

Innovation

2012

ICMTE

International Conference of
Manufacturing Technology Engineers

18(Thu)~19(Fri) October 2012
Millennium Seoul Hilton Hotel

www.icmte.org

mke 지식경제부
Ministry of Knowledge Economy

KOFST 한국과학기술단체총연합회
Korea Federation of Science and Technology Societies

KEM-CTI
Korea Electronics Materials & Components Technology Institute

KITECH
한국첨단기술연구원
Korea Institute of Technology Evaluation and Planning

KIMM 한국기계연구원
Korea Institute of Machinery & Materials

KOMMA 한국광학기계산업협회
Korea Machinery for Manufacturing Association

KOTIC 한국공구공업협회조합
Korea Tool Industry Association

SEMTEK 서울테크파크
Seoul Tech Park

KODMIC 한국금형공업협회조합
Korea Die Casting Industry Association

KOPTI 한국공작기계를
Korea Precision Tool Industry Association

KROSA 한국로봇산업진흥원
Korea Robot Industry Promotion Agency

NTRA 나노융합산업연구조합
Nano Technology Research Association

Manufacturing

SEOUL

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Prof. Youngho Seo, Kangwon Nat. Univ.

Prof. Moongu Lee, Ajou Univ.

Prof. Leeku Kwac, Jeonju Univ.

Welcome Message

Korean Society of Manufacturing Technology Engineers

It is my great pleasure to welcome you to International Conference of Manufacturing Technology Engineers 2012 in Seoul.

The main focus of this conference is on “The Innovation of Manufacturing Technology” “The Survival Strategy for All Manufacturing Industries”. We expect a lot of innovative papers to be presented and dynamics of Korean industries and academics in manufacturing technology to be shown in this conference. Besides, we anticipate that this event would be a meeting point of all manufacturing engineers seeking for the technology innovation from leading global academics and companies.

Historically, manufacturing has created values for humankind. Without manufacturing technology development, it could be impossible for us to have cellphones, smart TVs, automobiles, and so on. With the help of the manufacturing technology, we could enjoy a comfortable and happy life. It is not due to the science, But it's due to the manufacturing technology. So we should have pride in manufacturing technology.

Economy is an issue these days, and every nation is facing with economic problems. Job creation is believed as the most important solution to them. Traditionally, manufacturing has generated not only values, but also a lot of jobs for the mankind. I think this principle is still valid. Also, manufacturing will create various jobs for us in the future, too. However, we need clever ideas and strategies to create good jobs from manufacturing. In this respect, I think the meeting like this conference is definitely a good chance to put together everybody's wisdom.

The contribution and cooperation of the organizing, program and scientific committees, keynote and invited speakers, authors, session chairpersons as well as supporting organizations and staffs are most gratefully acknowledged. Special thanks go to the Global New Technology Experts Colloquium speakers for delivering a wonderful presentation and the Industrial Exhibition participants for showing their brand new products.

Once again I would like to extend my warmest welcome to all the delegates.

I wish all of you would have a valuable, enjoyable time. For overseas delegates in particular, I hope you have a chance to share the spirit of Korea during your stay here in this wonderful season. Thank you.

Prof. Yang, Min Yang
Conference Chairman

II Venue



◆ From Incheon Airport to the Hotel

* Journey Time : About 60 minutes

→ KAL Limousine Bus

- Bus Fare : Approx. KW15,000 (available at 20-minute intervals)
- Where to Board : Incheon International Airport KAL Limousine Bus Stop (4B or 11A)
- Where to Buy a Ticket : KAL Limousine Bus Stop, You can check the bus schedule at the front desk of Millennium Seoul Hilton.

→ Chauffeured Luxury Sendan

- One-way from airport to hotel : KW140,000
- One-way from hotel to airport : KW130,000

→ Taxi Fare

- Regular Taxi : Approx. KW60,000 (Toll charges are extra)
- Deluxe Taxi : Approx. KW90,000 (Toll charges are extra)

* The journey time and tax fare may be subject to traffic conditions.

II Subway

→ Incheon International Airport Railroad (AREX) / Seoul Station Line 1

Disembark from the AREX train at Seoul Station. Walk in the direction of Galleria Department Store. Take the escalator located in front of Galleria Department Store headed down toward the subway station. Use Exit No. 8 at Seoul Station on Subway Line 1. Then go straight ahead about 100 meters until you will see the Daewoo Foundation Center and SK Green Bldg. Go up along the street between the buildings to the hotel. And use the elevator in the hotel's parking lot to the P5 floor (Grand Ballroom) or ML floor (Main Lobby).

→ Subway Line 4, Hoehyeon Station

Disembark from Exit No. 4 at Hoehyeon Station on Subway Line 4 and walk about 200 meters in the direction of the Daewoo Foundation Center. Then on your left you will see a driveway leading to the hotel's parking lot. Take the elevator in the parking lot to the P5 floor (Grand Ballroom Lower Lobby) or the ML floor (Main Lobby).

II Registration

Registration Information : Millennium Seoul Hilton Hotel (Lobby)

Registration Date : Thursday, October 18, 9:00 (a.m.) ~

Registration Fee

Category	On-Site Registration
Date	After September 1, 2012
Regular	350 USD / KRW 350,000
Student	230 USD / KRW 230,000
Banquet (option to Accompanying person)	55 USD / KRW 55,000

ICMTE 2012 Schedule

Thursday, October 18, 2012 Schedule

Division	Time	Contents
Registration	09:00~	Registration and Information
Opening	09:45~10:00	Opening Ceremony
Special Speech	10:00~10:30	Keynote Speech
Paper presentations and Special Speech	10:30~12:00	Invited Speech/ Oral and poster presentations (Poster 11:00 ~ 12:00)
Lunch	12:00~13:00	Lunch and Break
Paper presentations and Special Speech/ Colloquium	13:00~18:00	Keynote and Invited Speech/ Global companies/ Oral and poster presentations/ (Poster 5:00 ~ 6:00)
Banquet	18:00~18:30	Keynote Speech
	18:30~19:00	Awards
	19:00~20:00	Traditional Music Show

Friday, October 19, 2012 Schedule

Division	Time	Contents
Paper presentations and Special Speech	09:00~12:00	Invited Speech/ Oral presentations
Lunch	12:00~13:00	Lunch and Break
KSMTE Meeting	12:50~1:20	2012 Regular General Meeting
Paper presentations and Special Speech	13:30~16:30	Keynote and Invited Speech/ Oral and poster presentations (Poster 3:00 ~ 4:00)

Special Speech Part 1 : Thursday, October 18

Keynote Speech I (Chairman : Dr. Kangjae Lee, DOOSAN.)

