheng Guo

MSEC2014-4169 EFFECTS OF SINGLE POINT DRESSING ON SEEDED GEL GRINDING WHEEL SURFACE TOPOGRAPHY Craig Woodin, Harsha Malshe, Shreyes Melkote

MSEC2014-3971 PREDICTIVE FORCE MODELING IN MQL (MINIMUM QUANTITY LUBRICATION) GRINDING Yamin Shao, Steven Liang

MSEC2014-3969 MONITORING THE PARAMETER EFFECTS OF SURFACE GRINDING PROCESS USING TEMPERATURE, ACOUSTIC EMISSION AND FORCE MEASUREMENT Guoxu Yin, Tejas

Nisal, Nilo T. Bugtai, Ioan D. Marinescu

MSEC 4-4-1 Advances in Quality and Process Control in Manufacturing Systems

Cobo Center 411BC 3:30 pm-5:00 pm

Session Chair: Dragan Djurdjanovic; Session Co-Chair: Krystel Castillo

MSEC2014-3964 A METHOD FOR IDENTIFYING ERROR SOURCES IN COMPLEX ASSEMBLY PROCESS BASED ON MULTI-LEVEL NETWORK Guangzhou Diao, Liping Zhao, Yiyong Yao, Sheng Hu

MSEC2014-4039 PREDICTING SUBJECTIVE RESPONSES FROM HUMAN MOTION: APPLICATION TO VEHICLE INGRESS ASSESSMENT Hadi Masoud, Matthew P. Reed, Kamran Paynabar, Jionghua (Judy) Jin, Ksenia Kozak, Nanxin Wang, Jian Wan, Gianna Gomez-Levi

MSEC2014-4147 ON-LINE ECCENTRICITY MONITORING OF SEAMLESS TUBES IN CROSS-ROLL PIERCING MILL Rui Chen, Weihong Guo, Jionghua (Judy) Jin

MSEC 2-5-2 Material Modeling, Tribology

Cobo Center 412A 3:30 pm-5:00 pm

Session Chair: Nooman Ben Khalifa; Session Co-Chair: Anupam Vivek

MSEC2014-4134 MODELING OF STRENGTH DIFFERENTIAL EFFECTS IN HCP SHEET MATERIALS Srihari Kurukuri, Michael Worswick

MSEC2014-4057 AN INVESTIGATION OF THE RING HOOP TENSION TEST FOR ANISOTROPIC TUBES Christopher Dick, Yannis Korkolis

MSEC2014-4170 ENHANCEMENT OF TRIBOLOGICAL PERFORMANCE VIA INNOVATIVE TOOLING DESIGN FOR EXTRUSION PROCESSES James Lowrie, Gracious Ngaile

MSEC 2-1-3 Laser Materials Processing II

Cobo Center 412B 3:30 pm-5:00 pm

Session Chair: Jianfeng Ma; Session Co-Chair: Wenwu Zhang

MSEC2014-4065 EXPERIMENTAL STUDY ON LASER HIGH-SPEED MICRO-PROCESSING Wenwu Zhang, Junke Jiao, Liang Ruan, Tianrun Zhang

MSEC2014-4191 NUMERICAL INVESTIGATION OF TWO-DIMENSIONAL THERMALLY ASSISTED DUCTILE REGIME MILLING OF BRITTLE MATERIALS Jianfeng Ma, Xianchen Ge, Shuting Lei

MSEC2014-4178 LASER ASSISTED COLD BENDING OF HIGH STRENGTH STEELS Erica Liverani, Alessandro Ascari, Alessandro Fortunato, Adrian Lutey

MSEC 4-5-3 Challenges in Cloud Manufacturing-3

Cobo Center 413A 3:30 pm-5:00 pm

Session Chair: Dazhong Wu; Session Co-Chair: Xun Xu

MSEC2014-4022 OPTIMAL MACHINING PARAMETER SELECTION BASED ON REAL-TIME MACHINE MONITORING USING IEC 61499 FUNCTION BLOCKS FOR USE IN A CLOUD MANUFACTURING

ENVIRONMENT: A CASE STUDY FOR FACE MILLING Nikolaos Tapoglou, Jorn Mehnert, Michael Doukas, Dimitris Mourtzis

MSEC2014-4027 CONCEPT FOR FUNCTION BLOCK ENABLED PROCESS PLANNING TOWARDS MULTI-SITE CLOUD COLLABORATION Martin Helgason, Lihui Wang, Robin Karlsson, Mohammad Givchchi, Mikael Tedeberg

MSEC2014-4031 A FEATURE BASED METHOD FOR PRODUCT-ORIENTED REPRESENTATION TO MANUFACTURING RESOURCES IN CLOUD MANUFACTURING Xu Liu, Yingguang Li, Wei Wang, Lihui Wang

MSEC 2-9-2 Advancement in Manufacturing Processes for Energy Efficiency II

Cobo Center 413B 3:30 pm-5:00 pm

Session Chair: Alan Luo; Session Co-Chair: Wayne Cai

MSEC2014-4139 CHARACTERIZATION OF ULTRASONIC METAL WELDING BY CORRELATING ONLINE SENSOR SIGNALS WITH WELD ATTRIBUTES S. Shawn Lee, Chenhui Shao, Tae Hyung Kim, S. Jack Hu, Elijah Kannatey-Asibu, Wayne Cai, J. Patrick Spicer, Jeffrey A. Abell

MSEC2014-4159 A METHOD TO STUDY FATIGUE LIFE OF ULTRASONICALLY WELDED LITHIUM-ION BATTERY TAB JOINTS USING ELECTRICAL RESISTANCE Nanzhu Zhao, Wei Li, Wayne Cai, Jeffery Abell

MSEC2014-4221 GEOMETRIC PARAMETER OPTIMIZATION IN CUTTING FORCE MODEL FOR DEEP-HOLE DRILLING Yuen Li, Haiyan Zhang, Cong Liao

ICMP 1-4-1 Design, Fabrication and Evaluation of Smart and Advanced Material - I

Cobo Center 414A 3:30 pm-5:00 pm

Session Chair: Kazuaki Sanada; Session Co-Chair: Tetsusei KURASHIKI, Fumio Narita, Seiichi Hata

ICMP2014-4925 EFFECT OF MAGNETIC FIELD ON THE FRACTURE OF CRACKED GIANT MAGNETOSTRICTIVE MATERIALS IN THREE-POINT BENDING Fumio Narita, Yasuhide Shindo, Kotaro Mori

ICMP2014-4941 MAXIMIZATION OF MORPHOLOGIC STRENGTHENING EFFECT OF DUAL COMPONENT ELASTOPLASTIC SOLIDS Ikumu Watanabe, Gaku Nakamura, Kohei Yuge

ICMP2014-4948 PREPARATION OF CAPSULE-TYPE MICRO ACTUATOR USING HYDROGEN STORAGE ALLOYS Kenta Goto, Takehiro Higuchi, Ohmi Fuchiwaki, Wataru Nakao

ICMP 1-5-1 Dynamic Behavior of Materials and Structures

Cobo Center 414B 3:30 pm-5:00 pm

Session Chair: Hidetoshi Kobayashi; Session Co-Chair: Masaaki Itabashi, Chiaki Sato

ICMP2014-4994 DYNAMIC STRENGTH OF JOINTS BONDED WITH ACRYLATE ADHESIVE Chiaki Sato, Masato Katano, Kazuyoshi Seto, Yu Sekiguchi

ICMP2014-5012 GEOMETRIC FEATURES OF MNS GRAINS IN DAMAGED FREE-CUTTING STEEL

SUM24L BY FATIGUE AND DYNAMIC TENSION Masaaki Itabashi

**ICMP2014-5045 DYNAMIC SIMULATIONS OF PROJECTILE PENETRATION INTO GRANULAR MEDIUM
Kinya Ogawa, Shinnosuke Takeda, Hidetoshi Kobayashi**

ICMP 3-2-3 Micro/Nano Scale Fabrication Processes

Cobo Center 415A 3:30 pm-5:00 pm

**Session Chair: Ming Yang; Session Co-Chair: Yasunori Saotome, Masaaki Otsu,
Naoto Ohtake, Masahiko Yoshino**

**ICMP2014-5015 EFFECT OF ULTRASONIC VIBRATION ON STRESS RELAXATION IN
MICRO-COMPRESSION TEST WITH STEP MOTION Ryo Yamaguchi, Yang Bai, Tetsuhide Shimizu,
Ming Yang**

**ICMP2014-5019 DEVELOPMENT OF A DRY PROCESS FOR COATING METAL NANOPARTICLES ON
CARBON NANOTUBES Yoshinori Bamba, Tetsuhide Shimizu, Ming Yang**

5:00 pm–8:00 pm Early Career Forum

5:00 pm–5:45 pm ASME/MED Member Meeting

5:45 pm–6:30 pm NAMRI/SME Member Meeting

6:00 pm–9:00 pm Celebration of Reconfigurable Manufacturing Systems

June 11 Wednesday

8:30 am – 10:00 am Parallel Sessions and Panels

MSEC 2-3-5 Loose Abrasive

Cobo Center 310B 8:30 am – 10:00 am

Session Chair: Brigid Mullany; Session Co-Chair: Chris Arcona

MSEC2014-3995 SUBSURFACE CRACK ANALYSIS FOR DIAMOND SLURRY LAPPING OF SAPPHIRE WAFERS Chao-Chang A. Chen, Wei-Kang Tu, Jyun-Kai Yang

MSEC2014-4093 EXPERIMENTAL INVESTIGATION OF VIBRATORY FINISHING PROCESS Xiaozhong Song, Rahul Chaudhari, Fukuo Hashimoto

MSEC2014-4121 WEAR OF ABRASIVE PARTICLES IN SLURRY DURING LAPPING James Lehner II, Christopher Brown

NAMRC 1-19 Innovative Forming Processes

Cobo Center 311AB 8:30 am – 10:00 am

Session Chair: Bill Emblom

NAMRC42-4421 AN EXPERT SYSTEM FOR MANUFACTURABILITY ASSESSMENT AND PROCESS PLANNING OF SHEET METAL PARTS PRODUCED ON COMPOUND DIE Sachin Kashid, Shailendra Kumar

NAMRC42-4430 INFLUENCE OF TEMPERATURE ON ENVIRONMENTALLY BENIGN TRIBOLOGICAL SYSTEMS IN COLD FORGING OPERATIONS Sebastian Zang, Christoph Müller, Dominik Bodenmüller, Peter Groche,

NAMRC42-4410 BURNISHING OF AEROSPACE ALLOY: A THEORETICAL-EXPERIMENTAL APPROACH Tao Zhang, Nilo Bugtai, Ioan D. Marinescu,

NAMRC 1-30 Nanocomposites

Cobo Center 312AB 8:30 am – 10:00 am

Session Chair: Hitomi Yamaguchi

NAMRC42-4431 EFFECTS OF FOAMING THROUGH LEACHING ON ELECTRICAL BEHAVIOR OF PS/CNT COMPOSITES Majid TabkhPaz, Kaushik Parmar, Anam Mohammed Ali, Simon Park

NAMRC42-4438 BULK AL MATRIX NANOCOMPOSITES FORMED THROUGH IN SITU OXIDATION AND MELTING OF ALUMINUM NANOPARTICLES Jiaquan Xu, Xiaochun Li, Marc Estruga, Lianyi Chen, Hongseok Choi

NAMRC42-4506 HYBRID PRODUCTION OF MASTER NANOCOMPOSITES FOR BULK METAL MATRIX NANOCOMPOSITES Hongseok Choi, Babafemi Malomo, Xiaochun Li

MSEC 2-8-1 Needle Tissue Cutting

Cobo Center 313AB 8:30 am – 10:00 am

Session Chair: Roland Chen; Session Co-Chair: Jason Z. Moore

MSEC2014-4203 MODELING AND SIMULATION OF FLEXIBLE NEEDLE INSERTION INTO SOFT TISSUE USING MODIFIED LOCAL CONSTRAINT METHOD Yong Lei, Bin Lian

MSEC2014-4049 AFFECTS OF VIBRATORY PARAMETERS ON NEEDLE INSERTION FORCE Andrew C. Barnett, Kelilah Wolkowicz, Jason Z. Moore

