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Manufacturing Engineering Division

EDITOR: James A. Stori

FALL 2004

MESSAGE FROM THE CHAIR ▼ *Scott Smith, Chair*

My name is Scott Smith, and I am honored to serve as the Chair of the Manufacturing Engineering Division (MED) for 2004-2005. The MED Executive Committee for 2004-2005 includes Dave Stephenson (Vice Chair), Steven Liang (Program Chair), Mike Molnar (Secretary Treasurer), Jian Cao (Incoming Member), and Jun Ni (Manufacturing Technical Group Operating Board Representative). I thank them in advance for their time. They are all making a substantial volunteer effort that takes time away from their real jobs, and I appreciate their service! I am also pleased to know that Noha El-Ghobashy will continue to serve as our able and energetic ASME Staff Representative.

On behalf of the entire Executive Committee, it is my pleasure to extend greetings to the more than 4000 ASME members who have chosen MED as their primary selection in their ASME Membership Technical Division /Interest Profile. Greetings as well to the much larger number of ASME members who have included MED on their interest list.

When I was asked to make some opening remarks for the newsletter, and to set the tone for the division activities in the coming year, I was struck by the number I just quoted. Perhaps it caught you by surprise? There are over 4000 Primary Members in MED! Many, many more members include MED among their top 5 interest areas. How well, I wonder, is MED serving its membership? With total ASME membership in the 100,000 range, it is clear that the MED is a substantial, powerful, and vital part of the organization, but how active are the MED members? I think that we are somehow missing the mark in that the majority of MED Primary Members do not substantively participate in MED activities. I want us to work together to build a MED that engages most of the membership, and motivates and energizes their participation. I think that right now, at this moment, we have an historic opportunity to do so.

Indeed this is a time of dramatic change not only in ASME and our division, but in the manufacturing community as a whole. Manufacturing technologies are changing at an ever-increasing rate, and the rapid improvement in science and engineering have led to a staggering array of manufactured products. Competitive pressures within the U.S. and abroad make lifetime employment with one company, in one location, as a mechanical engineer in manufacturing seem uncertain to say the least. Even within our organization, change seems to be the only constant. ASME is in the middle of a massive reorganization, and MED's position in the new ASME is far from settled. It is more important now than it ever was to recognize that we are a community, and that we depend on each other.

I know for certain that in change there is opportunity. We have an opportunity to remake our division in a way that better serves our members. The Executive Committee has been actively pusuing this exact goal over the last few years. Among other things, we have:

1. Revised the By-Laws (Have you read them? They are definitely clearer than they were.)
2. Developed and put forward a proposal for a new Fall Manufacturing Conference, separate from IMECE, tailored specifically to the needs and interests of mechanical engineers in manufacturing. The new conference was outlined during the MED membership meeting at the NAMRC in Charlotte in June 2004.
3. Increased our division's presence at the National Manufacturing Week (NMW) Conference. (Did you see last year's program?)
4. Reorganized our division into technical committees, focused on particular areas within manufacturing. At the current time, these committees are:

a. Life Cycle Engineering
b. Manufacturing Systems
c. Manufacturing Equipment
d. Manufacturing Processes
e. Nano/Micro/Meso Manufacturing
f. Quality/Reliability

If you have not been to our website recently (or ASME's for that matter), please take a look, and explore some of the links. I hope you'll like what you see.

I don't want to focus, however, on what the Executive Committee has done. The Executive Committee is only a tiny fraction of the MED membership, and we need your help. I would like to focus on what you can do. I would like to take this opportunity to invite you to action. If you are one of the ASME members who listed MED as one of your interest areas, I know you are creative and energetic, and we need you. What can you do? I would suggest:

1. Visit the web site to see what is going on: http://www.asme.org/divisions/med/
2. Look at the list of Technical Committees. Find one you like. Contact the Chair and participate in whatever way you can. Help organize an IMECE symposium. Provide input to the state-of-the-art surveys. If you don't see a Technical Committee that suits

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IMECE 2003 REPORT ▼ *William J. Endres, 2003 Program Committee Chair*

MED was allocated 23 sessions in the 2003 IMECE conference program. The MED program included two sessions for the student design competition, two expert panel sessions, two "laboratory fresh" sessions, and 17 sessions in the traditional paper presentation format. Expert panel sessions were organized on reliability of manufacturing systems (Donmez and Joshi) and assembly sessions (part of the assembly systems symposium). The two laboratory fresh sessions focused on recent research developments in machining processes machine tools. Statistics for the nine proposed symposia are summarized below:

Symposium Title	TC	AS	PS	PA	A%	SA
Advanced Condition Monitoring and Maintenance Technologies	LC	9	7	4	57	1
Environmentally Conscious Design and Manufacturing Courses	LC	12	8	8	100	2
Control and Control–Oriented Modeling of Manufacturing Machines, Processes, and Systems	ME	32	19	10	53	2
Accuracy and Stability in Machining	ME	36	26	16	62	4
Advances in Machining of Hard Materials	MP	18	14	8	57	2
Manufacturing Processes for Semiconductor Materials and Devices	MP	15	10	8	80	2
Assembly Systems: Modeling, Analysis and Design for Quality and Productivity[1]	MS	26	24	20	83	3[2]
Advances in Tooling and Work Holding Systems	MS	15	10	8	80	2
Sensors in Manufacturing[3]	MS	5	4	0	0	0
Totals		**168**	**122**	**82**	**67**	**19**

TC = Sponsoring Technical Committee (LC = Life-cycle Engineering; ME = Mfg. Equipment; MP = Mfg. Processes; MS = Mfg. Systems; QR = Quality and Reliability); AS = Abstracts Submitted (by paper deadline); PS = Papers Submitted; PA = Papers Accepted; $A_{\%}$ = Acceptance Percent; SA = Sessions Assigned

1 Ten papers were presented in a poster session. 2 One session was used for panel. 3 Session was canceled.

The overall acceptance rate for the symposia was 67%, lower than past meetings due primarily to the higher number of submissions and a slightly lower number of allocated paper sessions. However, this enabled higher selectivity and, subsequently, improved program quality. To accommodate more papers than the 17 traditional sessions would permit, a poster session was secured from the IMECE Technical Program Chair for use by one of the two larger symposia (Assembly Systems). Papers were assigned based on the organizers' judgment regarding each paper's potential for more personal interaction (based on content, not quality) as compared to broader appeal. Papers that were judged to have broader interest appeal were placed in traditional presentation sessions while those with more specific interest appeal were placed in the poster session where lengthier small-group discussions were possible. The poster session was not used as an overflow; rather, it was dedicated to a single coherent activity of a large symposium.

Overall, the organizers did an excellent job, especially in light of the difficulties related to this year's transition to the new IMECE web-tool. I personally thank them for their patience and feedback related to this new tool that I believe, in the future, will provide significant time savings and improvement in programming quality. Although all symposia were of high quality, the organizers of the Accuracy and Stability in Machining symposium, T. Schmitz and J. Snyder, were selected to receive the 2003 MED Best Organizer of Symposium and Sessions (BOSS) Award.

As a result of the 2003 activities and previous experiences, three new initiatives were launched by MED. These are 1) Interactive Sessions; 2) IMECE Outstanding Paper Award; and 3) Documents Archive.

Interactive Sessions

Based on discussions at IMECE 2002, three ideas surfaced to promote an increase in interaction — something that the conference setting makes possible. Interactive sessions are those that are primarily based on discussion among the participants. These "Interactive Sessions" include, in order of increasing level of interactivity, "Laboratory Fresh" sessions, "Expert Panel" sessions and "Roundtable" sessions — the first and third were implemented on a trial basis in an effort to increase the value of the MED program. The topics of the Laboratory Fresh sessions and Roundtables were noted above; each Roundtable immediately followed a symposium or panel session and served as a direct follow-up to the session presentations. There were only two panels this year; however, they were planned more rigorously to include write-ups of panelists' thoughts. I wish to especially acknowledge the contributions of A. Donmez and G. Joshi for their leadership in organizing the Manufacturing Systems Reliability panel and moderating the follow-up roundtable, as well as the contributions of R. Landers and P. Bayly for their response and assistance (on short notice) in organizing the Laboratory Fresh session on Machine-Tools Research.