Speech title : “Structuring transparent materials(glasses and crystals) with ultrashort laser pulses for various photonic applications”
Speaker : Prof. Stefan Nolte / Friedrich Schiller University Jena / Germany
Date : Oct 18, 10:00~10:30 a.m.(30 min)
Place : Junior Ballroom “A”

Invited Speech I (Chairman : Dr. Kangjae Lee, DOOSAN.)

Speech title : “Laser-assisted on demand growth of semiconducting nanowires and in-situ optical probing of a-Si crystallization”
Speaker : Dr. Ryu, Sang Gil / UC Berkeley / USA
Date : Oct 18, 10:40~11:10 a.m.(30 min)
Place : Junior Ballroom “A”

Invited Speech II (Chairman : Dr. Kangjae Lee, DOOSAN.)

Speech title : “A nanopipette ball probe for dimensional measurement of micro-structures”
Speaker : Prof. Wei Gao / Tohoku University / Japan
Date : Oct 18, 11:10~11:40 a.m.(30 min)
Place : Junior Ballroom “A”

Keynote Speech II (Chairman : Dr. Hyoungjoon Kim, KIMM)

Speech title : “Wafer Level Packaging: Technology Enabler(Topic includes Fan-out WLP)”
Speaker : Dr. Navas Khan / Freescale / Singapore
Date : Oct 18, 1:00~1:30 p.m.(30 min)
Place : Junior Ballroom “A”

Invited Speech III (Chairman : Prof. Hyung Wook Park, UNIST)

Speech title : “Effects of Microstructure on Ultraprecision Machining and Grinding”
Speaker : Prof. Steven Y. Liang / Georgia Institute of Technology / USA
Date : Oct 18, 1:40~2:10 p.m.(30 min)
Place : Junior Ballroom “A”

Invited Speech IV (Chairman : Prof. Soohong Lee, Yonsei Univ)

Speech title : “Boundary Element applications for muffler design and noise characterization”
Speaker : Prof. Benjamin Soenarko / Maranatha Christian University / Indonesia
Date : Oct 18, 1:40~2:10 p.m.(30 min)
Place : Junior Ballroom “B”



Keynote Speech III (Chairman : Prof. Sunghyun Han, Kyungnam NU)

Speech title : “Cognitive Developmental Robotics towards future symbiotic society”

Speaker : Prof. Minoru Asada / Osaka University / Japan

Date : Oct 18, 4:30~5:00 p.m.(30 min)

Place : Junior Ballroom “A”

Keynote Speech IV (Chairman : Dr. Kangjae Lee, DOOSAN.)

Speech title : “Global Sustainable Manufacturing”

Speaker : Prof. Jun Ni / University of Michigan / USA

Date : Oct 18, 6:00~6:30 p.m.(30 min)

Place : Grand Ballroom

Special Speech Part 2 : Friday, October 19

Invited Speech I (Chairman : Dr. Seungkook Ro, KIMM.)

Speech title : “Virtual Reality-Based Lathe Operation Training and its Brain Function Assessment”

Speaker : Prof. Keiichi Watanuki / Saitama University / Japan

Date : Oct 19, 9:00~9:30 a.m.(30 min)

Place : Junior Ballroom “A”

Invited Speech II (Chairman : Dr. Seungkook Ro, KIMM.)

Speech title : “Development of spindle with water hydrostatic bearings for ultra precision machine tools”

Speaker : Prof. Yohichi Nakao / Kanagawa University / Japan

Date : Oct 19, 9:30~10:00 a.m.(30 min)

Place : Junior Ballroom “A”

Invited Speech III (Chairman : Dr. Seil Park, KRISS.)

Speech title : “Laser-processing of transparent solid materials for advanced photonic device applications”

Speaker : Prof. Hong-Bo Sun / Jilin University / China

Date : Oct 19, 9:00~9:30 a.m.(30 min)

Place : Junior Ballroom “B”



Invited Speech IV (Chairman : Dr. Seil Park, KRISS.)

Speech title : “Ultraprecision practical long distance measurement using frequency combs”
Speaker : Dr. Kaoru Minoshima / AIST / Japan
Date : Oct 19, 9:30~10:00 a.m.(30 min)
Place : Junior Ballroom “B”

Invited Speech V (Chairman : Prof. Chulmin Joo, Yonsei Univ)

Speech title : “Large volume production of plastic parts with micro-features”
Speaker : Prof. Yee-Cheong Lam / Nanyang Technological University / Singapore
Date : Oct 19, 10:30~11:00 a.m.(30 min)
Place : Junior Ballroom “C”

Invited Speech VI (Chairman : Prof. Chulmin Joo, Yonsei Univ)

Speech title : “A feasibility study of silicon wafer edge treatment by ultrasonic-assisted fixed-abrasive CMP(UF-CMP)”
Speaker : Prof. Wu Yongbo / Akita Prefectural University / Japan
Date : Oct 19, 11:00~11:30 a.m.(30 min)
Place : Junior Ballroom “C”

Keynote Speech V (Chairman : Dr. Hyejin Lee, KITECH.)

Speech title : “Mass Fabrication of 3D Micro/Nano Dual-scale Structures and application”
Speaker : Prof. Haixia Zhang / Peking University / China
Date : Oct 19, 1:30~2:00 p.m.(30 min)
Place : Junior Ballroom “A”

Invited Speech VII (Chairman : Prof. Keun Park, Seoultech)

Speech title : “Applicability of local plastic deformation process as surface modification methodology for tribological interface”
Speaker : Prof. Hatsuhiko Usami / Meijo University / Japan
Date : Oct 19, 2:10~2:40 p.m.(30 min)
Place : Junior Ballroom “B”