MSEC2014-4160 TOOL/CHIP INTERFACIAL STRESS DISTRIBUTIONS IN ATOMISTIC MACHINING OF POLYCRYSTALLINE COPPERS Chunhui Ji, Jing Shi, Yachao Wang, Hsueh-Ming Wang

MSEC 2-5-3 Microstructures and Modeling

Cobo Center 412A 8:30 am – 10:00 am

Session Chair: Marko Knezevic; Session Co-Chair: Yannis Korkolis

MSEC2014-3953 INVESTIGATION ON THE MICROSTRUCTURE AND MECHANICAL PROPERTY OF LASER-WELDED BR1500HS TUBE AFTER AUSTENITIZING HEAT TREATMENT Zhubin He, Zhibiao Wang, Qiang Liu

MSEC2014-3987 MODELLING STATIC AND DYNAMIC KINETICS OF MICROSTRUCTURE EVOLUTION IN TYPE 316 STAINLESS STEEL DURING HOT ROLLING Eduardo Dupin, Akira Yanagida, Jun Yanagimoto

MSEC2014-3984 TOWARDS COMPUTATIONALLY TRACTABLE SIMULATIONS OF METAL FORMING PROCESSES WITH EVOLVING MICROSTRUCTURES Marko Knezevic, Daniel J. Savage, Nicholas W. Landry

MSEC 2-1-4 Process Innovation

Cobo Center 412B 8:30 am – 10:00 am

Session Chair: Wenwu Zhang; Session Co-Chair: Dong Lin

MSEC2014-4066 REVIEW ON THE DEVELOPMENT OF NON-DESTRUCTIVE TESTING BASED ON LASER ULTRASONIC TECHNIQUE Yuanfeng He, Wenwu Zhang

MSEC2014-4173 DIAMOND, LEAN INNOVATION AND INTELLIGENT ENERGY FIELD MANUFACTURING Wenwu Zhang, Nan Jiang, Tianrun Zhang, JunAn Zhang

MSEC2014-4181 SURFACE MICRO-SCALE PATTERNING FOR BIOMEDICAL IMPLANT MATERIAL OF PURE TITANIUM VIA HIGH ENERGY PULSE LASER PEENING Ninggang Shen, Chelsey N. Pence, Robert Bowers, Yin Yu, Hongtao Ding, Clark M. Stanford, Ibrahim Ozbolat

MSEC 4-5-4 Challenges in Cloud Manufacturing-4

Cobo Center 413A 8:30 am – 10:00 am

Session Chair: Xi Vincent Wang; Session Co-Chair: Nikolaos Tapoglou

MSEC2014-4056 TOWARDS KNOWLEDGE BASED PROCESS PLANNING SUPPORT FOR CAPP-4-SMES - PROBLEM DESCRIPTION, RELEVANT STATE OF THE ART AND PROPOSED APPROACH Franz Miltner, Tobias Vogel, Matthias Hemmje

MSEC2014-4079 PARTIAL ENCRYPTION BASED SECURE SHARING OF CAD MODELS Cai Xiantao,

Li Wendong, He Fazhi

MSEC2014-4088 A CLOUD BASED FEATURE RECOGNITION SYSTEM TO SUPPORT COLLOBORATIVE AND ADAPTIVE PROCESS PLANNING Arivazhagan Anbalagan, Sheng Wang, Li Weidong

ICMP 2-8-1 Welding/Joining/Particle Deposition/Surface and Interface - I

Cobo Center 413B 8:30 am – 10:00 am

Session Chair: Masahiro FUKUMOTO; Session Co-Chair: Kazuhiko Sakaki, Kazuhiro Ogawa, Chiaki Sato, Toshio Hattori, Yukio MIYASHITA, Akio Suzumura, Yasuo Suga, Toshi-Taka Ikeshoji

ICMP2014-4909 BRAZING OF ALUMINUM TO C/C COMPOSITES WITH ALUMINUM COATING BY EVAPORATIVE DEPOSITION Toshi-Taka Ikeshoji, Akio Suzumura, Takahiro Sato, Kazuhiro Niwaya, Takahisa Yamazaki

ICMP2014-4914 INFLUENCES OF CLAMPING FORCE ON FATIGUE CHARACTERISTICS OF NONFERROUS BOLTS Shinji Hashimura, Takefumi Otsu, Tetsuya Torii

ICMP2014-4916 JOINING PHENOMENA AND TENSILE STRENGTH OF FRICTION WELDED JOINT BETWEEN PURE ALUMINUM AND PURE COPPER Masaaki Kimura, Yusuke Inui, Masahiro Kusaka, Koichi Kaizu, Akiyoshi Fuji

ICMP 1-4-2 Design, Fabrication and Evaluation of Smart and Advanced Material - II

Cobo Center 414A 8:30 am – 10:00 am

Session Chair: Kazuaki Sanada; Session Co-Chairs: Tetsusei KURASHIKI, Fumio Narita, Seiichi Hata

ICMP2014-4964 INFLUENCE OF SELF-HEALING REACTION HEAT ON SHAPE RECOVERY SELF-HEALING Maho Shiozawa, Wataru Nakao

ICMP2014-4986 STUDIES ON THE CHARACTERISTICS OF EPOXY GRANITE WITH VARYING RESIN CONTENT A Selvakumar, P V Mohanram

ICMP2014-4993 EFFECT OF MICROSTRUCTURE ON THE THERMAL CONDUCTIVITY AND PROCESSABILITY OF POLYMER COMPOSITES WITH NANO AND MICRO FILLERS Kazuaki Sanada, Yasuhide Shindo

ICMP 1-2-1 Ceramics and Ceramic Matrix Composites

Cobo Center 414B 8:30 am – 10:00 am

Session Chair: Shuichi Wakayama; Session Co-Chairs: Yasuo Kogo, Kouichi Yasuda, Toshio Ogasawara, Wataru Nakao

ICMP2014-4923 CRACK FORMATION DURING SINTERING OF ALUMINA CERAMIC LAMINATES Kouichi Yasuda, Yonghui Zhou

ICMP2014-4949 EXPERIMENTAL APPROACH TO THE THERMAL SHOCK FRACTURE IN CERAMICS Shuichi Wakayama, Takamasa Tsukada, Takenobu Sakai, Katsumi Yoshida, Takashi Akatsu

ICMP2014-5000 QUANTITATION OF THE USEFULNESS OF SELF-HEALING UNDER CRACK PROPAGATION Shosei Miyamoto, Wataru Nakao

ICMP 1-3-1 Cutting-Edge Technologies and Innovation Around Soft Matter - I
Cobo Center 415A 8:30 am – 10:00 am
Session Chair: Hidemitsu Furukawa; Session Co-Chairs: Hasnat Kabir, Jin Gong, Murasawa, Toshinori Makuta, Kazuto Takashima, Tomoko Hirayama

ICMP2014-4938 SHAPE MEMORY GEL HAVING INTER-CROSSLINKING NETWORK STRUCTURE Jin Gong, Yoshitaka Amano, M. Hasnat Kabir, Masato Makino, Hidemitsu Furukawa

ICMP2014-4939 CREATION OF THE FOOD INK APPLICABLE IN A 3D FOOD PRINTER Jin Gong, Mariko Shitara, Ryo Serizawa, Masato Makino, Hidemitsu Furukawa

ICMP2014-4950 MECHANICAL PROPERTIES OF POLYMERIC SHAPE MEMORY HYDROGEL Md. Hasnat Kabir, Masato Makino, Jin Gong, Hidemitsu Furukawa

Students Design Competition
Cobo Center 415B 8:30 am – 10:00 am

10:30 am–Noon Parallel Sessions and Panels

NAMRC 1-40 Additive Manufacturing
Cobo Center 140B 10:30 am-noon
Session Chair: Sam Anand

NAMRC42-4402 EFFICIENT STRATEGIES FOR HOLLOWING OF PARTS IN RAPID PROTOTYPING
Amar Phatak, S. S. Pande

NAMRC42-4476 DROP-ON-DEMAND E-JET PRINTING OF CONTINUOUS FEATURES WITH AC-PULSE MODULATION ON HIGHLY INSULATING SUBSTRATES Chuang Wei, Hantang Qin, Chia-pin Chiu, Yuan-shin Lee, Jingyan Dong

NAMRC42-4504 MULTI-PHYSICS MODELING FOR LASER MICRO TRANSFER PRINTING DELAMINATION Ala'a Al-okaily, Placid Ferreira

MSEC 2-3-6 Tool Innovations
Cobo Center 310B 10:30 am-noon
Session Chair: Chris Arcona; Session Co-Chair: Barbara Linke

MSEC2014-4046 ADVANCED FIVE-PLANE LANCET NEEDLE DESIGN, GRINDING, AND TISSUE INSERTION Yancheng Wang, Roland K. Chen, Bruce L. Tai, Albert Shih

MSEC2014-4060 NONWOVEN WHEEL POLISHING OF Ti-6Al-4V AND Co-Cr-Mo ALLOYS Yancheng Wang, Bing Yan, Albert Shih

MSEC2014-4114 DEVELOPMENT OF NOVEL LONG-LIFE CBN WHEEL AT HIGH EFFICIENCY

CONDITION Hiroshi Hoshino, Fukuo Hashimoto, Kouichi Yoshimura, Akihiro Mizuno, Takeshi Mishima, Kazumasa Yoshida

NAMRC 1-20 Laser-based Processes
Cobo Center 311AB 10:30 am-noon
Session Chair: Frank Pfefferkorn

NAMRC42-4530 SELECTIVE LASER FOAMING OF GAS IMPREGNATED BIODEGRADABLE POLYMER
JinGyu Ock, Wei Li

NAMRC42-4434 PREDICTION OF TEMPERATURE PROFILE USING A FINITE DIFFERENCE METHOD FOR SELECTIVE LASER MELTING OF TI-6AL-4V TITANIUM ALLOY POWDER Luis Criales, Tugrul Ozel

NAMRC42-4441 REJUVENATION OF STEEL DIES WITH HOT WIRE LASER CLADDING David Schwam, Paul Denney, Michael Kottman

NAMRC 1-31 Nanomanufacturing
Cobo Center 312AB 10:30 am-noon
Session Chair: Yong Huang

NAMRC42-4432 DEVELOPMENT OF CARBON NANOTUBE / POLYVINYLIDENE DIFLUORIDE NANOCOMPOSITE BASED FORCE SENSOR SYSTEM Kaushik Parmar, Majid TabkhPaz, Md. Golam Mostofa, Simon Park

NAMRC42-4487 CHARACTERISATION OF ELECTROSPUN MAGNETIC NANOPARTICLE Fe₂O₃ / PVA NANOFIBERS N.H. AKHMAL NGADIMAN, Ani Idris, Noordin Mohd Yusof , Denni Kurniawan

NAMRC42-4488 PERFORMANCE EVALUATION OF ELECTROSPINNING PROCESS TO FABRICATE MAGNETIC NANOFIBERS VIA "DOE" Noordin Mohd Yusof, Ani Idris, Ehsan Fallahiarezoudar, Mohaddese Ahmadipour

MSEC 1-1-1 Microstructure evolution in machining processes - I
Cobo Center 313AB 10:30 am-noon
Session Chair: Mustapha Abouridouane; Session Co-Chair: Saurabh Basu

MSEC2014-3917 INTEGRATED MODEL OF BATTERY MANUFACTURING SYSTEM Li Yang , Qing Chang

MSEC2014-4003 UNDERSTANDING DEFORMATION ON MACHINED SURFACES Yang Guo, Dinakar Sagapuram, Anirban Mahato, Rachid M'Saoubi Seco, Kevin Trumble, Srinivasan Chandrasekar

MSEC2014-4011 MICROSTRUCTURE-BASED 3D FE MODELING FOR MICRO CUTTING FERRITIC-PEARLITIC CARBON STEELS Mustapha Abouridouane, Fritz Klocke, Dieter Lung

MSEC 2-5-4 Welding and Roll-Bonding
Cobo Center 412A 10:30 am-noon
Session Chair: Hui Wang; Session Co-Chair: Jingjing Li

MSEC2014-3991 EXPERIMENTAL STUDY ON FRICTION STIR WELDING OF DISSIMILAR AL 6061 TO TRIP 780/800 STEEL Xun Liu, Shuhuai Lan, Jun Ni