IMECE Outstanding Paper Award

Again, based on discussions at IMECE 2002, the process for this award has been altered. Some of the issues addressed were the lack of presenter attendance for the nominated paper, the lack of presentation quality as part of the award, the fact that "best" implied a guaranteed award whereas "outstanding" does not. A step-by-step selection process, which was ultimately agreeable to the Executive Committee, was implemented. The process ran very smoothly. I wish to acknowledge the timely efforts of many of the TC chairs (Bayly, Kurfess, Landers, Li, Melkote, Stori, and Williams) who contributed to this process.

Documents Archive

Standard documents have been developed and archived for each Program Chair to use and then pass along to the next year's Program Chair. These documents include:

- Sample Symposium Proposal (and Call for Papers)
- Sample Call for Symposia
- Symposium Organizers responsibilities (drafted by B.Williams) ▼

Manufacturing Engineering Division Honors Committee ▼ *Barney Klamecki, Honors Committee Chair*

The Manufacturing Engineering Division administers two awards; the William T. Ennor Manufacturing Technology Award and the Blackall Machine Tool and Gage Award.

William T. Ennor Manufacturing Technology Award

The William T. Ennor Manufacturing Technology Award was established in 1990 in honor of William T., "Bill", Ennor who was the Assistant Director of Research at the Alcoa Aluminum Research Laboratories. The award recognizes *"one (or a team of) individual(s) who has (have) developed or contributed significantly to the development of an innovative manufacturing technology, the implementation of which has resulted in substantial economic and/or societal benefits."*

2003 William T. Ennor Manufacturing Technology Award

The 2003 William T. Ennor Manufacturing Technology Award was given to Richard E. DeVor and Shiv G. Kapoor, Department of Mechanical and Industrial Engineering, University of Illinois. The award citation reads *"For pioneering development of the theory and application of mechanistic modeling of machining processes, for their contributions to the improvement of machine tool systems, for their establishment of successful manufacturing research centers, for their contributions to quality and productivity improvements in manufacturing, and for the societal and economic benefits that have accrued."*

2004 William T. Ennor Manufacturing Technology Award

The 2004 William T. Ennor Manufacturing Technology Award recipient is Stephen Malkin, Department of Mechanical and Industrial Engineering, University of Massachusetts. The award was made *"For his research contributions leading to a comprehensive fundamental understanding of grinding and abrasive machining processes, for developing enabling technologies to enhance the efficiency of grinding and abrasive machining processes in industry, and for taking a leading role in the transformation of grinding and abrasive machining from an empirical craft to an applied science."*

Blackall Machine Tool and Gage Award

The Blackall Machine Tool and Gage Award was established in 1954 by Frederick S. Blackall, Jr., Fellow and 72nd President of the Society. The Award is given to the best paper(s) clearly concerned with or related to the design or application of machine tools, gages, or dimensional measuring instruments, submitted to ASME for presentation and publication.

2003 Blackall Machine Tool and Gage Award

The recipients of the 2003 Blackall Machine Tool and Gage Award were G. Xiao, R. Stevenson, I. M. Hanna and S. A. Hucker, General Motors Research and Development Laboratories. The award was for their paper Modeling of Residual Stress in Grinding of Nodular Cast Iron, ASME Journal of Manufacturing Science and Engineering, Vol. 124, 2002, pp. 833-839, *" that includes phenomenological, analytic, and numerical models for predicting residual stresses generated in grinding, presents experimental validation of the resulting process model and extends grinding process models to multiple pass grinding typical of production operations."*

2004 Blackall Machine Tool and Gage Award

The 2004 Blackall Machine Tool and Gage Award recipients are J. F. Hurtado and S. N. Melkote, Woodruff School of Mechanical Engineering, Georgia Institute of Technology. The award winning paper is "Modeling and Analysis of the Effect of Fixture-Workpiece Conformability on Static Stability," ASME Journal of Manufacturing Science and Engineering, Vol. 124, 2002, pp. 234-241. The paper, *"defines for the first time quantitative conformability metrics that describe the effects of all stiffness components on fixture-workpiece stability in a complete, experimentally tested, analysis."*

Formal presentations of these MED administered awards are made at the International Mechanical Engineering Congress and Exposition.

Award and Society Fellow Nominations

Nominations for the 2005 Ennor Manufacturing Technology Award and Blackall Machine Tool and Gage Award must be submitted before February 1, 2005 to the Manufacturing Engineering Honors Committee. The committee prepares recommendations and submits them to the ASME Committee on Honors before March 1. Nomination forms and lists of past recipients are available at: http://www.asme.org/ divisions/med/awards/

The Division Honors Committee will provide help in preparing nominations if the request is received before December 1, 2004. Contact Barney Klamecki, MED Honors Committee chair, klamecki@me.umn.edu.