Program at a Glance

Thursday, October 18, 2012

Time	Session I	Session II	Session III	
	Contents			
09:00-09:45	Registration (Lobby)			
09:45-10:00	Opening Ceremony (Junior Ballroom "A")			
10:00-10:30	Keynote Speech (Junior Ballroom "A") Dr. Stefan Nolte			
10:30-12:00	Invited Speech Dr. Ryu, Sang Gil (10:40-11:10) Dr. Wei Gao (11:10-11:40)	Special Session: Robotics I 10:40-12:00	Special Session: Ultra large scale multi-tasking machine tools 10:40-12:00	
11:00-12:00	Poster Presentations 1, Special Session: Development of multi-layered Composite Packaging process and Equipment 2, Design & CAE 3, Materials and Processing 4, Net Shape Manufacturing 5, IT/BT Fusion			
12:00-1:00	Lunch and Break			
1:00-1:30	Keynote Speech (Junior Ballroom "A") Dr. Navas Khan		Colloquium	
1:30-2:00	Invited Speech Dr. Steven Y. Liang (1:40-2:10) Ultraprecision Nano Machining and Tribology 1. 2:10-4:00	Invited Speech Dr. Benjamin Soenarko (1:40-2:10) Design & CAE 1. 2:10-3:25 Special Session: Development of multi-layered Composite Packaging process and Equipment 1. 3:40-4:25	1:00-1:30	1, Delcam
2:00-2:30			1:30-2:00	2, Heidenhain
2:30-3:00			2:00-2:30	3, Hwacheon
3:00-3:30			2:30-3:00	4, Objet
3:30-4:00			3:00-3:30	5, Parker Korea
4:00-4:30			3:30-4:00	6, Renishaw
4:30-5:00	Keynote Speech (Junior Ballroom "A") Dr. Minoru Asada		4:00-4:30	7, Sandvik Korea
			4:30-5:00	8, Boschrexroth
5:00-6:00	Poster Presentations 1, Special Session: Robotics 2, Robot & Automation 3, Nano/Micro system 4, Special Session: Ultra large scale multi-tasking machine tools 5, Advanced Machine Tools			
6:00-6:30	Keynote Speech (Grand Ballroom) Dr. Jun Ni			
6:30-7:00	Awards (Grand Ballroom)			
7:00-8:00	Traditional Music Show (Grand Ballroom)			

Program at a Glance

Friday, October 19, 2012

Time	Session I	Session II	Session III
	Contents		
09:00-12:00	Invited Speech Dr. Keiichi Watanuki (9:00-9:30) Dr. Yohichi Nakao (9:30-10:00) Special Session: Complex machining system for Eco/Bio industries 1. 10:10-11:10 Special Session: Nano-precision based hybrid machining system 1 1:10-12:10	Invited Speech Dr. Hong-Bo Sun 9:00-9:30 Dr. Kaoru Minoshima 9:30-10:00 Special Session: Laser Applications 10:00-11:00 Special Session: Laser micro-machining and system technology 11:10-12:10	Special Session: Nano/Micro system 9:00-12:00 Invited Speech Dr. Yee-Cheong Lam 10:30-11:00 Dr. Wu Yongbo 11:00-11:30
	12:00-1:00	Lunch and Break	
12:50-1:20	2012 Regular General Meeting		
1:30-2:00	Keynote Speech (Junior Ballroom "A") Dr. Haixia Zhang		
2:00-4:30	Special Session: IT/BT Fusion 1. 2:10-3:10 Special Session: IT-BT Convergence System 2. 3:20-4:20	Invited Speech Dr. Hatsuhiro Usami (2:10-2:40) Special Session: Moulding & Tooling 2:40-4:20	Special Session: Nano/Micro system 1. 2:00-4:25
3:00-4:00	Poster Presentations		
	1. Special Session: Complex machining system for Eco/Bio industries 2. Special Session: Nano-precision based hybrid machining system 3. Special Session: Moulding & Tooling 4. Tool & Die 5. Applied Optical Energy 6. Etc		

Place

Place(floor)	
Registration	Reception(LL or P5)
Session I	Junior Ballroom "A"(LL or P5)
Session II	Junior Ballroom "B"(LL or P5)
Session III	Junior Ballroom "C"(LL or P5)
Colloquium	Junior Ballroom "C"(LL or P5)
Banquet	Grand Ballroom(LL or P5)
Exhibition	Lobby(LL or P5)
Poster session	Lobby(LL or P5)
foyer	Rialto(LL or P5)

Thursday, October 18

Session I

Keynote Speech I (Chairman : Dr. Kangjae Lee, DOOSAN.)

10:00~10:30 "Structuring transparent materials(glasses and crystals) with ultrashort laser pulses for various photonic applications"

Prof. Stefan Nolte(Friedrich Schiller University Jena, Germany)

Invited Speech I (Chairman : Dr. Kangjae Lee, DOOSAN.)

10:40~11:10 Laser-assisted on demand growth of semiconducting nanowires and in-situ optical probing of a-Si crystallization

Dr. Ryu, Sang Gil(UC Berkeley, USA)

Invited Speech II (Chairman : Dr. Kangjae Lee, DOOSAN.)

11:10~11:40 A nanopipette ball probe for dimensional measurement of micro-structures

Prof. Wei Gao(Tohoku University, Japan)

Keynote Speech II (Chairman : Dr. Hyoungjoon Kim, KIMM)

1:00~1:30 "Wafer Level Packaging: Technology Enabler(Topic includes Fan-out WLP)"

Dr. Navas Khan(Freescale, Singapore)

Invited Speech III (Chairman : Prof. Hyung Wook Park, UNIST)

1:40~2:10 Effects of Microstructure on Ultraprecision Machining and Grinding

Prof. Steven Y. Liang(Georgia Institute of Technology, USA)

Junior A (Chairman : Prof. Hyung Wook Park, UNIST)

Ultraprecision Nano Machining and Tribology

2:10~2:30 Exposure process equipment connection study of Cell method for TSP process

A. H. Lee, Y. K. Ji, W. Y. Lee(KUTE)

2:30~2:50 Fabrication of a nano-metallic plasmonic lens with complex geometry embedded in optical material

H. E. Joe, N. C. Park, B. K. Min(Yonsei Univ)

2:50~3:10 Effects of ultrasonic vibration assisted laser drilling on various metals

W. J. Kim, S. H. Lee, M. S. Hong, M. G. Lee, Y. H. Jeon(Ajou Univ),
S. H. Cho(KIMM)

3:10~3:30 Hybrid Approach to Chatter Stability for Optimum Machining Technology and System

K. J. Lee, J. S. Song, C. H. Lee, T. W. Gim, J. Y. Ha(Doosan Infracore)

3:30~3:50 Experimental Analysis on Micro-Grinding Process Using Electrohydrodynamic Spray Lubrication(ESL)

D. H. Kim, P. H. Lee, S. W. Lee(Sungkyunkwan Univ)

Keynote Speech III (Chairman : Prof. Sunghyun Han, Kyungnam NU)

4:30~5:00 "Cognitive Developmental Robotics towards future symbiotic society"

Prof. Minoru Asada(Osaka University, Japan)

Session II

Junior B

(Chairman : Prof. Sunghyun Han, Kyungnam NU)