MSEC2014-4000 COMPREHENSIVE EXPERIMENTAL STUDY ON THE EFFECT OF PROCESS PARAMETERS IN WARM ROLL BONDING OF ALUMINUM SHEETS Matteo Strano, Juan S. Sanchez, Valerio Mussi, Michele Monno

MSEC 2-2-1 Material Characterization

Cobo Center 412B 10:30 am-noon

Session Chair: Arif Malik; Session Co-Chair: Chandra Nath

MSEC2014-3930 ENHANCED SURFACE RESIDUAL COMPRESSION OF CARBURIZED STEEL PARTS USING LASER PEENING PROCESS WITH PRELOAD Zhichao (Charlie) Li, B. Lynn Ferguson

MSEC2014-3973 MODELING OF PINION GEAR CARBIDE RE-HOBGING PROCESS Pravin Khurana, David King, Kevin Marseilles, Sankar Sengupta

MSEC2014-4152 PROCESSING OF POROUS ZIRCONIUM TUNGSTATE AND THEIR THERMOMECHANICAL PROPERTIES Mingang Wang, Truong Do, Patrick Kwon

MSEC 4-5-5 Challenges in Cloud Manufacturing-5

Cobo Center 413A 10:30 am-noon

Session Chair: Lin Zhang; Session Co-Chair: Xi Vincent Wang

MSEC2014-4078 COMPLEXITY OPTIMIZATION FOR COOPERATIVE SENSING USING COALITION GAMES Xi Ji, Quan Liu, Wenjun Xu, Duzhong Zhang

MSEC2014-4131 REPRESENTATION AND EXCHANGE OF DIGITAL CATALOGUES OF CUTTING TOOLS Yujiang Li, Qiuling Huang, Mikael Hedlind, Gunilla Sivard, Magnus Lundgren, Torsten Kjellberg

MSEC2014-4194 INTERNET-OF-THINGS-ENABLED SMART PRODUCTION LOGISTICS EXECUTION SYSTEM BASED ON CLOUD MANUFACTURING Ting Qu, Shuiping Lei, Yidong Chen, Zongzhong Wang, Hao Luo, George Q. Huang

ICMP 2-8-2 Welding/Joining/Particle Deposition/Surface and Interface - II

Cobo Center 413B 10:30 am-noon

Session Chair: Masahiro Fukumoto; Session Co-Chairs: Kazuhiko Sakaki, Kazuhiro Ogawa, Chiaki Sato, Toshio Hattori, Yukio Miyashita, Akio Suzumura, Yasuo Suga, Toshi-Taka Ikeshoji

ICMP2014-4921 JOINING DIAMOND TO AN FE-42NI PLATE USING ZN-AL SOLDER BY APPLYING ULTRASONIC VIBRATION IN AMBIENT AIR Kyohei Tada, Takahisa Yamazaki, Toshi-Taka Ikeshoji, Akio Suzumura

ICMP2014-4961 INFLUENCE OF CROSS SECTIONAL SHAPE OF COLD SPRAY NOZZLE ON SPRAY PATTERN OF COPPER COATINGS Kazuhiko Sakaki, Takuma Akashi, Takashi Hosono

ICMP2014-4959 DEPOSITION MECHANISM BASED ON NUMERICAL SIMULATION FOR THE

COLD-SPRAYED AG COATINGS ON AL AND SUS304 SUBSTRATES Jingfu Zhang, Kazuhiro Ogawa, Alain Combescure

ICMP 1-4-3 Design, Fabrication and Evaluation of Smart and Advanced Material - III
Cobo Center 414A 10:30 am-noon
Session Chair: Kazuaki Sanada; Session Co-Chairs: Tetsusei Kurashiki, Fumio Narita, Seiichi Hata

ICMP2014-5027 ELECTRO-FUSION JOINING OF CF/PPS COMPOSITES USING CARBON FIBER HEATING ELEMENTS Daiki Tanabe, Yusuke Moriwaki, Kazuaki Nishiyabu, Tetsusei Kurashiki

ICMP2014-4998 BENDING FATIGUE BEHAVIOR OF CU-AL-MN SHAPE MEMORY ALLOY Kazuhiro Kitamura

ICMP2014-5042 NEW TRENDS IN DEVELOPMENT OF CREEP-LIMITED ALLOYS FOR HOTTER ENERGY-EFFICIENT GAS-TURBINES Zainul Huda

ICMP 1-2-2 Ceramics and Ceramic Matrix Composites and Novel Porous Materials and their Applications

Cobo Center 414B 10:30 am-noon

Session Chair: Shuichi Wakayama; Session Co-Chairs: Yasuo Kogo, Kouichi Yasuda, Toshio Ogasawara, Wataru Nakao

ICMP2014-5020 MECHANICAL PROPERTIES OF CONTINUOUS FIBER REINFORCED SELF-HEALING CERAMICS AT ELEVATED TEMPERATURES Daisuke Maruoka, Shosei Miyamoto, Saho Sugiyama, Wataru Nakao

ICMP2014-4928 FABRICATION OF OPEN-CELLED MICROCELLULAR NICKEL FOAMS USING ELECTROPLATING OF POLYMER MICROSPHERE TEMPLATES Wei Jiang, Sriharsha Srinivas Sundarram, Wei Li

ICMP2014-4930 MECHANICAL AND PHYSICAL PROPERTIES OF SPHEROIDAL CELLULAR STRUCTURAL MATERIALS Satoshi Kishimoto, Yutaka Kagawa

ICMP 1-3-2 Cutting-Edge Technologies and Innovation Around Soft Matter - II

Cobo Center 415A 10:30 am-noon

Session Chair: Hidemitsu Furukawa; Session Co-Chairs: Hasnat Kabir, Jin Gong, Go Murasawa, Toshinori Makuta, Kazuto Takashima, Tomoko Hirayama

ICMP2014-5008 FABRICATION OF POLY (VINYLIDENE FLUORIDE) FILM USING DROP & DRY METHOD AND APPLICATION TO PRINTING TECHNOLOGY Noriyasu Yamada, Atsuki Shiratori, Akihiro Nishioka, Go Murasawa

ICMP2014-5024 FRICTIONAL MEASUREMENT OF GEL ENGINEERING MATERIALS WITH LASER PROCESSED SURFACE Naoya Yamada, Jin Gong, Masato Makino, M. Hasnat Kabir, Keisuke Maekawa, Masato Wada, Hidemitsu Furukawa

ICMP2014-5035 DESIGN OF REALISTIC EYE MODEL WITH SMART SHAPE MEMORY GEL (SMG)

Yosuke Watanabe, Jin Gong, Shota Murata, Masato Makino, M. Hasnat Kabir, Kyoko Murase,
Tsutomu Sunada, Hidemitsu Furukawa

Students Design Competition

Cobo Center 415B 10:30 am-noon

Noon–1:30 pm Lunch: SME Founders’ Lecture

1:30 pm–3:00 pm Parallel Sessions and Panels

MSEC 2-6-3 Advances in Additive Manufacturing III

Cobo Center 140B 1:30 pm-3:00 pm

Session Chair: Brandon Lane; Session Co-Chair: Chi Zhou

NAMRC42-4484 ADDITIVE MANUFACTURING OF PERSONALIZED ANKLE-FOOT ORTHOSIS Roland Chen, Lei Chen, Bruce Tai, Yancheng Wang, Jeffrey Wensman, Albert Shih

MSEC2014-4055 DEFORMATION CONTROL BASED ON IN-SITU SENSORS FOR MASK PROJECTION BASED STEREOLITHOGRAPHY Kai Xu, Yong Chen

MSEC2014-4063 THERMOMECHANICAL INVESTIGATION OF OVERHANG FABRICATIONS IN ELECTRON BEAM ADDITIVE MANUFACTURING Bo Cheng, Ping Lu, Kevin Chou

MSEC 5-2-2 Sustainable Manufacturing Systems Modeling

Cobo Center 310B 1:30 pm-3:00 pm

Session Chair: Qing Chang; Session Co-Chair: Zeyi Sun

MSEC2014-4014 PLANT LEVEL ENERGY SUPPLY ANALYSIS AND OPTIMIZATION IN ENERGY, ECONOMY AND ENVIRONMENT Lujia Feng, Laine Mears, Qilun Zhu, Cleveland Beaufort, Joerg Schulte

MSEC2014-4068 JOINT PRODUCTION AND ENERGY MODELING OF SUSTAINABLE MANUFACTURING SYSTEMS: CHALLENGES AND METHODS Yong Wang, Lin Li

MSEC2014-4105 MANUFACTURING PROCESS INFORMATION MODELS FOR SUSTAINABLE MANUFACTURING Lina Valivullah, Mahesh Mani, Kevin Lyons, Satyandra K. Gupta

NAMRC 1-21 Forming: Materials

Cobo Center 311AB 1:30 pm-3:00 pm

Session Chair: I.S. Jawahir

NAMRC42-4520 ON SURFACE DAMAGE OF POLYMER COATED SHEET METALS DURING FORMING Zalak Purohit, Ying Zhang, Jyhwen Wang

NAMRC42-4490 PHASE EVOLUTION IN HOT FORGING OF DUAL PHASE TITANIUM ALLOYS: EXPERIMENTS AND NUMERICAL ANALYSIS Stefania Bruschi, Gianluca Buffa, Antonino Ducato,

Livan Fratini, Andrea Ghiotti

NAMRC42-4443 SPRINGBACK STUDY OF BIMETALLIC MATERIAL DURING BENDING Shakil Kagzi,
Harit Raval, Anish Gandhi, Harshit Dave

NAMRC 1-41 Novel Machining Processes

Cobo Center 312AB 1:30 pm-3:00 pm

Session Chair: John Agapiou

NAMRC42-4407 FEASIBILITY STUDY ON CIRCULAR MILLING TECHNOLOGY FOR HOLE MAKING OF BI-LAYER COMPOSITE MATERIALS CONSISTING OF CFRP LAMINATES AND TITANIUM ALLOYS

Hukuzo Yagishita

NAMRC42-4413 IMPROVING THREAD MILLING W. Worthington Treasure

NAMRC42-4509 SURFACE DIMPLE MACHINING IN WHIRLING Takashi Matsumura, Masaki

Serizawa, Tomohiro Ogawa, Masanori Sasaki

MSEC 3-1-9 Metal Particles Involved

Cobo Center 313AB 1:30 pm-3:00 pm

Session Chair: Daniel A. Peterson; Session Co-Chair: Jinlong Song

MSEC2014-3957 HIGH PRODUCTION RATE SYNTHESIS OF CDS NANOPARTICLES USING A REVERSE OSCILLATORY FLOW METHOD Daniel A. Peterson, C. Padmavathi, Brian K. Paul

MSEC2014-3990 SUPEROLEOPHOBIC SURFACES ON AL AND MG ALLOY SUBSTRATES THROUGH RAPID SURFACE MICRO/NANOMETER-SCALE STRUCTURING Jinlong Song, Shuai Huang, Xin Liu, Wenji Xu

MSEC2014-4202 EFFECT OF DIE PROPERTIES ON FORMING OF MICRO-PARTS BY FORWARD-BACKWARD EXTRUSION OF 6063 ALUMINUM ALLOY Norio Takatsuji, Kuniaki Dohda, Tatsuya Funazuka

MSEC 2-5-5 Joining

Cobo Center 412A 1:30 pm-3:00 pm

Session Chair: Mihaela Banu; Session Co-Chair: Scott Miller

MSEC2014-4026 EVALUATING THE PERFORMANCE OF CURRENT SELF-PIERCE RIVET TECHNOLOGY FOR THE JOINING OF HIGH STRENGTH STEEL AND ALUMINUM ALLOYS Stephen Van Hall, Kip Findley, Aindrea Campbell

MSEC2014-4044 DISSIMILAR MATERIAL JOINT STRENGTH AND STRUCTURE FOR FRICTION STIR FORMING PROCESS Kenneth Ogata, Sladjan Lazarevic, Scott Miller

MSEC2014-4061 FRICTION STIR BLIND RIVETING FOR DISSIMILAR CAST MG AM60 AND AL ALLOY SHEETS Junying Min, Jingjing Li, Blair Carlson, Yongqiang Li, James Quinn, Jianping Lin, Weiming Wang