ASME has streamlined the Fellow nomination process, shortening the time between nomination and possible approval. The nomination procedure, application forms and a list of fellows are available at: http://www.asme.org/member/fellow/ ▼

Message from the Chair

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you, propose a new one of your own. (We're ready to listen)

3 Come to a meeting.

a. IMECE is in Anaheim California November 13-19, 2004. Particularly if you are in that area, and particularly if you have never attended an IMECE before, I encourage you to attend. If you went often in the past, but got out of the habit, please come back. We need your input.

b. NMW is in Chicago March 7-10, 2005. Particularly if you are in that area and particularly if you have never attended NMW before, please come. Come see that the focus of NMW is different than that of IMECE.

c. Remember that in all of our meetings, students are especially welcome.

4 Nominate a friend or colleague to be an ASME Fellow. The procedure is described, and the forms can be found at: http://www.asme.org/member/fellow/ Our community is full of unsung heroes. Certainly one of the greatest services we can provide to the other members of our manufacturing community is to recognize their achievements. On that note,

5 Nominate a friend or colleague for one of the division or society awards. The description of the manufacturing-related awards can be found at: http://www.asme.org/divisions/med/awards/index.html, while the entire list of ASME awards can be found at http://www.asme.org/honors/

6 Contact us. If you have an idea for something the division could do to better serve you, contact me directly (Scott Smith at kssmith@uncc.edu). Please call me Scott. Alternatively, contact any of the other Executive Committee members. If you want to participate in a way that we haven't thought about…welcome! We want to hear your thoughts, suggestions, comments, concerns and even criticisms.

I invite you to take action to help shape your MED into an organization that meets your expectations. Let's get started. ▼

Program Committee: Shivakumar Raman (Chair) and Shreyes Melkote (Co-Chair)

Manufacturing Processes (Technical Committee Chair: Robert Williams)

Advances in Bio-Manufacturing

Micro/nano-technology based bio-fabrication; novel manufacturing process in bio-applications; manufacturing of medical implants, devices, and artificial organs; synthesis and applications of biomaterials in bio-manufacturing and tissue engineering; fabrication of tissue scaffolds and tissue engineered substitutes; cell/organ printing and computer-aided tissue engineering; freeform fabrication for bio-manufacturing; and development of standard test methods for bio-manufacturing. Organizers are *Prof. Wei Sun, Drexel University, Tel: 215-895-5810, E-mail: sunwei@drexel.edu, and Dr. Francis Wang, NIST,Tel: 301-975-6726, E-mail: francis.wang@nist.gov*

New Materials, Processes, and Technology for Automotive Body Manufacturing: Challenges and Solutions

New materials for automotive body applications, such as high strength, dual phase, TRIP and laminated steels, aluminum, magnesium and titanium alloys, composites, polymers, and nano materials; new material processes in the areas of sheet rolling, casting, extruding, forming, joining and assembly, general assembly, material fixturing and handling; and advanced concepts, technologies and their implementations in automotive body manufacturing, such as virtual manufacturing, agile manufacturing, e-manufacturing, environmentally friendly manufacturing, and extreme manufacturing. Organizers are *Dr. Wayne Cai, General Motors, Tel: 586-986-1478, E-mail: wayne.cai@gm.com, and Prof. Wei Li, University of Washington, Tel: 206-543-5339, E-mail: weiwli@u.washington.edu*

Surface Integrity and Product Performance of Meso/Micro/Nano-Scale Machining Hard/Brittle Materials

Machined surface finish, surface and sub-surface cracks, dimensional accuracy and form errors; residual stresses, thermally transformed layers, strain/strain gradient hardened layers and meso/micro/nano-structures of machined surfaces; tooling and instrumentation; process mechanics; effect of process parameters and machining dynamics on the control and variability of surface integrity; and modeling and quantification of the causal effects of surface integrity to product performance. Organizers are *Prof. Y.B. Guo, University of Alabama, Tel: 205-348-2615,E-mail: yguo@coe.eng.ua.edu, Dr. David Yen, Delphi Corporation, Tel: 937-455-9259, E-mail: david.w.yen@delphi.com*