Special Session: Robotics I

- 10:40~11:00 A Stable Control of Intelligent for Factory Automation Mobile Robot
S. W. Jung, K. W. Sung, S. H. Han(Kyungnam Univ), W. J. Hwang(Gyeongnam TP),
Nguyen Huu Cong(Michelin Viet Co), I. M. Park(INTEM, Co)
- 11:00~11:20 A Study on Design of Robot Hand with Three Fingers
Y. K. Jo(Deakwang Co.,Ltd), B. K. Shim, S. H. Han(Kyungnam Univ),
J. D. Won(Yongchang Tools Co), Le Xuan Thu(Panasonic Elec Co)
- 11:20~11:40 A Study on Stable Walking Control of Biped Robot
K. W. Sung, S. W. Jung, S. H. Han(Kyungnam Univ), W. J. Hwang(Gyeongnam TP),
Y. K. Jo(Deakwang Co.,Ltd,), L. X. Thu(Panasonic Elec Co)
- 11:40~12:00 A Study on the Technology of Obstacle Avoidance for Two Wheel Driving Robot
B. K. Shim, S. H. Han(Kyungnam Univ), J. D. Won(Yongchang Tools Co),
N. H. Cong(Michelin Co), I. M. Park(INTEM Co.,Ltd)

Invited Speech IV

(Chairman : Prof. Soohong Lee, Yonsei Univ)

- 1:40~2:10 Boundary Element applications for muffler design and noise characterization
Prof. Benjamin Soenarko(Maranatha Christian University, Indonesia)

Junior B

(Chairman : Prof. Soohong Lee, Yonsei Univ)

Design & CAE

- 2:10~2:25 Algorithm for knowledge based Casting Design Automation,
H. G. Lee, H. T. Hwang, S. H. Lee(Yonsei Univ)
- 2:25~2:40 Advanced NDE Techniques for Evaluating Composites
K. H. Im, J. H. Jang, C. G. Back, O. S. Jeong, D. H. Lee, Y. H. Kim,
C. S. Oh, J. M. Kim, D. Y. Hwang, Y. D. Woo(Woosuk Univ), David K. Hsu(CNE)
- 2:40~2:55 Optimization of Roll Forming Process Using The Integration Between
Genetic Algorithm and Hill Climbing With Neural Network
H. S. Park, Ta Ngoc Thien Binh(Ulsan Univ)
- 2:55~3:10 The pressure drop of a flat plate under various conditions of surface roughness
G. H. Gim, S. M. Chang, S. Y. Lee(Kunsan Univ)
- 3:10~3:25 Size Effects of the Initial Surface Flaws on the Strength of a Chemically
Strengthened Soda Lime Glass
D. H. Kim, S. M. Lee, H. J. Kim(KICET)

Junior B

(Chairman : Dr. Hyoungjoon Kim, KIMM)

Special Session: Development of multi-layered Composite Packaging process and Equipment

- 3:40~3:55 A Study on TSV(Through-Silicon-Via) depth measurement using white-light
scanning interferometry
T.Y. Jo, Y.M. Hwang, S.R. Kim(SNU)
- 3:55~4:10 Evaluation of Bonding Head Design and Bonding Process for Fan-out
Wafer Level Packages(FOWLPs)
H. J. Kim, J. H. Lee, C. W. Lee, J. Y. Song(KIMM)
- 4:10~4:25 Embedded IC Process in the Silicon Substrate
J. M. Yook, J. C. Kim, J. C. Park(keti)

Session III

Junior C

(Chairman : Prof. Younghyu Choi, Changwon NU)

Special Session: Ultra large scale multi-tasking machine tools

10:40~11:00	Structural Optimization of Crossrail Rib for Huge Vertical Lathe M. G. Lee, K. H. Song, D. Y. Lee(KITECH)
11:00~11:20	Multi-objective structural optimization of a pin turning device(PTD) by using hybrid optimization algorithm(HOA) S. H. Jang(Changwon NU)
11:20~11:40	Design and Evaluation of Large Hydrostatic Rotary Table J. S. Oh, J. Y. Shim, C. H. Park(KIMM)
11:40~12:00	Lubrication Analysis of a Hydrostatic Bearing for a Crankshaft Pin Turner Y. H. Ha, D. W. Lee, M. A. Seo, S. M. Lee(Pusan NU), H. S. An(HNK MACHINE TOOLS CO)

Junior C

(Chairman : Prof. Eungki Lee, kongju Univ.)

Global Expert New Technology Colloquium

Delcam 1:00~1:30	The revolution of High efficiency Manufacturing Technology, -Vortex & Machine DNA Jeyeon Oh ph. D(Technical Research Center)
Heidenhain 1:30~2:00	Volumetric Accuracy in 5-Axis Milling Bruce Lee(managing director)
Hwacheon 2:00~2:30	A New technology of HWACHEON -The future Machine tool technology for convergent manufacturing Dae Yu Park(System Software R&D Team Manager)
Objet 2:30~3:00	Benefits of Bringing 3D Printer in-house, Daniel Thomsen(Regional Sales Director, Objet AP Ltd)
Parker Korea 3:00~3:30	New Two pressure control valve Jong Hyeon Lee(Industrial hydraulic engineer sales)
Renishaw 3:30~4:00	Transform your manufacturing Mr. James Hartley(Machine Tool Probe Technical Manager)
Sandvik korea 4:00~4:30	High Pressure Coolant, Productivity Booster in Heat Resistant Super Alloy Machining Inho Heo(Product engineer)
Boschrexroth 4:30~5:00	New Paradigm in Manufacturing Technology Jaeil Kim(Division Manager. Factory automation)

Grand Ballroom

Keynote Speech IV

(Chairman : Dr. Kangjae Lee, DOOSAN.)

6:00~6:30	"Global Sustainable Manufacturing" Prof. Jun Ni(University of Michigan, USA)
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Friday, October 19

Session I

Invited Speech I (Chairman : Dr. Seungkook Ro, KIMM.)

9:00~9:30 Virtual Reality-Based Lathe Operation Training and its Brain Function Assessment

Prof. Keiichi Watanuki(Saitama University, Japan)

Invited Speech II (Chairman : Dr. Seungkook Ro, KIMM.)