MSEC 2-2-2 Deformation Modeling

Cobo Center 412B 1:30 pm-3:00 pm
Session Chair: Zhichao (Charlie) Li; Session Co-Chair: Arif Malik

MSEC2014-4107 FULLY RESOLVED NUMERICAL SIMULATIONS OF FUSED DEPOSITION MODELING
Sadegh Dabiri, Steven Schmid, Gretar Tryggvason

MSEC2014-4137 SIZING DESIGN FOR 4-HIGH COLD ROLLING MILLS Andrew Nelson, Feng Zhang,
Arif Malik, Mark Zipf

MSEC2014-4183 A STRAIGHTENING STROKE-DEFLECTION MODELING AND SIMULATION
APPROACH BASED ON ONLINE MEASUREMENT Hong Lu, Yongquan Zhang, Okonkwo Valentine
Tochukwu, Sheng Gao

MSEC 2-8-2 Biological Material Cutting
Cobo Center 413A 1:30 pm-3:00 pm
Session Chair: Jason Z. Moore; Session Co-Chair: Robert Kohler

MSEC2014-4211 MAGNETIC IMPELLED ARC BUTT WELDING IMPLEMENTATION ON TRUCK
CHASSIS COMPONENTS Berna Balta

MSEC2014-4090 ENHANCEMENT OF KIRSCHNER WIRE FOR BONE DRILLING Bruce L. Tai, Fumitake
Nonoyama, Yancheng Wang, Albert Shih

MSEC2014-4209 REMOVAL OF CALCIFIED PLAQUE UTILIZING ORBITAL ATHERECTOMY Robert
Kohler , Tri Nguyen – University of Minnesota, Jeff McBroom

ICMP 2-8-3 Welding/Joining/Particle Deposition/Surface and Interface - III
Cobo Center 413B 1:30 pm-3:00 pm
Session Chair: Masahiro Fukumoto; Session Co-Chairs: Kazuhiko Sakaki, Kazuhiro Ogawa,
Chiaki Sato, Toshio Hattori, Yukio Miyashita, Akio Suzumura, Yasuo Suga, Toshi-Taka
Ikeshoji

ICMP2014-4962 EFFECT OF NICKEL POWDER MIXING ON CONICRALY COATINGS BY COLD SPRAY
Kangil Lee, Kazuhiro Ogawa

ICMP2014-5011 FORMATION BEHAVIOR OF BUBBLES AND ITS EFFECT ON JOINING STRENGTH IN
DISSIMILAR MATERIALS LASER SPOT JOINING BETWEEN PET AND SUS304 Yukio Miyashita,
Teppei Watanabe, Yuichi Otsuka

ICMP2014-5017 DOMINATION IN FLATTENING BEHAVIOR OF THERMALLY SPRAYED PARTICLES
Masahiro Fukumoto, Kun Yang, Kenta Nakano, Qinpeng Liu

ICMP 2-7-1 Surface Modification Technology, Coating, Wear and Tribology - I
Cobo Center 414A 1:30 pm-3:00 pm
Session Chair: Naoto Ohtake; Session Co-Chairs: Akira Azushima, Hiroki Akasaka,
Masanori Hiratsuka

ICMP2014-5043 ANALYSIS OF THE BULK WEAR VOLUME OF TURNING INSERTS FOR DIFFERENT
CARBIDE GRAIN SIZES Mathew Kuttolamadom, Laine Mears, Thomas Kurfess

ICMP2014-5026 FABRICATION OF MICRO SEGMENT STRUCTURED DLC FILMS Yumi Yoshida, Yoshinao Iwamoto, Makoto Matsuo, Hiroki Akasaka, Naoto Ohtake

ICMP2014-5010 HARDENING DLC COATINGS BY CYCLIC IMPACT LOAD AND SHOT-PEENING
Fumitake Nonoyama, Noritsuglu Umehara, Hiroyuki Kousaka, Takayuki Tokoroyama

ICMP 3-1-1 Creation and Applications of Micro-Nano Materials

Cobo Center 414B 1:30 pm-3:00 pm

Session Chair: Isaku Kanno; Session Co-Chairs: Seiji Aoyagi, Ming Yang, Yasunori Saotome, Seiichi Hata

ICMP2014-4983 THE EFFECT OF METAL BUFFER LAYERS ON OPEN-CIRCUIT VOLTAGE OF THIN-FILM THERMOELECTRIC MODULES Mizue Mizoshiri, Masashi Mikami, Kimihiro Ozaki, Mitsuhiro Shikida, Seiichi Hata

ICMP2014-4996 NEW FABRICATION METHOD OF MEMS THICK FILM MIRROR DEVICE OF CU-ZR-TI METALLIC GLASS Shigetaka Watanabe, Yutaka Nakamitsu, Junpei Sakurai, Seiichi Hata

ICMP2014-5028 COMBINATORIAL SEARCH FOR MAGNETOSTRICTIVE MATERIAL WITH HIGH PERMEABILITY AND HIGH RESISTIVITY Takuya Maetani, Yutaka Nakamitsu, Junpei Sakurai, Shigeki Nakagawa, Seiichi Hata

ICMP 1-3-3 Cutting-Edge Technologies and Innovation Around Soft Matter - III

Cobo Center 415A 1:30 pm-3:00 pm

Session Chair: Hidemitsu Furukawa; Session Co-Chairs: Hasnat Kabir, Jin Gong, Go Murasawa, Toshinori Makuta, Kazuto Takashima, Tomoko Hirayama

ICMP2014-4904 GRAVITATIONAL TEMPERING IN COLLOIDAL EPITAXY Sho Kawakami – The University of Tokushima Yoshihisa Suzuki, Atsushi Mori

ICMP2014-4933 SIMULATION OF PARTICLE DISPERSION IN TUBE UNDER GRAVITY FIELD Masato Makino

Students Design Competition

Cobo Center 415B 1:30 pm-3:00 pm

3:00 pm–3:30 pm Buses Board and Depart from Cobo Center to Ann Arbor

4:00 pm–5:30 pm Lab Tours at the University of Michigan College of Engineering

5:00 pm–5:30 pm Buses Board and Depart to Michigan Stadium

5:30 pm–7:00 pm Michigan Stadium Tours and Reception

- 6:15 pm** **Conference Group Photo at the Center of the Field
(weather permitting)**
- 7:00 pm–9:00 pm** **Awards Banquet: Jack Roth Stadium Club, Michigan
Stadium**
- 9:00 pm–9:30 pm** **Buses Board and Depart to Cobo Center and/or
Conference Hotels**

June 12 Thursday

7:30 am–4:00 pm Registration: Wu Symposium on Manufacturing Competitiveness

8:30 am–10:00 am MSEC-NAMRC Panel with Leaders of Manufacturing Innovation Institutes

Wu Symposium Panel: US Advanced Manufacturing Technology

10:30 am–noon Parallel Sessions and Panels

**Wu Symposium – International Emerging Advanced Manufacturing Technologies
Cobo Center 310B 10:30 am-noon**

**NAMRC 1-22 Machining Optimization
Cobo Center 311AB 10:30 am-noon
Session Chair: Tony Schimtz**

NAMRC42-4518 APPROACHES FOR IMPROVING SURFACE FLATNESS FOR FACE MILLING Jie Gu, John Agapiou

NAMRC42-4522 FIBER ORIENTATION ANGLE EFFECTS IN MACHINING OF UNIDIRECTIONAL CFRP LAMINATED COMPOSITES Viswanathan Madhavan, Gary Lipczynski, Brandon Lane, Eric Whitenton

NAMRC42-4525 FLATNESS IMPROVEMENT IN SINGLE POINT DIAMOND TURNING OF FINITE SIZED WORKPIECES Ahmed Syed Adnan, Sathyan Subbiah, Ko Jeong Hoon

**NAMRC 1-33 Process Planning for Machining
Cobo Center 312AB 10:30 am-noon
Session Chair: Laine Mears**

NAMRC42-4446 COST OPTIMIZATION AND EXPERIMENTAL DESIGN IN MILLING USING SURROGATE MODELS Jaydeep Karandikar, Zachary Brooks, Aoyu Chen, Masoumeh Aminzadeh, Thomas Kurfess

**NAMRC42-4444 TOWARDS A UNIFIED PROBLEM FORMULATION FOR 5-AXIS TOOLPATH PLANNING
Sushrut Pavanaskar, Sara McMains**

NAMRC42-4449 COST EFFECTIVE MACHINING OF TI-6AL-4V USING STATE-OF-THE-ART MACHINING CENTERS Shogo Nakashima, Zhigang Wang, Mark Larson

**MSEC 1-1-3 Manufacturing with Polymers
Cobo Center 313AB 10:30 am-noon
Session Chair: Wilfredo Moscoso; Session Co-Chair: Saurabh Basu**

MSEC2014-3908 TECHNOLOGY AND MECHANICAL PROPERTIES OF SAMPLES OBTAINED BY

INJECTION FROM ARBOFORM L, V3 NATURE REINFORCED WITH ARAMID FIBERS Dumitru Nedelcu, Constantin Carausu, Ciprian Ciofu

MSEC2014-3976 RESEARCH ABOUT KEY FACTORS IN JET PUNCTURING PROCESS FOR MULTILAYER COMPOSITE MATERIAL Yiyong Yao, Liping Zhao, Sheng Hu, Rongya Zhou, Mei Zheng

MSEC2014-4041 FABRICATION OF CONTINUOUSLY VARYING THICKNESS MICRO-CANTILEVER USING BULK LITHOGRAPHY PROCESS Kiran Bhole, Sunil Ekshinge, Prasanna Gandhi

MSEC 4-8-1 Competitive Manufacturing Engineering

Cobo Center 411BC 10:30 am-noon

Session Chair: Mohamed Seif ; Session Co-Chair: Mohamed Gadalla

MSEC2014-4016 SUSTAINING THE COMPETITIVE EDGE OF SMALL TO MEDIUM SIZE ENTERPRISES THROUGH INNOVATIVE MANUFACTURING SYSTEM DESIGN Mohamed Gadalla

MSEC2014-4023 OPTIMAL MACHINING PARAMETER SELECTION IN TITANIUM MILLING USING A DECISION ANALYTIC FRAMEWORK Jaydeep Karandikar, Chris Tyler, Ali Abbas, Tony Schmitz

MSEC2014-4034 RELATIONSHIP BETWEEN IMPLEMENTATION OF TQM, JIT, TPM AND SCM AND MANUFACTURING PERFORMANCE: EMPIRICAL EVIDENCES FROM INDIAN CONTEXT Vishnu Wakchaure, Keshav Nandurkar, Shrikant Kallurkar

MSEC 2-5-6 Formability and Residual Stresses

Cobo Center 412A 10:30 am-noon

Session Chair: Edmund Chu; Session Co-Chair: Eduardo Dupin

MSEC2014-4133 FORMABILITY ENHANCEMENT IN TITANIUM TUBE FLARING BY CONTROLLING THE STRAIN-PATH Chetan P. Nikhare, Brad Kinsey, Yannis Korkolis

MSEC2014-4069 EXPERIMENTAL ESTIMATION OF SIZE EFFECT AND FORMABILITY IN MICROSCALE DEEP DRAWING PROCESS USING COPPER SHEET Hong Seok Kim, Jung Soo Nam, Sangwon Lee

MSEC2014-4091 EFFECTS OF HIGH ROLLING LOADS ON RESIDUAL STRESS DISTRIBUTIONS Mohammed Yusuf Ali , Petr Michlik, Jwo Pan

MSEC 2-2-3 Constitutive Properties & Modeling

Cobo Center 412B 10:30 am-noon

Session Chair: Durul Ulutan; Session Co-Chair: Arif Malik

MSEC2014-3940 DEVELOPMENT AND VALIDATION OF CFD METHODOLOGY TO SIMULATE WATER QUENCHING PROCESS James Jan, Eben Prabhu, Ulrich Weiss, Aslihan Kaynar, John Lasecki, Sinan Eroglu

MSEC2014-4038 EFFECT OF PASTE PROPERTIES ON EXTRUDATE FREEZING TIME IN FREEZE-FORM EXTRUSION FABRICATION PROCESSES Mingyang Li, Robert Landers, Ming-Chuan Leu