Advances in Sheet Metal Forming

Control of forming processes; boundary condition modeling; fracture and failure; yield criterion modeling; machine dynamics; new/emerging forming technologies (e.g. laser forming, microforming, rapid tooling, etc.); material's microstructure evolution and characterization during metal forming; and computation methods in modeling and designing of forming processes. Organizers are *Prof. Brad Kinsey, University of New Hampshire, Tel: 603-862-1811, E-mail: bkinsey@unh.edu, and Dr. Amit Bagchi, NIST, Tel: 301-975-3638, E-mail: amit.bagchi@nist.gov.*

Process Development and Modeling in Micro/Meso-Scale Machining

Development of micro-mechanical machining, microforming, micromolding, and micro-laser processing processes; materials behavior characterization; interfacial phenomena; process mechanics/dynamics; process innovation; and effect of tool geometry in micro/meso-scale machining. Organizers are *Prof. Yong Huang,Clemson University, Tel: 864-656-5643, E-mail: yongh@clemson.edu, Dr. Santosh Ranganath, Delphi Research Labs, Tel: 586-323-1771, E-mail: santosh.ranganath @delphi.com.*

Advances in Thermal Aspects of Emerging Machining Technologies

Heat transfer models that address uniqueness in emerging machining technologies, e.g., size effects; sensing techniques at micro-scale levels for improved insight into the thermal transport in machining; thermal aspects in meso/micro/nano cutting, high speed machining, laser machining, and in machining of advanced materials, e.g., ceramics, nanocellular foams; thermal transport effects on the part subsurface characteristics (in micro/ nano-scale) and performance; thermal transport effects on the tooling efficiency and the tool life; and novel thermal management for environmentally benign machining. Organizers are *Prof. Y. Kevin Chou, University of Alabama, Tel: 205-348-0044, E-mail: kchou@coe.eng.ua.edu, and Dr. Robert Ivester, NIST, Tel: 301-975-8324,E-mail: rob.ivester@nist.gov.*

Life Cycle (Technical Committee Chair: C. James Li)

Advanced Condition Monitoring and Maintenance Technologies

Sensors and signal processing algorithms, Equipment condition and processes monitoring, Diagnosis and prognosis methodology, CBM system design and optimization, Maintenance action scheduling based on CBM and Reliability life models and Industrial case studies. Organizers are *Prof. C. James Li, Dept. of Mechanical, Aerospace and Nuclear Engineering, RPI, Troy, NY 12180, 518-276-6192, Fax: 518-276-2623, Lic3@rpi.edu. Dr. Suk Hwan Choi, GE Gas Turbines (Greenville), L.L.C, 300 Garlington Road, GTTC, Mail Drop 200D Greenville, SC 29602, (864) 254-4598, Fax: (864) 254-3941, sukhwan.choi@ps.ge.com.*

Advanced Technologies in Environmentally Conscious Manufacturing

1) the impact of interdisciplinary areas including heat transfer, thermodynamics, fluid dynamics, materials, control, tribology, and nanotechnology on environment in manufacturing; 2) sustainability issues in machining and material processing including milling, turning, drilling, forging, stamping, and forming; 3) innovative improvement in process design and monitoring techniques to reduce waste and hazardous materials in manufacturing. Papers that specifically explore these issues through process models/simulations, experimental investigations, new sensor and monitoring techniques will be reviewed. Organizers are *Richard Y. Chiou, Associate Professor, Drexel University, Applied Engineering Technology, One Drexel Plaza, 3001 Market Street, Suite 100, Philadelphia, PA 19104-2875, TEL: 215-895-5960, FAX: 215-895-4988, Email: Richard.Y.Chiou@drexel.edu, and Dr. Mark T. North, THERMACORE Inc., 780 Eden Road, Lancaster, PA 17601, TEL: (717) 569-6551, FAX: (717) 569-4797, north@thermacore.com.*

Quality and Reliability (Technical Committee Chair: Tien-I Liu)