9:30~10:00 Development of spindle with water hydrostatic bearings for ultra precision machine tools

Prof. Yohichi Nakao(Kanagawa University, Japan)

Junior A (Chairman : Dr. Seungkook Ro, KIMM)

Special Session: Complex machining system for Eco/Bio industries

10:10~10:25 Design optimization a VCM dynamic focusing unit for laser scanning system
C. W. Lee, Y. H. Jeon, M. G. Lee, S. H. Lee(Ajou Univ),
J. K. Park(KIMM)

10:25~10:40 Force measurement for needle insertion in eye surgery
K. H. Kim, Y.J. Kim¹, B. S. Kim, S. K. Ro, S. C. Lee, J. K. Park
(KIMM)

10:40~10:55 Investigation of the lubrication characteristics of an artificial hip joint using a CFD
S. Y. Lee, P. K. Kim, J. W. Seok(Chung-Ang Univ), J. K. Park(KIMM)

10:55~11:10 Development of multifunctional machining center for laser polishing and surface texturing
Y. P. Kim, S. P. Na, D. S. Shin, J. H. Lee(Chung-Ang Univ)

Junior A (Chairman : Dr. Seungkook Ro, KIMM)

Special Session: Nano-precision based hybrid machining system

11:10~11:25 Development of Ultra-precision Grinding and Hard Turning System for Hard Materials
Y .P. Kim, I. Y. Jang, D. M. Im(Hwacheon CO), B. S. Kim(KIMM),
H. W. Park(UNIST)

11:25~11:40 Design of an magnetically preloaded air bearing stage for 5DOF motion error compensation
S. K. Ro, B. G. Lee, G. H. Khim(KIMM), J. K. Park(KAU)

11:40~11:55 A study on the effects of ultrasonic vibration in laser machining of polymer materials
H. S. Lee, J. H. Park, M. Y. Yang(KAIST), J. K. Park, S. H. Cho(KIMM)

11:55~12:10 High Precision Femtosecond laser Machining based on Ultrasonic Hybrid System
J. W. Yoon, J. K. Park, S. H. Cho(UST)

Keynote Speech V

(Chairman : Dr. Hyejin Lee, KITECH.)

1:30~2:00

"Mass Fabrication of 3D Micro/Nano Dual-scale Structures and application"

Prof. Haixia Zhang(Peking University, China)

Junior A

(Chairman : Dr. Hyejin Lee, KITECH)

Special Session: IT-BT(IT/BT Fusion)

2:10~2:25

Bi-axial fracture strength characteristic of an ultra-thin chip

E. B. Jeon, H. S. Kim(Hanyang Univ), J. H. Song, H. J. Lee(KITECH)

2:25~2:40

Experimental optimization research of the solder paste bumping process

Y. Lee, D. G. Kwag, J. H. Park, J. H. Song, H. J. Lee, N. K. Lee, S. O. Choi(KITECH), J. B. Kim(SNUT)

2:40~2:55

A Study on the Solder Printing System for Wafer Level Micro-Bump

D. G. Kwag, J. H. Park, Y. Lee, H. J. Lee, N. K. Lee, J. H. Song, S. O. Choi(KITECH)

2:55~3:10

Numerical simulation of Multi-stage Cold Forging Process for the Micro Screw in Storage Devices

J. H. Song, Y. Lee, H. J. Lee, J. H. Park, N. K. Lee(KITECH)

Junior A

(Chairman : Dr. Donggi, Kwag, KITECH)

Special Session: IT-BT Convergence System

3:20~3:35

Simulation for thickness optimization of below-knee prosthesis socket

A. R. Han, H. J. Lee, J. H. Park, D. G. Kwag(KITECH)

3:35~3:50

Dynamic Simulation Method for the Prosthetic Foot

J. U. Hwang, J. H. Hwang, J. S. Bae, J. H. Lee(KAT), J. H. Park, D. G. Kwag(KITECH)

3:50~4:05

The low cost handfull atmospheric pressure micro plasma-jet system for hydrophilic surface treatment

J. H. Jeon, D. C. Han, G. Y. Kim(AMED Inc), T. G. Park, K. I. Kim(SNU), S. S. Yang(Ajou Univ)

4:05~4:20

Development of the versatily adjustable and knee foldable wheelchair for court sports

J. B. Yi(HanSeo Univ)



Session II

Invited Speech III (Chairman : Dr. Seil Park, KRISS.)

9:00~9:30 Laser-processing of transparent solid materials for advanced photonic device applications

Prof. Hong-Bo Sun(Jilin University, China)

Invited Speech IV (Chairman : Dr. Seil Park, KRISS.)

9:30~10:00 Ultraprecision practical long distance measurement using frequency combs

Dr. Kaoru Minoshima(AIST, Japan)

Junior B (Chairman : Dr. Seil Park, KRISS)

Special Session: Laser Applications

10:00~10:15 Precision Dimensional Metrology using a Femtosecond Pulse Laser for 3D Semiconductor Packaging Process

J. H. Jin, J. J. Park, S. H. Lee, J. W. Kim, J. A. Kim(KRISS)

10:15~10:30 Review of lasers in medicine

Dr. Hong Chu(Laseroptek Co., Ltd)

10:30~10:45 Effect of laser preheating on ultrasonic peening of Steel

Y. H. Jeon, H. H. Yeom, M. G. Lee(Ajou Univ),
K. S. Kim(Fusion ENG), D. H. Kim, C. M. Lee(ChangwonNU)

10:45~11:00 High-Resolution and Low-Cost Ag Photomask Fabrication by Using Laser Direct Patterning Method

J. H. Youn, B. C. Kang, J. H. Park, M. Y. Yang(KAIST)

Junior B (Chairman : Dr. Jung Suh, KIMM)

Special Session: Laser micro-machining and system technology

11:10~11:25 Wide area FPCB routing technology by synchronization of the 2 axis stage and galvanometer scanner

K. H. Kim, J. H. Lee, K. H. Yoon, J. Suh(KIMM)

11:25~11:40 Development of a 20-W hybrid UV DPSSL system

C. S. Jung, W. J. Shin, B. A. Yu, Y. L. Lee, J. W. Kim, Y. C. Noh(GIST)

11:40~11:55 High-speed precise UV laser drilling and vision inspection for Flexible PCB

D. S. Kim, B. d. Choi, K. R. Kim(SungKyunKawn Univ),
H. J. Park(LTS), H. K. Sohn, J. Suh(KIMM)

11:55~12:10 Investigation of laser intensity effects for ablation of polyimide using UV laser

B. S. Shin, J. Y. Oh(Pusan national Univ)

Invited Speech VII (Chairman : Prof. Keun Park, Seoultech)

2:10~2:40 Applicability of local plastic deformation process as surface modification methodology for tribological interface

Prof. Hatsuhiko Usami(Meijo University, Japan)



Junior B

(Chairman : Prof. Keun Park, Seoultech)

Special Session: Moulding & Tooling

2:40~3:00	Determination of thermal contact conductance of an injection mold assembly for the prediction of mold surface temperature K. Y. Lee, K. M. Kim, K. Park(Seoultech)
3:00~3:20	Study on the influence factors of thickness uniformity in the high speed injection molding J. S. Kim(U-Tech Co), I. K. Min(Dankook Univ), S. H. Lee(KITECH)
3:20~3:40	Development of Mg Seat-frame Module with Vacuum High Pressure Die-casting Process M. S. Moon, S. J. Kang, J. H. Oh, J. H. Song, M. H. Yoo(JIMCC)
3:40~4:00	Advanced forming tool technology to improve the formability J. K. Kim, J. W. Yoon(LG Electronics)
4:00~4:20	A Study on the Heat Transfer Characteristics of cooling structure in injection parts Y. B. Ko(KITECH), S. H. Cho(DongYang Mirae Univ)