MSEC2014-4204 IDENTIFICATION OF PROCESS DAMPING COEFFICIENT BASED ON MATERIAL CONSTITUTIVE PROPERTY Xiaoliang Jin

MSEC 4-5-6 Challenges in Cloud Manufacturing-6

Cobo Center 413A 10:30 am-noon

Session Chair: Robert X. Gao; Session Co-Chair: Dazhong Wu

MSEC2014-4008 A Q-LEARNING BASED SELECTIVE DISASSEMBLY PLANNING SERVICE IN THE CLOUD BASED REMANUFACTURING SYSTEM FOR WEEE Kai Xia, Liang Gao, Weidong Li, Lihui Wang, Kuo-Ming Chao

MSEC2014-4083 RFID INDOOR LOCALIZATION USING MASTER-SLAVE REFERENCE TAGS SCHEME FOR MANUFACTURING ENVIRONMENT Shilong Zhang, Quan Liu, Wenjun Xu, Zaiqun Liu

MSEC2014-4109 A SMART CLOUD-BASED SYSTEM FOR THE WEEE RECOVERY/RECYCLING Xi Vincent Wang, Brenda N. Lopez N, Lihui Wang, Jinhui Li, Winifred Ijomah

ICMP 1-7-1 Polymer and Polymer Matrix Composites - I

Cobo Center 413B 10:30 am-noon

Session Chair: Hiroyuki Kawada; Session Co-Chairs: Masamichi Kawai, Masayuki Nakada, Shinji Ogihara, Kazuaki NISHIYABU, Satoshi Kobayashi, Yoshinobu Shimamura

ICMP2014-4912 INTERLAMINAR SHEAR STRENGTH OF CFRP USING RECYCLED CARBON FIBER Yoshinobu Shimamura, Taichi Awaya, Keiichiro Tohgo, Tomoyuki Fujii, Idzumi Okajima, Takeshi Sako

ICMP2014-4935 EFFECT OF LONG-TERM HIGH TEMPERATURE ATMOSPHERIC EXPOSURE ON DAMAGE PROGRESS AND MECHANICAL PROPERTIES FOR CARON FIBER/POLYCYANATE UNIDIRECTIONAL COMPOSITES Yoshiyuki Kobayashi, Satoshi Kobayashi

ICMP2014-4997 MECHANICAL PROPERTIES OF UNIDIRECTIONAL COMPOSITE USING UNTWISTED CARBON NANOTUBE YARN AS A REINFORCEMENT Hiroyuki Kawada, Kaoru Sugano

ICMP 2-7-2 Surface Modification Technology, Coating, Wear and Tribology - II

Cobo Center 414A 10:30 am-noon

Session Chair: Naoto Ohtake; Session Co-Chairs: Akira Azushima, Hiroki Akasaka, Masanori Hiratsuka

ICMP2014-5040 A COMPARISON OF DISSIPATIVE ENERGY IN TWO DIFFERENT ASPERITY HEIGHT DISTRIBUTIONS IN HIP JOINT IMPLANTS Mohammad Hodaei, Kambiz Farhang

ICMP2014-5041 INVESTIGATION OF ROUGHNESS EFFET ON CONFORMAL CONTACT OF SPINE IMPLANT- CONTACT DAMPING AND NATURAL FREQUENCY Mohammad Hodaei, Kambiz Farhang

ICMP2014-4934 SOME INVESTIGATIONS ON CUTTING FORCE, SURFACE ROUGHNESS, AND CHIP FORMATION IN TURNING OF AISI 4340 ALLOY STEEL IN DIFFERENT CUTTING ENVIRONMENTS BY CBN INSERT Sadaiah Mudigonda, Deepakkumar Patil

ICMP 2-2-1 Advanced Fabrication Process

Cobo Center 414B 10:30 am-noon

Session Chair: Satoshi Kishimoto; Session Co-Chair: Kazunari Shinagawa, Masaaki Otsu, Toshio Haga, Ryo Matsumoto

ICMP2014-5031 FABRICATION OF MICRO-CHANNEL FROM THE POWDER BY PULSE ELECTRIC CURRENT SINTERING METHOD Satoshi Kishimoto, Yutaka Kagawa

ICMP2014-5039 THE EFFECT OF GLASSY-TRANSITION TEMPERATURE AND MELTING POINT AFFECTING ADHESION OF THERMOPLASTIC RESINS Motoyuki MURASHIMA, Noritsuglu Umehara, Hiroyuki Kousaka, Takayuki Tokoroyama

ICMP2014-4932 FLOW CONTROL BY PROGRESSIVE FORECASTING USING NUMERICAL SIMULATION DURING RESIN TRANSFER MOLDING OF COMPOSITE MATERIALS Ryosuke Matsuzaki, Seiji Kobayashi, Akira Todoroki, Yoshihiro Mizutani

ICMP 2-5-1 Advances in Manufacturing Processes of Biomedical Materials and Products - I

Cobo Center 415A 10:30 am-noon

Session Chair: Zhonggang Feng; Session Co-Chairs: Hidemitsu Furukawa, Tadashi Kosawada, Go Murasawa

ICMP2014-4902 TRACTION FORCE EXERTED BY INDIVIDUAL FIBROBLASTS OR CARDIOMYOCYTES IN COLLAGEN GELS Zhonggang Feng, Tadashi Kosawada, Daisuke Sato, Takao Nakamura, Tatsuo Kitajima, Mitsuo Umezu

ICMP2014-4936 EFFECT OF SURFACE MODIFICATION ON BIOACTIVITY OF BIOACTIVE CERAMICS Tomomi Izawa, Satoshi Kobayashi, Yoshikazu Teranish

ICMP2014-4955 NOVEL METHOD TO EXPLORE THE MECHANICAL INHOMOGENEITY OF HUMAN OSTEOBLAST NUCLEUS AND ITS RELATIONSHIP TO CELL CYCLE Tadashi Kosawada, Ryoma Harada, Ryosuke Ajiki, Hiroya Endo, Zhonggang Feng

MSEC 4-9-1 Sensing, Control and Optimization

Cobo Center 415B 10:30 am-noon

Session Chair: Radu Pavel; Session Co-Chair: Durul Ulutan

MSEC2014-4017 HIGH-DEFINITION METROLOGY ENABLED SURFACE VARIATION CONTROL BY REDUCING CUTTER-SPINDLE DEFLECTION Hai Nguyen, Hui Wang, S. Jack Hu

MSEC2014-4145 MULTI-OBJECTIVE PARTICLE SWARM OPTIMIZATION OF MACHINING PARAMETERS FOR END MILLING TITANIUM ALLOY Ti-6Al-4V Durul Ulutan, Abram Pleta, Laine Mears

MSEC2014-4058 A STUDY ON CONDITION MONITORING AND DIAGNOSIS OF INJECTION MOLDING PROCESS USING PROBABILISTIC NEURAL NETWORK METHOD Dae Seong Baek, Chengjun Li, Jung Soo Nam, Cho Rok Na, Myungho Kim, Byungohk Rhee, Sangwon Lee

Noon–1:30 pm

Lunch: Sponsored by ASME and German Research

Foundation

1:30 pm–3:00 pm Poster Sessions and Parallel Sessions and Panels

Wu Symposium – Manufacturing Competitiveness

Cobo Center 320 1:30 pm-3:00 pm

MSEC 2-3-8 Advances in Abrasive Machining Processes: Closing Session

Cobo Center 310B 1:30 pm-3:00 pm

Session Chair: Brigid Mullany; Session Co-Chair: Barbara Linke

MSEC2014-4102 A DISCUSSION ON REMOVAL MECHANISMS IN GRINDING POLYCRYSTALLINE DIAMOND Florestan Schindler, Fritz Klocke, Patrick Mattfeld, Richard Brocker

MSEC2014-4104 TOOL WEAR MODEL FOR DOUBLE FACE GRINDING WITH PLANETARY KINEMATICS Eckart Uhlmann, Michael Kleinschnitker, Tom Hoghé

MSEC2014-3921 REVIEW ON GRINDING TOOL WEAR IN TERMS OF SUSTAINABILITY Barbara Linke

NAMRC 1-23 Energy-efficient Manufacturing

Cobo Center 311AB 1:30 pm-3:00 pm

Session Chair: Anil Srivastava;

NAMRC42-4465 REAL-TIME MONITORING AND EVALUATION OF ENERGY EFFICIENCY AND THERMAL MANAGEMENT OF DATA CENTERS Babak Lajevardi, Karl R. Haapala, Joseph F. Junker

NAMRC42-4489 FEED DRIVE MODEL FOR MACHINE TOOL ENERGY CONSUMPTION SIMULATION Wonkyun Lee, Chan-Young Lee, Byung-Kwon Min

NAMRC 1-34 Micro-machining

Cobo Center 312AB 1:30 pm-3:00 pm

Session Chair: Burak Ozdoganlar;

NAMRC42-4433 PROCESS OPTIMIZATION AND DECISION SUPPORT FOR HIGH PERFORMANCE MICRO-MILLING OF TI-6AL-4V ALLOY Thanongsak Thepsonthi, Tugrul Ozel

NAMRC42-4510 GEOMETRICAL QUALITY IMPROVEMENT OF HIGH ASPECT RATIO MICROMILLED PINS Massimiliano Annoni, Bianca Maria Colosimo, Lara Rebaioli, Luca Pagani, Quirico Semeraro

NAMRC42-4533 EVALUATION OF BURR FORMATION IN MICRO GROOVES MACHINED WITH HSS MICRO END MILL IN DRY AND FLOOD CUTTING CONDITIONS Daniel Fernandes Da Cunha, Marcio Bacci da Silva, Gabriel Carraro

MSEC 1-1-4 Manufacturing with Metals

Cobo Center 313AB 1:30 pm-3:00 pm

Session Chair: Christopher Saldana; Session Co-Chairs: Yang Guo, Saurabh Basu

MSEC2014-3933 EFFECTS OF ULTRASONIC NANO-CRYSTAL SURFACE MODIFICATION ON THE

MICROSTRUCTURE AND PROPERTIES OF 304 AUSTENITIC STAINLESS STEEL Chang Ye ,
Abhishek Telang, Amrinder Gill, Sergey Suslov, Zhong Zhou, Dong Qian, Seetha Mannava, Vijay
Vasudevan

**MSEC2014-3948 NUMERICAL SIMULATION OF THE AUSTENITIZATION PROCESS IN
HYPOEUTECTOID FE-C STEELS** Zhenguo Nie, Gang Wang, Dehao Liu, Yiming (Kevin) Rong

**MSEC2014-3961 EXPERIMENTAL CHARACTERIZATION OF ELECTROPLATED CBN GRINDING
WHEEL WEAR: TOPOLOGY EVOLUTION AND INTERFACIAL TOUGHNESS** Tianyu Yu, Ashraf
Bastawros, Abhijit Chandra

MSEC 4-8-2 Competitive Manufacturing Engineering

Cobo Center 411BC 1:30 pm-3:00 pm

Session Chair: Mohamed Gadalla; Session Co-Chair: Mohamed Seif

MSEC2014-4119 MEASURING AND TRACKING OF LEAN MANUFACTURING TRANSFORMATION
Ahmed Soliman, Mohamed Gadalla

MSEC 2-5-7 Novel Forming Processes

Cobo Center 412A 1:30 pm-3:00 pm

Session Chair: Chetan P. Nikhare; Session Co-Chair: Christian Weddeling

**MSEC2014-4125 VAPORIZING FOIL ACTUATOR: CONTROLLING THE PRESSURE PULSE FOR
IMPULSE BASED METALWORKING** Steven Hansen, Anupam Vivek, Glenn Daehn

**MSEC2014-4127 A MIXED TOOLPATH STRATEGY FOR IMPROVED GEOMETRIC ACCURACY AND
HIGHER THROUGHPUT IN DOUBLE-SIDED INCREMENTAL FORMING** Rui Xu, Huaqing Ren, Zixuan
Zhang, Rajiv Malhotra, Jian Cao

**MSEC2014-3955 ANALYTICAL PREDICTION OF THE ACHIEVABLE STRENGTH FOR FORM-FIT
JOINING BY DIE-LESS HYDROFORMING** Christian Weddeling, Soeren Gies , Nooman Ben Khalifa,
A. Erman Tekkaya