Condition Monitoring of Manufacturing Machines, Processes and Systems

Papers relating to theoretical concepts, practical application based algorithms, and monitoring & evaluation techniques are sought. Those papers that combine theoretical developments with experimental assessments while maintaining direct relevance and applicability to

the industrial sector are especially sought. Specific topics of interest include, but are not limited to: signal processing algorithms related to sensing process conditions, monitoring and controlling techniques, diagnosis and preventative maintenance methodologies, quality evaluation and control systems, advances in sensing technologies, smart devices, tool monitoring strategies, and adaptive processes. Organizers are *Prof. John T. Roth, Mechanical Engineering, SEET, Penn State - Erie, 5091 Station Rd., Erie, PA 16563, Tel: 814-898-7587, Fax: 814-898-6125, Email: jtr11@psu.edu, and Dr. X. Shaw Yang, Manufacturing Engineering, Cummins Inc., 3219 Wheaton Ct., Columbus, IN 47203, Tel: 812-377-2583, Fax: 812-377-9887, Email: xshawyang@yahoo.com.*

Advances in Diagnostics, Prognostics and Anomaly Detection in Transportation Devices

Theoretical and experimental advances in the development and implementation of advanced methods for diagnosis, performance forecasting and anomaly detection in transportation devices, such as airplanes, automobiles, trains etc. The goal of this symposium is to present theoretical concepts and practical state-of-the-art approaches to the problems of early detection, recognition and prediction of faults in complex, highly dynamic and unpredictable systems, such as transportation devices. Organizers are *Dr. Dragan Djurdjanovic, Department of Mechanical Engineering, University of Michigan, 2350 Hayward Street, Ann Arbor, MI 48109-2125, Tel: (734) 763-9975, Fax: (734) 936 0363, Email: ddjurdja@umich.edu, and Dr. William L. Miller, Director of the Innovations Center, ETAS Inc., 3021 Miller Road, Ann Arbor, MI 48103, Tel: (734) 604 6677, Fax: (734) 997 9449, Email: bill.miller@etasinc.us.*

Collaborative Manufacturing for Product Quality

Design and manufacturing are increasingly distributed and need a new paradigm to develop and produce high quality products faster and cheaper. The objective of this symposium is to report innovative approaches using the latest IT tools including the Internet, e-commerce and agent technologies. Organizers are *Dr. Jerry Y.H. Fuh (mpefuhyh@nus.edu.sg, Fax: +65 6779-1459), National University of Singapore and Dr. Weiming Shen (weiming.shen@nrc.gc.ca, Fax: (519) 430-7064), NRC Canada.*

Manufacturing Systems (Technical Committee Chair: TBA)

Advances in Smart Machines/Smart Factory Technology

Specific topics related to smart machines/smart factory include Machine Tool Performance Characterization, Machine Tool Condition Monitoring, Predictive Process Modeling and Optimization, Virtual Machining, Predictive Tolerance Analysis and Control, Predictive Quality Control and Improvement, Production Monitoring and Control, Factory Bottleneck Detection, Lean Manufacturing, Digital Manufacturing. Organizers are *Samuel H. Huang, Department of Mechanical, Industrial and Nuclear Engineering, University of Cincinnati, Cincinnati, OH 45221, Tel: 513-556-1154, Fax: 513-556-3390, Email: sam.huang@uc.edu, and Jim Dallam, Cincinnati Lamb, 2200 Litton Lane, Hebron, KY 41048, Tel: 859-534-4619, Fax: 859-534-4992, Email: Jim_Dallam@cinmach.com.*

Assembly Systems - Design, Modeling and Analysis

Tolerance analysis and synthesis, Fixture design, Compliant assembly, Monitoring and system diagnosis, Design for assembly and disassembly, Digital design of assembly systems, Reconfigurability and reusability analysis, Macro and micro assemblies, Throughput analysis for different configurations, Web based applications for design and control of assembly systems, Aluminum intensive assemblies - quality prediction, Scalability and convertibility, Information management. Organizers are *Prof. Hyunjune Yim, Department of Mechanical Engineering, Hongik University, 72-1 Sangsoo Dong, Mapo Ku, Seoul, 121-791, KOREA, Tel: +82-2-320-1489, Fax: +82-2-322-7003 and Dr. Jaime Camelio. A.T. Kearney, Inc., 2000 Town Center, Suite 1600, Tel: (248) 495-3209, Fax: (248) 204-9100, Email: jaime.camelio@atkearney.com*

Manufacturing Machines (Technical Committee Chair: Robert Landers)

Control of Manufacturing Machines, Processes, and Systems.