Session III

Junior C

(Chairman : Prof. WonHyoung Ryu, Yonsei Univ)

Special Session: Nano/Micro system I

- 9:00~9:15 Construction of parallel detection system for bio-molecular interactions on the surface of sub-wavelength nanograting array structures
K. W. Kang, H. K. Kim, Y. G. Cho, E. H. Cho, S. I. Kang(Yonsei Univ)
- 9:15~9:30 Large Area UV Nanoimprinting Process using Nanopatterned Roll Mold
H. C. Yang, Y. M. Park, Y. H. Seo, B. H. Kim(Kangwon NU)
- 9:30~9:45 Optimized Microneedle Structures for Peri-vascular Drug Delivery
K. J. Lee, S. H. Park, W. H. Ryu, E. H. Jang, Y. N. Youn(Yonsei Univ)
- 9:45~10:00 Optimum design of bio-inspired dry-adhesive for the future adhesion system
W. G. Bae, D. G. Kim, D. S. Lee, B. J. Lee, Kim, K. Y. Suh(SNU)
Y. J. Kim(Yonsei Univ)
- 10:00~10:15 Imaging of micro-needle based drug delivery with molecular contrast optical coherence tomography
H. Kim, S. H. Ryu, K. J. Lee, W. H. Ryu, C. M. Joo(Yonsei Univ)

Invited Speech V

(Chairman : Prof. Chulmin Joo, Yonsei Univ)

- 10:30~11:00 Large volume production of plastic parts with micro-features
Prof. Yee-Cheong Lam(Nanyang Technological University, Singapore)

Invited Speech VI

(Chairman : Prof. Chulmin Joo, Yonsei Univ)

- 11:00~11:30 A feasibility study of silicon wafer edge treatment by ultrasonic-assisted fixed-abrasive CMP(UF-CMP)
Prof. Wu Yongbo(Akita Prefectural University, Japan)

Junior C

(Chairman : Prof. Chulmin Joo, Yonsei Univ)

Special Session: Nano/Micro system II

- 11:30~11:45 Fabrication of ENX-loaded microspheres using microfluidic focusing device
H. G. Kim, K. M. Kim, Y. H. Kim, S. H. Lee, G. M. Kim(Kyungpook NU)
- 11:45~12:00 Fabrication of Nanostructure-integrated Microfluidic Devices for BioMEMS Applications
J. K. J. W. Hong, Jennifer H. Shin, I. k. Park(KAIST), D. P. Kim(POSTECH)

Junior C

(Chairman : Prof. Seok-min Kim, CAU)

Special Session: Nano/Micro system III

- 2:00~2:15 Effect of nHAp on Mechanical Strength of Silk Fibroin Nano Scaffolds for Bone Tissue Engineering
H. R. Kim, W. H. Ryu(Yonsei Univ)
- 2:15~2:30 Injection molding of nano-micro surface structures for colors
Y. E. Yoo, D. S. Choi, J. S. Yoon(KIMM), S. W. Woo, J. W. Seo, S. K. Kim(Seoultech)
- 2:30~2:45 Electrostatic MEMS energy harvester utilizing vibration in the vertical direction
B. R. Hwang, J. H. Lim, C. K. Kim(Polytechnic Univ)
- 2:45~3:00 Drop on demand electrohydrodynamic jetting using various pulsed voltage signal
H. Kim, J. W. Chung(Korea Univ)

Junior C

(Chairman : Dr. Yeong-Eun Yoo, KIMM)

Special Session: Nano/Micro system IV

3:10~3:25	Fabrication of glass molded photonic crystal optical filter using vitreous carbon mold J. H. Ju, Y. A. Han, S. M. Kim(Chung-Ang Univ)
3:25~3:40	Monolithic fabrication of self-aligned three dimensional micro optical fiber coupler array using UV imprinting process S. Y. Hwang, E. H. Cho, S. I. Kang(Yonsei Univ)
3:40~3:55	Replication of nano Petri dish for studying cell-nanotopography interaction by injection molding process K. J. Cha, D. S. Kim(POSTECH)
3:55~4:10	Study of driving force of directional transporting of droplets on heterogeneous surface structure using the lattice boltzmann approach J. S. Lee, J. S. Lee(Yonsei Univ)
4:10~4:25	A study on the behavior of bubbles trapped in the in-mold coating process Phuong NguyenThi, A. R. Kwon, Y. E. Yoo, J. S. Yoon(KIMM)

Thursday, October 18,
11:00~12:00(p.m)

Special Session: Development of multi-layered Composite Packaging and Equipment

(Chairman : Dr. Seokkee Hong, Seoul TP)

Design of ion source and column for a prototype ion miller

B. H. Chung, M. J. Park, D. Y. Jang(KEMCTI), M. S. Choi, S. J. Noh(Dankook Univ),
D. U. Kim(Seoultech)

Effect of filler etching on adhesion between metal seed layer and polymer

K. O. Ahn, J. Y. Sun, S. H. Park, Y. H. Kim(Hanyang Univ)

The process optimization of Through molding via(TMV) for eWLP

J. Y. Park, S. H. Park, B. S. Jeon, J. C. Park(KETI)

Warpage Analysis during Compression Molding in Fan-Out Wafer Level Package

S. M. Park, S. J. Park(KNUT), J. H. Park, H. J. Lee(KITECH)

Molding System Design for Fan-Out Wafer Level Package

D. G. Kwag, J. H. Park, H. J. Lee, J. H. Song, N. K. Lee, S. O. Choi(KITECH)

Investigation on Extended laser Beam Profile Uniformity

S. K. Hong, C. W. Ban, S. E. Yang, D. Y. Jang(Seoul TP)

The study on the thermal evaporation source by using Direct Simulation Monte Carlo(DSMC)

S. H. Jun, E. K. Lee(Kongju NU)

Design & CAE

(Chairman : Prof. Seong Keol Kim, Seoultech)

Assessment of Probabilistic Fatigue Crack Propagation Model of AZ31 Alloys under Various Load Ratio Conditions by Using Percentile of Random Variable

S. S. Choi(S. Y. Univ)

Simulations of Plane Strain Compression where Dissimilar blocks are Twinned

T. H. Chung(Joongbu Univ), Manabu Gotoh, Minoru Yamasita(Gifu Univ)

To Perform Ultra-precision Stage Design through using Flexure-hinge Structure

D. K. Park, N. S. Kwak(Grad. Chosun Univ), J. Y. Kim(Chosun Univ)

The Study on Stress Analysis according to the Design Parameter of Cu Pillar in Flip Chip Package