MSEC 2-2-4 Composites, Polymers, Non-Metals

Cobo Center 412B 1:30 pm-3:00 pm

Session Chair: Arif Malik; Session Co-Chair: Zhichao (Charlie) Li

**MSEC2014-3925 AN ENHANCED MICROSTRUCTURE-LEVEL FINITE ELEMENT MACHINING MODEL
FOR CARBON NANOTUBE (CNT)-POLYMER COMPOSITES** Lingyun Jiang, Chandra Nath, Johnson
Samuel, Shiv Kapoor

**MSEC2014-3952 FINITE ELEMENT STUDY ON CHIP FORMATION AND FORCE RESPONSE IN
TWO-DIMENSIONAL ORTHOGONAL CUTTING OF ROCK** Demeng Che, Peidong Han, Bo Peng,
Kornel Ehmann

**MSEC2014-4115 CHARACTERIZATION OF FIBER PULL-OUTS IN DRILLED CFRP HOLES USING
CONFOCAL LASER MICROSCOPE** Patrick Kwon, Xin Wang, Dave Kim, Ruslan Pelikhatyy

MSEC 4-5-7 Challenges in Cloud Manufacturing-7

Cobo Center 413A 1:30 pm-3:00 pm

Session Chair: Martin Helguson; Session Co-Chair: Lei Ren

MSEC2014-4082 A SECURITY FRAMEWORK FOR CLOUD MANUFACTURING Yazhe Wang, Shunan Ma, Lei Ren

MSEC2014-4155 CLOUD-BASED PROGNOSIS: PERSPECTIVE AND CHALLENGE Yunjie Yang, Robert X. Gao, Zhaoyan Fan, Jinjiang Wang, Lihui Wang

MSEC2014-4171 AN INTEGRATED CYBER-PHYSICAL SYSTEM FOR CLOUD MANUFACTURING Lihui Wang, Robert X. Gao, Ihab Ragai

ICMP 1-7-2 Polymer and Polymer Matrix Composites - II

Cobo Center 413B 1:30 pm-3:00 pm

Session Chair: Hiroyuki Kawada; Session Co-Chairs: Masamichi Kawai, Masayuki Nakada, Shinji Ogihara, Kazuaki Nishiyabu, Satoshi Kobayashi, Yoshinobu Shimamura

ICMP2014-4944 EXPERIMENTAL EVALUATION OF LOCAL DAMAGE IN FIBER REINFORCED COMPOSITE MATERIALS Yuma Mannami, Ryohei Tsuji, Shinji Ogihara

ICMP2014-4945 DEFORMATION BEHAVIOR DURING PROCESSING IN CARBON FIBER REINFORCED PLASTICS Dai Ito, Ichiro Taketa, Shinji Ogihara

ICMP2014-4946 MECHANICAL PROPERTIES IN THERMOPLASTIC CFRP LAMINATES Koyo Koyanagi, Yu Nagata, Akira Matsuba, Yousuke Kouno, Shinji Ogihara

ICMP 2-7-3 Surface Modification Technology, Coating, Wear and Tribology - III

Cobo Center 414A 1:30 pm-3:00 pm

Session Chair: Naoto Ohtake; Session Co-Chairs: Akira Azushima, Hiroki Akasaka, Masanori Hiratsuka

ICMP2014-5013 ULTRA-LOW FRICTION PROPERTIES OF TA-CNX COATINGS IN THE ATMOSPHERE Takafumi Hattori, Noritsuglu Umehara, Takayuki Tokoroyama, Hiroyuki Kousaka, Kazuyoshi Manabe, Yoshio Fuwa

ICMP2014-4954 EVALUATION OF THE EFFECTS OF CARBURIZING TREATMENT ON SPRING PRODUCTION PROCESS Minoru Jimma, Wataru Nakao

ICMP2014-4960 THE CLARIFICATION OF THE RELATIONSHIP BETWEEN TRANSFER LAYER, TRANSFORMED LAYER AND FRICTION COEFFICIENT OF CARBONACEOUS COATING UNDER IN-SITU OBSERVATION OF SLIDING AREA Hidenori Nishimura, Takayuki Tokoroyam, Hiroyuki Kousaka, Noritsuglu Umehara

ICMP 2-2-2 Advanced Fabrication Process and Advanced Casting and Semisolid Forming Techniques

Cobo Center 414B 1:30 pm-3:00 pm

Session Chair: Satoshi Kishimoto; Session Co-Chairs: Kazunari Shinagawa, Masaaki Otsu,

Toshio Haga, Ryo Matsumoto

ICMP2014-4975 COLD ROLL FORMING OF CIRCULAR TUBE SECTION OF WROUGHT MAGNESIUM ALLOY SHEET Watari Hisaki, Shi-ichi Nishida, Toshio Haga, Shun-suke Kanai, Hidemitsu Hamano

ICMP2014-4906 PROPERTIES OF ROLL CAST ALUMINUM ALLOY FOR CASTING Toshio Haga, Hiroshi Fuse

ICMP2014-5003 ALUMINUM ALLOY CLAD STRIP CASTING USING A TWIN ROLL CASTER Toshio Haga, Watari Hisaki

ICMP 2-5-2 Advances in Manufacturing Processes of Biomedical Materials and Products - II
Cobo Center 415A 1:30 pm-3:00 pm

Session Chair: Zhonggang Feng; Session Co-Chairs: Hidemitsu Furukawa, Tadashi Kosawada, Go Murasawa

ICMP2014-4977 ULTRASONIC VIBRATION ASSISTED GRINDING OF BIO-CERAMICS: AN EXPERIMENTAL STUDY ON CHIPPINGS BY INDENTATION Hayelom Tesfay, Yuzhu Xie, Zhigang Xu, Bing Yan, Zhichao Li

ICMP2014-4999 BIOENGINEERING DESIGN OF AN ARTIFICIAL MYOCARDIAL ASSIST DEVICE USING SHAPE MEMORY ALLOY FIBERS Yasuyuki Shiraishi, Tomoyuki Yambe, Akihiro Yamada, Dai Homma,

ICMP2014-5001 MECHANICAL PROPERTIES OF BIO-HYDROGEL FROM CARDIAC EXTRACELLULAR MATRIX Kyohei Fujita, Yosuke Kayano, Tadashi Kosawada, Daisuke Sato, Takao Nakamura, Yasuyuki Shiraishi, Mitsuo Umezu, Zhonggang Feng

MSEC 3-1-8 Micromachining

Cobo Center 415B 1:30 pm-3:00 pm

Session Chair: Shih-ming Wang; Session Co-Chair: Ming-chyuan Lu

MSEC2014-4124 EXPERIMENTAL STUDY ON MICRO END-MILLING PROCESS OF Ti-6Al-4V USING NANOFLUID MINIMUM QUANTITY LUBRICATION (MQL) Dae Hoon Kim, Pil-Ho Lee, Jung Sub Kim, Hyungpil Moon, Sangwon Lee

MSEC2014-4062 A LOW-COST AND HIGH-RESOLUTION MICRO MACHINE TOOL WITH TOGGLE-BASED MECHANISM Shih-ming Wang, Chih-Peng Yang, Zhe-Zhi Ye, Chuntai Yen

MSEC2014-4087 INVESTIGATION OF PZT/SI WAFER MICRO MILLING USING DIAMOND COATED TOOL Tsen-Chen Tai, Ming-chyuan Lu, Chia-che Wu, Yen-Cheng Chou, Yao-Yang Tsai

3:30 pm–5:00 pm Parallel Sessions and Panels

Wu Symposium – Manufacturing Education

Cobo Center 320 3:30 pm-5:00 pm

MSEC 4-5-8 Industry Panel on Cloud Manufacturing
Cobo Center 310B 3:30 pm-5:00 pm
Session Chair: Lihui Wang; Session Co-Chair: Xun Xu

NAMRC 1-24 Manufacturing Machines and Tools
Cobo Center 311AB 3:30 pm-5:00 pm
Session Chair: Simon Park

NAMRC42-4414 OPTIMIZATION DRIVEN DESIGN OF LEAN MACHINE TOOL STRUCTURES Kiran Bhat, Tejinder Kundra, Subodh Modak, P.V.M Rao, Dinesh Sharma

NAMRC42-4475 CORRECTION FOR SYNCHRONIZATION ERRORS IN DYNAMIC MEASUREMENTS Vasishtha Ganguly, Tony Schmitz,

NAMRC42-4473 A STUDY ON GEOMETRY MODELLING OF BALL-END MILL WITH CHAMFERED CUTTING EDGE Wei Ji, Xianli Liu, Lihui Wang, Yue Meng, Xuefeng Wu

NAMRC 1-35 Surface Modification Processes
Cobo Center 312AB 3:30 pm-5:00 pm
Session Chair: Daniel Peterson

NAMRC42-4418 GRIND/LAP PROCESS WITH UV BONDED DIAMOND WHEEL Qiuyun Huang, Ioan Marinescu,

NAMRC42-4485 SURFACE INTEGRITY IN BURNISHING OF INCONEL 718 A. Sequera, C.H. Fu, Y.B. Guo, X.T. Wei

NAMRC42-4445 INCREASING THE EFFICIENCY OF THIN FILM SOLAR CELLS THROUGH SURFACE TEXTURING OF FLEXIBLE AND LIGHTWEIGHT POLYMER SUBSTRATE Himanshu Ingale, Murali Sundaram

MSEC 1-2-1 Fabrication, Processing and Testing of Composites
Cobo Center 313AB 3:30 pm-5:00 pm
Session Chair: Gap-yong Kim; Session Co-Chair: Hyung Wook Park

MSEC2014-3998 FABRICATION OF ALUMINUM NANOCOMPOSITE BY ULTRASONIC SPRAY DEPOSITED SHEET BONDING Mina Bastwros, Gap-yong Kim, Jie Wang

MSEC2014-4072 EXPERIMENTAL OBSERVATION FOR SURFACE MODIFICATION OF METAL PLATES USING CONTINUOUS ELECTRON BEAM POLISHING (CEBP) Jisoo Kim, Hyung Wook Park

MSEC2014-3999 FABRICATION OF ALUMINUM-SILICON CARBIDE COMPOSITE USING SPRAY-ASSISTED ROLL BONDING Nicholas R. Orlowsky, Mina Bastwros, Caleb Messmer, Gap-yong Kim

MSEC 3-1-6 Other Micro/Nano Processes
Cobo Center 411BC 3:30 pm-5:00 pm
Session Chair: Dustin K. Ward; Session Co-Chair: Marshall G. Jones

MSEC2014-3941 PREDICTING THE HERMETICITY OF COMPRESSION SEALS IN MICROCHANNEL HEMODIALYSERS Brian K. Paul, Dustin K. Ward

MSEC2014-4206 THE INVESTIGATION OF ENERGY LOSS IN CONFORMAL CONTACT MECHANICS OF CARPAL - RADIAL COMPONENTS IN WRIST ARTHROPLASTY Mohammad Hodaei, Kambiz Farhang

MSEC2014-4187 SUPERSONIC LASER DEPOSITION OF TUNGSTEN Marshall G. Jones, Andrew Cockburn, William O'Niell, Rocco Lupoi, Martin Sparkes

MSEC 2-13-2 Advances in Polymer Processing: Composites and Sintering

Cobo Center 412A 3:30 pm-5:00 pm

Session Chair: Felicia Stan; Session Co-Chair: Fabrizio Quadrini

MSEC2014-4167 Ultrasonic Consolidation of Thermoplastic Composite Prepreg for Automated Tape Layup Robert Rizzolo, Daniel Walczyk,

MSEC 2-2-5 Systems Modeling

Cobo Center 412B 3:30 pm-5:00 pm

Session Chair: James Jan; Session Co-Chair: Durul Ulutan

MSEC2014-4033 FAULT DIAGNOSIS OF ROLLING BEARINGS BASED ON MULTI-SCALE ENTROPY AND ENSEMBLED ARTIFICIAL NEURAL NETWORK Fen Chen, Quan Liu, Qin Wei, Deng Ting, Yan Ting, Su Wenqin, Peng Bingjie, Lei Zhao