Precision material removal and deposition, Modular and reconfigurable software architectures, Process control of machining and non-traditional processes, Parallel (simultaneous) manufacturing systems, Geometric and thermal error compensation, Manufacturing system supervision, Multi-spindle systems, High-speed contouring, Intelligent manufacturing systems, Robust control techniques, Deburring and finishing processes. Organizers are *Dr. Robert G. Landers, Department MAEEM, University of Missouri at Rolla, 1870 Miner Circle Rolla, MO 65409-0050, Tel: (573) 341-4586, Fax: (573) 341-6899, Email: landersr@umr.edu, and Dr. Ahmed Zaki, KVH Industries, Inc., Tel: (401) 847-3327, Fax: (401) 849-0045, Email: www.kvh.com.*

Mechanical Micromachining Science and Technology.

Three-dimensional ultra-precision machining, Mechanics of Micromachining, Dynamics of Micromachining, Miniature machine tool design and evaluation, Micromachining Metrology, Novel machine-tool designs for micromachining, and Hybrid techniques for mechanical manufacturing at the micro scale. Organizers are *Dr. Burak Ozdoganlar, Department of Mechanical Engineering, Carnegie Mellon University, 303 Scaife Hall, 5000 Forbes Ave., Pittsburgh, PA 15213-3890, Tel: (412) 268-9890, Fax: (412) 268-3348, Email: burakoz@andrew.cmu.edu and Dr. A. Donmez, Manufacturing Metrology Division, NIST, 100 Bureau Drive, Stop 8220, Gaithersburg, MD 20899-8220, Tel: (301) 975-6618, Email: alkan.donmez@nist.gov.*

Process Model Based Control of Dimensional Errors in Multistage Manufacturing Systems.

Improved modeling of dimensional errors in the process, Equipment for rapid and accurate measurements of dimensional workpiece quality, Flexible fixturing in multistage manufacturing, Description of diagnosable and non-diagnosable spaces of dimensional errors, Description of uncompensable and compensable spaces of dimensional errors, System-level control strategies for on-line reduction of dimensional errors, Quantitative evaluation of different control strategies for reduction of dimensional errors, Design of multistage manufacturing systems for optimal control of dimensional errors, Organizers are Dr. Dragan Djurdjanovic, Department of Mechanical Engineering, University of Michigan, 2350 Hayward Street, Ann Arbor, MI 48109-2125, Tel: (734) 763-9975, Fax: (734) 936 0363, Email: ddjurdja@umich.edu, and Dr. Wayne Cai, General Motors, Tel: 586-986-1478, E-mail: wayne.cai@gm.com.

Nanotechnology (Technical Committee Chair: Ajay Malshe)

Nano and Micro Materials and Manufacturing Processes

Upcoming IMECE 2004 (November 14-19, 2004, Anaheim, CA)

▼ *Larry Yao, 2004 Program Committee Chair*

The Manufacturing Engineering Division will sponsor 32 sessions at the 2004 International Mechanical Engineering Congress and Exposition (November 14-19, 2004, Anaheim, CA), including 10 sessions co-sponsored with the Applied Mechanics Division (AMD) and the Dynamic Systems and Control Division (DSC).

Approximately 120 papers will be presented in either paper or poster sessions. To highlight the latest trends in manufacturing research, four MED-wide sessions (including an expert panel session) on Emerging Technologies in Manufacturing will be featured. Other MED activities include two student design competition sessions and an additional expert panel session on Reliability of Manufacturing Systems. For more detailed information, please contact the Program Chair, Prof. Y. Lawrence Yao (yly1@columbia.edu, 212-854-2887) or the Program Co-chair, Prof. Shivakumar Raman (raman@ou.edu, 405-325-3721). ▼