D. G. Kim, B. H. Jeong, S. M. Hong, M. S. Park, S. H. Hwang(STS Semi)

Advanced numerical method for analysis of metal forming process

K. T. Han(Pukyong NU)

Design of remote monitoring system for application to monitoring multiple-tool wear

D. U. Kim, H. J. Kang, S. W. Hwang, D. S. Hong(Changwon Univ)

Support location determination for a glass substrate robot rail frame by using topology optimization

Lin Ran, G. W. Jang(Sejong Univ), S. W. Han(HHI), S. Y. Lee(Gunsan NU)

Design of 5.5MW Drive Train Test Stand for Wind Turbine Gearbox

G. H. Lee, Y. J. Park, J. K. Kim, Y. Y. Nam, H. S. Kim(KIMM)

Dressing Characteristics of Resinoid-bond CBN Wheel to Shapen the Corner Radius

E. P. Baek, H. Y. Maeng(Seoultech)

Study on the mechanical properties of metal pad wire bonding process parameters by finite element method

S. M. Hong, D. G. Kim, M. S. Park, S. H. Lee, S. H. Hwang(STS Semi),
D. J. Lee(Chungnam NU)

Experimental study on the effect of the load and speed variations upon the transmission error of a planetary gear train

J. S. Song, Y. Y. Nam, Y. J. Park(KIMM)

Transmission error analysis for a spur gear set using multi-body dynamics with the gear stiffness module under various speeds

J. S. Song, G. H. Lee, S. J. Cho(KIMM)

Design Parameter Effect on Aerostatic Bearing Table Performance

J. Y. Shim, J. H. Hwang, C. H. Park(KIMM)

A Study of developing the compressed air generation device using discharged water

K. H. Cho, K. B. Yang(Jeju NU)

A Study on Structure of Large-Size Display Transfer Robot with High Rigidity

J. G. Lee(KDM Co.), C. W. Park(KISTI), C. H. Suh(DMI)

Approaches to avoid corruption of CAD models in configuration design method for solid rocket motors

K. S. Lee(Hanbat NU), W. H. Kim, B. E. Lee, D. H. Lee, T. K. Hwang, Y. C. Kim,
S. G. Jang(ADD), B. W. Choi, J. H. Shin(Space Solution),
H. S. Kwon, D. P. Shin(AD Solution), S. H. Kim(SNUST)

CFD Simulation for Electronic Circuits reliability in constrained space

C. W. Park, K. S. Park(KISTI)

The development of Aluminum alloy piston for two-stroke cycle engine by powder forging

C. W. Park(KISTI)

Warpage Simulation of Wafer Level 3D packaging

S. K. Kim, C. M. Jang, J. M. Hwang, M. C. Park(Seoultech)

Analysis of wind turbine gearbox considering non-torque loading

Y. J. Park, G. H. Lee, Y. Y. Nam, J. G. Kim(KIMM)

Quality assurance of the resistance spot-welding using acoustic emission raw signals classification

Z. K. Rhee, C. K. Woo(Incheon Univ)

Nonlinear Finite Element Analysis of a Trough Made from GFRP with Flyash

T. H. Lee, K. W. Jeong(Chungbuk NU)

Materials and Processing (Chairman : Prof. Moonchul Yoon, Bukyong NU)

Burr Characteristics of Micro-Grooving in High Speed Machining

J. Y. Koo, J. S. Kim, P. H. Kim(Pusan NU), I. S. Kang(DMI)

Fabrication of Micro-Grating Structures for X-ray Phase Contrast Imaging System

Y. K. Park, Y. H. Shin, I. S. Kang, H. M. Jeon, C. W. Ahn(KAIST),
H. B. Kim(SEC. Co.), S. W. Lee(KAERI)

Projection ablation for engraving circuit line patterns in an IC substrate

H. K. Sohn(KIMM), H. S. Choe(QMC Co.), J. S. Park(Cheongju Univ)

Flaw Evaluation of Composite-sintered Bushes Using Ultrasonics

K. H. Im, D. H. Lee, Y. H. Kim, C. S. Oh(Woosuk Univ), K. Y. Kim, K. T. Shin(TMC),
To Kang(Sungkyunkwan Univ), H. J. Cho(AIQS)

NDE Characterization on Heat Treated Piston Rods Using Rayleigh waves

K. H. Im, C. H. Song, H. K. Jang, S. H. Lee, J. M. Kim, J. H. Jeong(Woosuk Univ),
H. H. Lee(Taesang Engineering), H. J. Kim(Sungkyunkwan Univ)

Development of In Process Monitoring System and Algorithm for Laser Welding

K. R. Lee, D. H. Kim, H. J. Shin, E. K. Park, C. Y. Hwang, Y. T. Yoo(Chosun Univ)

Indented surface wavelet filtering and its volume

J. Y. Jo, M. C. Yoon(Pukyong NU)

Rockwell hardness modeling with volumetric variable

M. C. Yoon(Pukyong NU)

Estimation of tungsten tip by electrochemical etching

D. C. Lee, H. C. Kim(Inje Univ)

Development of hybrid type precision polishig jig for ceramic ferrule of optical patch code

M. H. Kim(KITECH), H. S. Yoon(Chonnam NU)

An evaluation of machinability and tool life in micro-milling of die/mold materials

P. H. Kim, J. S. Kim, J. Y. Koo(Pusan NU), I. S. Kang(DMI)

The effect of shot peening intensity on high temperature fatigue behavior of an aluminum alloy

S. W. Seo, J. W. Yoon, H. S. Kim(Seoultech)

Magnetic deflection design of e-beam finishing instrument

S. J. Lim, J. Y. Choi(KIMM)

Development of ELID Monitoring System for Electrolytic In-process Dressing(ELID) Grinding Process

T. S. Kwak(GNUST), I. S. Kwak(Chonnam NU)

Development of Ultrasonic Table for ELID Grinding of High Strength Structural Ceramics

T. S. Kwak(GNUST)

Strength and efficiency during lap joining molding of GMT-sheet

J. W. Kim(Gwangju TP), H. S. Kim, T. I. Kim, D. G. Lee, J. K. Sim(Chosun Univ)

Defect Propagation at Boundary Face of Composite Compact Tension Specimen

J. U. Cho(Kongju NU), M. S. Han(Keimyung Univ)

The efficiency enhancement of organic light-emitting diodes fabricated by solution process