MSEC2014-4070 FEATURE EXTRACTION OF ROLLING BEARING FAULT BASED ON ENSEMBLE EMPIRICAL MODE DECOMPOSITION AND CORRELATION DIMENSION Lei Zhao, Zude Zhou, Yang Yin, Rong Chen, Quan Liu, Qin Wei

MSEC2014-4123 MODELING AND COMPENSATION OF BACKLASH AND HARMONIC DRIVE-INDUCED ERRORS IN ROBOTIC MANIPULATORS Patrick Sammons, Le Ma, Kyle Embry, Levi Armstrong, Douglas Bristow, Robert Landers

MSEC 3-1-1 Laser processing I

Cobo Center 413A 3:30 pm-5:00 pm

Session Chair: Xin Zhao; Session Co-Chair: Wenqi Wang

MSEC2014-3932 COMPARISON OF MICROSCALE RAPID PROTOTYPING TECHNIQUES FOR MICROFLUIDIC APPLICATIONS Gordon D. Hoople, David A. Rolfe, Katherine C. McKinstry, Joanna R. Noble, David Dornfeld, Albert P. Pisano,

MSEC2014-4042 CONTROL OF ABLATION DEPTH AND SURFACE STRUCTURE IN P3 SCRIBING OF THIN-FILM SOLAR CELLS BY A PICOSECOND LASER Xin Zhao, Yunfeng Cao, Qiong Nian, Gary Cheng, Yung Shin

MSEC2014-4162 LASER MICRO PROCESSING OF CARBIDE TOOL INSERT Ashfaq Khan, Mohammad A. Sheikh, Lin Li, Mushtaq Khan, Syed H. Imran, Kamran Shah, Aftab Khan, Muhammad A. Z. Khan

ICMP 1-7-3 Polymer and Polymer Matrix Composites - III

Cobo Center 413B 3:30 pm-5:00 pm

Session Chair: Hiroyuki Kawada; Session Co-Chairs: Masamichi Kawai, Masayuki Nakada, Shinji Ogihara, Kazuaki Nishiyabu, Satoshi Kobayashi, Yoshinobu Shimamura

ICMP2014-4985 EVALUATION OF WEAR PROPERTIES OF INDUSTRIAL WASTE (SLAG)

REINFORCED POLYESTER COMPOSITES Vijaya Kumar Nimmagadda, M M M Sarcar, Ramji Koon

ICMP2014-4943 MECHANICAL BEHAVIOUR IN QUASI-ISOTROPIC CFRP LAMINATES WITH SMALL FIBRE ANGLE MISMATCH Nurul N. A. H., Hayato Nakatani, Shinji Ogihara – Tokyo University of Science

ICMP 2-7-4 Surface Modification Technology, Coating, Wear and Tribology - IV

Cobo Center 414A 3:30 pm-5:00 pm

Session Chair: Naoto Ohtake; Session Co-Chairs: Akira Azushima, Hiroki Akasaka, Masanori Hiratsuka

ICMP2014-4972 PREPARATION AND MECHANICAL CHARACTERIZATION OF AMORPHOUS BORON CARBON NITRIDE FILMS Shahira Liza Kamis, Naoto Ohtake, Hiroki Akasaka

ICMP2014-4937 EFFECTS OF HEATING HISTORY ON SINTERING PROPERTIES OF NICKEL POWDER COMPACTS Kazunari Shinagawa, Sho Utsunomiya

ICMP2014-5021 SHAPE MEMORY CHARACTERISTICS OF TI-NB-CU ALLOY FABRICATED BY PM PROCESS Akira Terayama, Hideki Kyogoku

ICMP 2-1-1 Advanced Casting and Semisolid Forming Techniques

Cobo Center 414B 3:30 pm-5:00 pm

Session Chair: Toshio Haga; Session Co-Chairs: Hisaki Watari, Shi-ichi Nishida

ICMP2014-4974 CLADDING OF ALUMINUM AND MAGNESIUM ALLOYS BY USING HORIZONTAL TWIN ROLL CASTING PROCESS Watari Hisaki, Toshio Haga, Mayumi Suzuki, Shi-ichi Nishida

ICMP2014-4992 SHEET METAL FABRICATION OF MAGNESIUM ALLOY WITH HIGH ALUMINUM CONTENT USING TWIN-ROLL CASTING PROCESS Watari Hisaki, Toshio Haga, Shi-ichi Nishida, Mayumi Suzuki

ICMP 2-5-3 Advances in Manufacturing Processes of Biomedical Materials and Products - III

Cobo Center 415A 3:30 pm-5:00 pm

Session Chair: Zhonggang Feng; Session Co-Chairs: Hidemitsu Furukawa, Tadashi Kosawada, Go Murasawa

ICMP2014-5004 EFFECT OF SIMULATED BODY FLUID (SBF) IMMERSION ON DELAMINATION BEHAVIOR OF PLASMA-SPRAYED HAP COATING ON TI SUBSTRATE Yuichi Otsuka, Lankeu Delgado Alfonso Javier, Yukio Miyashita, Yoshiharu Mutoh

MSEC 2-5-9 Joining

Cobo Center 415B 3:30 pm-5:00 pm

Session Chair: Jingjing Li; Session Co-Chair: Blair Carlson

MSEC2014-3950 EFFECT OF WELD DEFECTS ON TENSILE PROPERTIES OF LIGHTWEIGHT MATERIALS AND CORRELATIONS WITH PHASED ARRAY ULTRASONIC NONDESTRUCTIVE EVALUATION Mohammad Dewan, M. A. Wahab, Ayman Okeil

MSEC2014-4164 PERFORMANCE PREDICTION FOR ULTRASONICALLY WELDED BI-LAYERED AND MULTI-LAYERED ALUMINUM-COPPER SHEETS Liang Xi, Mihaela Banu, S. Jack Hu, Wayne Cai, Teresa Rinker

June 13 Friday

8:30 am–10:00 am Parallel Sessions and NSF Information Sessions

NSF Info Session
Cobo Center 310B 8:30 am-10:00 am

NAMRC 1-25 Manufacturing Systems
Cobo Center 311AB 8:30 am-10:00 am
Session Chair: Lihui Wang

NAMRC42-4500 POOL SEGMENTATION FOR PREDICTING WATER TRAP REGIONS IN WATER JET CLEANING Yusuke Yasui, Sara McMains, Thomas Glau

NAMRC42-4477 THE SIMULATION-BASED COMPARISON OF JOINT IMPLEMENTATION OF JIT, TQM, TPM AND SCM PARADIGMS Keshav Nandurkar, Vishnu Wakchaure, Shrikant Kallurkar ,

NAMRC42-4428 A GRAPH-BASED METHOD FOR THE APPLICATION AND QUANTIFICATION OF DESIGN FOR ASSEMBLY (DFA) KNOWLEDGE IN EARLY DESIGN Steven Turek , Sam Anand

NAMRC 1-36 Modeling of Machining Processes
Cobo Center 312AB 8:30 am-10:00 am
Session Chair: Tugrul Ozel

NAMRC42-4474 PROCESS DAMPING MILLING MODEL DATABASE Christopher Tyler, Tony Schmitz

NAMRC42-4440 2D AND 3D NUMERICAL MODELS OF ORTHOGONAL CUTTING USING AN ARBITRARY LAGRANGIAN-EULERIAN FORMULATION Elaine MacDonald, Steven Schmid

MSEC 2-13-1 Advances in Injection Molding
Cobo Center 313AB 8:30 am-10:00 am
Session Chair: Felicia Stan; Session Co-Chair: Fabrizio Quadrini

MSEC2014-3927 EXPERIMENTAL INVESTIGATION OF THE ADHESION BETWEEN THERMOPLASTIC POLYURETHANE AND ACRYLONITRILE–BUTADIENE–STYRENE SUBSTRATE Felicia Stan, Catalin Fetecau

MSEC2014-3928 IN-MOLD MONITORING OF TEMPERATURE AND CAVITY PRESSURE DURING THE INJECTION MOLDING PROCESS Catalin Fetecau, Felicia Stan, Laurentiu I. Sandu – Dunarea de Jos University of Galati

MSEC2014-4097 SINTERING OF POWDERS FROM FIBERGLASS RECYCLING Fabrizio Quadrini

MSEC 4-6-1 3D Optical Metrology Methods
Cobo Center 411BC 8:30 am-10:00 am

Session Chair: Bing Zhao; Session Co-Chair: Song Zhang

MSEC2014-3905 A NEW DIRECT STRAIN MEASUREMENT USING OPTICAL GRID METHOD Bin Zhao, Guobiao Yang

MSEC2014-3977 CALIBRATION FOR STEREO VISION SYSTEM BASED ON PHASE MATCHING AND BUNDLE ADJUSTMENT ALGORITHM Huijie Zhao, Zhen Wang, Hongzhi Jiang, Yang Xu

MSEC2014-4101 AUTOMATED HIGH-DYNAMIC RANGE 3D OPTICAL METROLOGY TECHNIQUE Lauran Ekstrand, Song Zhang

MSEC 2-2-6 Machining

Cobo Center 412B 8:30 am-10:00 am

Session Chair: Chandra Nath; Session Co-Chair: Zhichao (Charlie) Li

MSEC2014-3915 STRESS TRIAXIALITY IN CHIP SEGMENTATION IN THE HIGH-SPEED MACHINING OF TITANIUM ALLOY Xueping Zhang, Rajiv Shivpuri, Anil Srivastava

MSEC2014-4015 SURFACE INTEGRITY STUDIES IN BALL END MILLING OF THIN SHAPED CANTILEVER INCONEL 718 Raju Pawade, Nandkumar Bhopale

MSEC2014-4185 MULTIOBJECTIVE OPTIMIZATION OF END MILLING HCHCr USING AICrN PVD COATED CUTTERS WITH MOGA AND RSMO Shantisagar Biradar, Dr. Geeta Lathkar

MSEC 5-1-1 Sustainable Manufacturing for Emerging Technologies

Cobo Center 413A 8:30 am-10:00 am

Session Chair: Karl Haapala; Session Co-Chair: Lin Li

MSEC2014-3944 A NEW RFID BASED RTLS FOR DISCRETE MANUFACTURING WORKSHOP Liyun Nian, Yu Guo, Fangjian Wei, Jiajun Jiang, Liuyin Yuan

MSEC2014-4010 RELATIONSHIP INVESTIGATION BETWEEN ENERGY CONSUMPTION AND PARAMETERS IN SIZE REDUCTION AND PELLETING PROCESSES OF BIOFUEL MANUFACTURING Zeyi Sun, Donghai Wang, Lin Li, Meng Zhang

MSEC2014-4048 ELECTROCHEMICAL MACHINING RECYCLING FOR METAL RECOVERY AND WASTE ELIMINATION Brian Skinn, Savidra Lucatero, Stephen Snyder, E.J. Taylor, Timothy Hall, Maria Inman

ICMP 4-1-1 Monitoring, Sensing, and Control for Intelligent Machining and Inspection - I

Cobo Center 413B 8:30 am-10:00 am

Session Chair: Ikuo Ihara; Session Co-Chair: Iwao Matsuya

ICMP2014-4908 CHARACTERIZATION OF THE BOND QUALITY OF ADHESIVE PLATES UTILIZING ZERO-GROUP-VELOCITY LAMB WAVE GENERATED BY A LASER-ULTRASONIC TECHNIQUE. Hideo Cho, Yudai Yaguchi, Hiroaki Ito

ICMP2014-4911 ACOUSTIC RESONANT SPECTROSCOPY FOR DETECTING THE DEGRADATION OF POLYMER FILM DUE TO HEATING Hironori Tohmyoh, Yuhei Sakamoto

ICMP2014-4963 FEASIBILITY STUDY ON ULTRASONIC IN-SITU MEASUREMENT OF INTERFACIAL TEMPERATURE IN FRICTION SURFACE Shingo Aoki, Ikuo Ihara

MSEC 2-4-2 Advances in Nontraditional Manufacturing Processes-II

Cobo Center 414A 8:30 am-10:00 am

Session Chair: Franci Pusavec; Session Co-Chair: Anil Srivastava

MSEC2014-3992 AN INVESTIGATION OF THE EFFECT OF NITROGEN PHASE ON CRYOGENIC MACHINING PERFORMANCE AND A CASE STUDY ON MACHINING OF INCONEL 718 ALLOY Franci Pusavec, Cedric Courbon, Joel Rech, Janez Kopac, I.S. Jawahir