Time	Sunday, November 14	Monday, November 15	Tuesday, November 16	Wednesday, November 17	Time
7 am					7 am
8 am		Comp. Geometry in Design & Mfg. (2/4)	MED Student Design Competition (1/2); Forming (MED/AMD) (1/2); High Speed Machining (AMD/MED) (4/4)	Advances in Non-traditional Mfg (1/3); Surface Quality – Modeling, Analysis Meas. (1/2)	8 am
9 am					9 am
10 am		MED Poster Session	MED Student Design Competition (2/2); Forming (MED/AMD) (2/2); Comp. Geometry in Design & Mfg. (4/4)	Advances in Non-traditional Mfg (2/3); Surface Quality – Modeling, Analysis Meas. (2/2)	10 am
11 am	Comp. Geometry in Design & Mfg. (1/4)				11 am
12 pm		MED General Membership Mtg.	Emerging Technologies in Mfg Panel; Control in Mfg (DSC/MED) (3/4)	Advances in Non-traditional Mfg (3/3); Reliability of Mfg Systems Panel	12 pm
1 pm					1 pm
2 pm		Process Dynamics Effect on Surfaces (2/3)			2 pm
3 pm			Emerging Technologies in Mfg (1/3); High Speed Machining (MED/AMD) (1/4)	Process Dynamics Effect on Surfaces (3/3); Advanced Condition Monitoring & Maint. Tech. (1/2)	3 pm
4 pm		Comp. Geometry in Design & Mfg. (3/4); Config. Design & Mgmt for Mfg Equipment (1/1)			4 pm
5 pm			Emerging Technologies in Mfg (2/3); High Speed Machining (MED/AMD) (2/4); Environ. Issues in Product Life Cycle (1/2)	Control in Mfg (MED/DSC) (1/4); Advanced Condition Monitoring & Maint. Tech. (2/2)	5 pm
6 pm	Advances in Material Joining Technology (1/1); Process Dynamics Effect on Surfaces (1/3)	MED Member Mtg?	Emerging Tech in Mfg (3/3); Control in Mfg (DSC/MED) (4/4); High Speed Machining (MED/AMD) (3/4); Environ. Issues in Product Life Cycle (2/2)	Control in Mfg (MED/DSC) (2/4)	6 pm
7 pm					7 pm
8 pm		MED Dinner			8 pm
9 pm					9 pm

COMMITTEES 2004–2005

Executive Committee

Chair
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JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING ▼ *Kornel F. Ehmann, Technical Editor, JMSE*

Another exciting year has passed for the Journal during my term as Technical Editor. I am proud to announce that the number of submissions has increased considerably. Currently, there are about 165 papers in the system and we are well on our way to reaching more than 250 submissions for the year 2004. As I write, we have received about 225 submissions and it is only the end of September! This is the second year in a row that the Journal has received more than 200 submissions.

In addition to the increased number of submissions, the Journal has also seen its impact factor rise in the past year. This is excellent news. We have been working hard to make the Journal more attractive to high quality submissions and to decrease the length of time for the review process. Since taking over as the Technical Editor and using the new electronic review system, the length of time for reviews has decreased from about 15 months to about 6 months. The average time from submission to publication is now almost less than one year. Of course, there are still numerous papers that require more time depending on the reviews and on the number of revisions. The increased number of submissions and the reduced review time are helping to improve the impact factor for the Journal as authors and subscribers consider the Journal an excellent place for publication and for reference. I encourage all reviewers of JMSE to continue the good work. Your assistance with expediting the review process is instrumental in the success of the Journal.

The Associate Editors of JMSE deserve much of the thanks for the improvements in the past year. Their diligence, persistence, and hard work are the main reasons for the Journal's improvements. JMSE has 17 Associate Editors. On behalf of everyone, I would like to thank them for all their hard work.

At this time, the February, May and August 2004 issues have been published. The February issue has 23 papers for a total of 210 pages. The May issue has 19 papers and 5 technical briefs, for a total of 195 pages. The August issue has 26 papers and 3 technical briefs, for a total of 222 pages. The total JMSE page allocation is 900 pages. There are 68 papers and 8 technical briefs in the three issues, which is a total of 639 pages.

A special issue on "Micro/Meso-scale Manufacturing" has been organized for the November 2004 issue of JMSE. The Guest Editors were Professor Kuniaki Dohda of Gifu University in Japan, Professor Jun Ni of the University of Michigan, and Professor Nico de Rooij of the University of Neuchâtel in Switzerland. All of the special issue papers were peer reviewed following the same stringent standards as applied to regular papers submitted to the Journal. I would like to thank the Guest Editors for organizing a great special issue.

Overall, JMSE is doing well. I am pleased to see an increase in the number of submissions and an increase in the impact factor. On behalf of the Editorial Board, I would like to thank everyone for their continued support of the Journal and I would like to encourage everyone to keep up the good work! ▼