MSEC2014-4138 SINGLE POINT DIAMOND TURNING OF SILICON USING MICRO-LASER ASSISTED MACHINING TECHNIQUE Hossein Mohammadi, Huseyin Bogac Poyraz, Deepak Ravindra, John Patten

MSEC2014-4151 INVESTIGATION OF TROCHOIDAL MILLING IN NICKEL-BASED SUPERALLOY INCONEL 738 AND COMPARISON WITH END MILLING Abram Pleta, Durul Ulutan, Laine Mears

MSEC 3-1-3 Micro/Nano: Simulation

Cobo Center 414B 8:30 am-10:00 am

Session Chair: Hazim El-Mounayri; Session Co-Chair: Linfa Peng

MSEC2014-3986 ANALYSIS OF THE MICRO/MESO SCALE SHEET FORMING BY STRAIN GRADIENT PLASTICITY AND ITS CHARACTERIZATION OF TOOL FEATURE SIZE EFFECTS Linfa Peng, Peiyun Yi, Peng Hu, Xinmin Lai, Jun Ni

MSEC2014-4085 AFM-BASED NANOMACHINING: 3D MOLECULAR DYNAMICS SIMULATION AND EXPERIMENTAL VERIFICATION Rapeepan Promyoo, Hazim El-Mounayri, Kody Varahramyan

MSEC2014-4168 WEDGE RADIUS EFFECTS IN MECHANICAL EXFOLIATION OF HOPG: A MOLECULAR SIMULATION STUDY Sathyan Subbiah, Buddhika Jayasena, Chilla Damodara Reddy

MSEC 3-1-4 Micro/Nano: EDM/ECM

Cobo Center 415A 8:30 pm-10:00 pm

Session Chair: Murali M. Sundaram; Session Co-Chair: Soham S. Mujumdar

MSEC2014-4106 MODELING AND STUDY OF ELECTRODE PROFILES IN PULSED MICRO ELECTROCHEMICAL MACHINING PROCESS Deependra Singh, Murali M. Sundaram, Vinod Yadav

MSEC2014-4108 MODELING OF MELT-POOL FORMATION AND MATERIAL REMOVAL IN MICRO ELECTRO-DISCHARGE MACHINING Soham S. Mujumdar, Davide Curreli, Shiv Kapoor, David Ruzic,

MSEC2014-4157 ANALYSIS OF DEBRIS MOTION IN VIBRATION ASSISTED REVERSE MICRO ELECTRICAL DISCHARGE MACHINING SACHIN MASTUD, Naman Sandeep Kothari, Ramesh Singh, Johnson Samuel, Suhas Joshi

10:30 am–Noon Parallel Sessions

MSEC 2-5-8 Novel Forming Processes

Cobo Center 310B 10:30 am-noon

Session Chair: Jingjing Li; Session Co-Chair: Yannis Korkolis

MSEC2014-4148 ON THE MANUFACTURE OF LIGHTWEIGHT ALLOY TUBES VIA FRICTION STIR BACK EXTRUSION: PROCESS EVALUATION AND MATERIAL PERFORMANCE Justin Milner, Fadi Abu-Farha

MSEC2014-4161 EFFECT OF PULSED CURRENT WITH 1450 MPA MARTENSITIC STEEL Megan Lobdell, John Roth, Chetan P. Nikhare, Dennie R. Parsons, Dae-Ho Yang, Hyun-Woo Lee, Sung-Tae Hong

MSEC2014-4118 VAPORIZING FOIL ACTUATOR WELDING OF AA6061 WITH CU110: EFFECT OF HEAT TREATMENT CYCLES ON MECHANICAL PROPERTIES AND MICROSTRUCTURE Anupam Vivek, Steven Hansen, Bert Liu, Glenn Daehn

NAMRC 1-26 Machinability of Materials

Cobo Center 311AB 10:30 am-noon

Session Chair: Ping Guo

NAMRC42-4423 EXPERIMENTAL AND NUMERICAL INVESTIGATION OF TI6AL4V ALLOY MACHINABILITY USING TIALN COATED TOOLS Salman Pervaiz , Ibrahim Deiab, Amir Rashid, Cornel Mihai Nicolescu

NAMRC42-4461 CRYSTALLOGRAPHIC TEXTURES RESULTING FROM SEVERE SHEAR DEFORMATION IN MACHINING Saurabh Basu, M. Ravi Shankar

NAMRC42-4458 PREDICTION OF MACHINING INDUCED GRAIN SIZE WITH FE-BASED SIMULATIONS OF TI-6AL-4V AND IN-100 ALLOYS USING THE JOHNSON-MEHL-AVRAMI-KOLMOGOROV MODEL Yigit Arisoy, Tugrul Ozel ,

NAMRC 1-37 Tool Wear in Machining

Cobo Center 312AB 10:30 am-noon

Session Chair: Scott Smith

NAMRC42-4494 EXAMINING THE EFFECTS OF COOLING/LUBRICATING CONDITIONS ON TOOL WEAR IN MILLING HASTELLOY X Christopher Tyler, Tony Schmitz

NAMRC42-4507 A CUTTING CONDITION INDEPENDENT METHOD TO MONITOR TOOL WEAR IN MILLING Mehdi Nouri, Barry Fussell,

NAMRC42-4512 NUMERICAL INVESTIGATION OF TOOL PERFORMANCE IN MILLING OF TI-6AL-4V ALLOY Jianfeng Ma, Patrick Andrus, Sridhar Condoor, Shuting Lei

MSEC 1-1-2 Microstructure Evolution In Machining Processes - II

Cobo Center 313AB 10:30 am-noon

Session Chair: Ravi Shankar; Session Co-Chairs: Rachid M'Saoubi, Wilfredo Moscoso,

Saurabh Basu

MSEC2014-4174 EFFECT OF LENGTH SCALES ON MICROSTRUCTURE DURING SEVERE SHEAR DEFORMATION Saurabh Basu, M. Ravi Shankar

MSEC2014-4180 A UNIFIED APPROACH TO MODELING MATERIAL BEHAVIOR AND MICROSTRUCTURE EVOLUTION IN MACHINING OF OFHC COPPER Rui Liu, Meisam Salahshoor, Shreyes Melkote, Jayanti Subramaniam, Troy Marusich

MSEC2014-4213 INCIPIENT PLASTIC STRAIN FIELDS IN MATERIAL REMOVAL PROCESSES Fei Du, Cesar Moreno, Zhiyu Wang, Christopher Saldana

MSEC 4-6-2 Optical Metrology and Imaging for Manufacturing Industry

Cobo Center 411BC 10:30 am-noon

Session Chair: Bing Zhao; Session Co-Chair: Song Zhang

MSEC2014-4122 MULTI-SCALE SURFACE CHARACTERIZATION AND CONTROL BASED HIGH DENSITY MEASUREMENTS Xin Weng, Xiaoning Jin, Jun Ni

MSEC2014-4037 REVIEW: DIMENSIONAL ACCURACY IN ADDITIVE MANUFACTURING PROCESSES Pil-Ho Lee, Haseung Chung, Sangwon Lee, Jeongkon Yoo, Jeongkon Ko

MSEC 2-4-1 Advances in Nontraditional Manufacturing Processes-I

Cobo Center 412A 10:30 am-noon

Session Chair: Anjali V. Kulkarni; Session Co-Chair: Murali M. Sundaram

MSEC2014-3943 IMPROVEMENT OF FREE SURFACE QUALITY AND EDGE OVERGROWTH IN COMPLEX SHAPED PARTS ELECTROFORMING Zengwei Zhu, Xuelei Li, Ningsong Qu, Di Zhu

MSEC2014-4054 EXPERIMENTAL INVESTIGATION OF DRILLING INCORPORATED ELECTROCHEMICAL DISCHARGE MACHINING Baoyang Jiang, Shuhuai Lan, Jun Ni

MSEC 2-10-1 Equipment and Tooling Design Innovations to Enhance Manufacturing Processes

Cobo Center 412B 10:30 am-noon

Session Chair: Sathyan Subbiah; Session Co-Chair: Glenn Saunders

MSEC2014-3970 A MULTI-AXIS DEEP DRAWING SERVO PRESS WITH NON-OVERCONSTRAINED ARCHITECTURE Francesco Meoni, Adrian Lutey, Alessandro Fortunato, Marco Carricato

MSEC2014-4166 EXPERIMENTAL VALIDATION OF ACTIVE FIXTURE DESIGN METHODOLOGY Thomas N. Papastathis, Otto Jan Bakker, Svetan M. Ratchev, Atanas Popov

MSEC2014-4047 RESILIENCE MEASURES OF MANUFACTURING SYSTEMS UNDER DISRUPTIONS Xi Gu, Xiaoning Jin, Jun Ni

ICMP 4-1-2 Monitoring, Sensing, and Control for Intelligent Machining and Inspection - II

Cobo Center 413B 10:30 am-noon

Session Chair: Ikuo Ihara; Session Co-Chair: Hideo Cho

ICMP2014-4971 EXPERIMENTAL STUDY ON LATERAL DISPLACEMENT MEASUREMENT BY AIR-COUPLED ULTRASOUND FOR STRUCTURAL HEALTH MONITORING Iwao Matsuya , Fumiya Matsumoto, Ikuo Ihara

ICMP2014-5005 EVALUATION OF HEAT RESISTANT THERMAL SPRAY COATING FOR THE PISTON Masashi Sekine, Keiji Sonoya, Masanobu Nakamura, Ryuichi Hashimoto,

MSEC 4-1-4 Concurrent Design of Products, Assembly Systems, and Supply Chains

Cobo Center 414A 10:30 am-noon

Session Chair: John Wang; Session Co-Chair: Heng Kuang

MSEC2014-3906 APPLICATION OF SYSTEM LEARNING TO PRECEDENCE GRAPH GENERATION FOR ASSEMBLY LINE BALANCING Kavita R. Antani, Bryan Pearce, Rahul Renu, Mary E. Kurz , Joerg Schulte

MSEC2014-3974 METHODOLOGY FOR THE PARAMETRIC EXPLORATION OF PRODUCTION PLANNING'S IMPACT ON THE EARLY STAGE OF DESIGN Dennis J.L. Siedlak, Todd M. Schmidt, Olivia J. Pinon, Dimitri N. Mavris

MSEC2014-4100 CONCURRENT DESIGN OF ASSEMBLY PLANS AND SUPPLY CHAIN CONFIGURATIONS USING AND/OR GRAPHS AND DYNAMIC PROGRAMMING Heng Kuang, S. Jack Hu, Jeonghan Ko

MSEC 3-1-7 Laser Processing II

Cobo Center 414B 10:30 am-noon

Session Chair: Y.B. Guo; Session Co-Chair: Dong Lin

MSEC2014-3958 MAGNETIC FIELD ASSISTED NANOMANUFACTURING OF METAL OXIDE NANOMATERIALS Dong Lin, Biwei Deng, Gary Cheng

MSEC2014-4067 FABRICATION AND TRIBOLOGICAL FUNCTIONS OF MICRO DENT ARRAYS ON Ti-6Al-4V SURFACE BY LASER SHOCK PEENING R. Caslaru, Y.B. Guo, X.T. Wei

MSEC2014-4142 MULTI-MATERIAL CAPABILITY OF LASER INDUCED PLASMA MICRO-MACHINING Ishan Saxena, Kornel Ehmann

MSEC 4-1-5 Concurrent Design of Products and Machining Systems

Cobo Center 415A 10:30 am-noon

Session Chair: John Wang; Session Co-Chair: April Bryan

MSEC2014-4158 FABRICATION OF TAPERED BIO MIMETIC CILIA USING BULK LITHOGRAPHY AND CERAMIC MOLD Chandrashekar Adake, Prasanna Gandhi, Bhargava Kashyap, Parag Bhargava

MSEC2014-4143 AUTOMATIC DETECTION OF DIRECTIONS OF DIMENSIONAL CONTROL IN MECHANICAL PARTS Prashant Mohan, Payam Haghighi, Jami Shah, Joseph Davidson

Noon–1:00 pm Box Lunch Pickup

Notes