G. W. Kim, K. M. Jeon, H. S. Youn, M. Y. Yang(KAIST)



Net Shape Manufacturing (Chairman : Prof. Moonchul Yoon, Bukyong NU)

Near net shape manufacturing technology with blow forming

J. U. Choi(UST), J. H. Yoon, J. T. Yoo, H. S. Lee(KARI)

A study on rubber-assisted microforming process for fabrication of micro-channel arrays on bipolar plates of fuel cell

J. M. Shim, H. S. Kim(Seoultech)

Hot stamping simulation of tubular beam for automobile suspension part

C. H. Suh(DMI), M. K. Park(YNC), Y. S. Kim(Kyungpook NU), J. K. Park(Hwashin),
Y. S. Kim(Hwashin Tech)

IT/BT Fusion (Chairman : Prof. Moonchul Yoon, Bukyong NU)

Electrochemical Sensing of Biofilm using Cyclicvoltammetry

B. J. Hwang, S. H. Lee(KITECH)

Effect of mask design on the deformation characteristics of micro-holes

K. Y. Lee, K. Park(Seoultech), H. J. Lee(KITECH)



Thursday, October 18,
5:00~6:00(p.m)

Special Session: Robotics (Chairman : Prof. Sunghyun Han, Kyungnam NU)

A Study on Robust Control of legged Robot Using Ultrasonic Sensor

J. D. Won(Youngchang Tools Co.), D. Y. Jung(Daeho Technology Korea, Co.),
J. B. Won(Smec Co.), S. P. Cheon(Gyeongnam TP Industrial Co.),
C. J. Jo(Dynamic Motion Technology Co.)

A Study on Real time Implementation of Obstacle Avoidance of Mobile Robot

I. M. Park(INTEM), J. B. Won(Smec Co.), K. S. Choi(GN Robot),
K. S. Kim(Consolidated Maintenance Depot), S. H. Han(Kyungnam Univ)

A Robust Model Reference Adaptive Control of robot System Based on TMS320C3X Chips

W. J. Hwang(GN Robot), H. B. Shin(SGservo Inc), Y. H. Ha, S. P. Cheon
(Gyeongnam TP Industrial Co.), K. S. Kim(Consolidated Maintenance Depot)

A Study on Image Feedback Control of Industrial Articulated Robot

W. S. Lee(Sungsanamdeco Co.), W. J. Hwang(Gyeongnam TP Industrial Co.),
J. D. Won(Youngchang Tools Co.), C. J. Jo(Dynamic Motion Technology Co.),
S. H. Han(Kyungnam Univ)

A Study on Stable Motion Control for Biped Robots Locomotion

C. J. Jo(Dynamic Motion Technology Co.), K. W. Sung(Kyungnam Univ),
W. S. Lee(Sungsanamdeco Co.), H. B. Shin(SGservo Inc), J. B. Won(Smec Co.)

A Study on Stable Walking Control of a Knee-Less Biped robot Based on Passive Walking Mechanisms

Y. H. Ha, S. P. Cheon(Gyeongnam TP Industrial Co.),
S. W. Jung, B. K. Shim(Kyungnam Univ), I. M. Park(INTEM)

A Study on Stable Walking of Humanoid Robot

D. Y. Jung(Daeho Technology Korea),
K. W. Sung, S. W. Jung, S. H. Han(Kyungnam Univ), Y. K. Jo(Deakwang Co.)

A Study on Robust Control of Robotic Joints Based on DSPs

B. K. Shim(Kyungnam Univ), J. B. Won(Smec Co.), Y. K. Jo(Deakwang Co.),
H. B. Shin(SGservo Inc), Y. H. HaGyeongnam Technopark Industrial Co.)

A Feature-Based Visual Servoing Control of Robot System by Utilizing Redundant Feature

W. J. Hwang(Gyeongnam TP Industrial Co.), B. K. Shim(Kyungnam Univ),
D. Y. Jung(Daeho Technology Korea), K. S. Kim(Consolidated Maintenance Depot),
K. S. Choi(GN Robot)

A study on Adaptive Control of Robot Arm Based on Compensator

K. S. Choi(GN Robot), W. S. Lee(Sungsanamdeco Co.), K. S. Kim(Consolidated Maintenance Depot), D. Y. Jung(Daeho Technology Korea), S. H. Han(Kyungnam Univ)

Robot & Automation

(Chairman : Prof. Sunghyun Han, Kyungnam NU)

Performance improvement using assistance converter on HVDC

S. H. Kang, S. G. Lim, S. J. Park(Chonnam Univ)

High resolution isolated multi-level inverter for grid-tie renewable generation system

S. Y. Lee, C. S. Kim, S. J. Park(Chonnam Univ)

High Precision Automatic Voltage Regulator using the Series Transformer

K. Y. Yang, J. G. Hwang, S. J. Park(Chonnam Univ)

A Multi-Level Inverter of SRM for LSEV Drive

S. H. Lee(KLC), S. G. Song(Digital Convergence Research Center),
S. M. Park, S. J. Park(Chonnam Univ)

Low Frequency Multi-Level Switching Strategy Based on Phase-Shift Control Methods

S. H. Lee(KLC), S. G. Song(Digital Convergence Research Center),
S. M. Park, S. J. Park(Chonnam Univ)

A study on New PV Tracking System Including Load Dispersion

S. H. Lee(KLC), S. G. Song(Digital Convergence Research Center),
S. M. Park, S. J. Park(Chonnam Univ)

A flexure-based linear motion stage with parallel actuation mechanisms driven by piezo actuators

K. B. Choi, J. J. Lee, G. H. Kim, H. J. Lim(KIMM)

A Study on Heat treatment Automation using Robot Simulation OLP methodology

K. J. Park, J. D Kim, C. S. Cho, B. S. Kim(DMI), S. R. Song(Ajou Univ)

Vision system algorithm for detection and classification of bicycle at urban road

D. H. Lee, J. H Ahn(Grad. Hanyang Univ)

Dynamic Analysis of Planar Type Robot with Six Joints

B. S. Kim, J. D. Kim, H. J. Choi, K. J. Park(DMI)

Feasibility Verification of Robotic Deburring System using Human Robot Cooperation

S. H. Lee, D. H. Kim, C. J. Li, C. S. Han(Hanyang Univ), M. S. Kang(KIMM)

Special Session: Ultra large scale multi-tasking machine tools

(Chairman : Prof. Younghyu Choi, Changwon NU)

Development and system integration of ultra large scale multi-tasking machine tools

S. H. Jang, Y. H. Choi(Changwon NU), H. S. An(HNK Machine Tool Co.),
J. S. Hong(Namsun Machinery Co.), M. S. Kim(Kiheung Machinery Co.)

Core technology development of multi-tasking machine tools for extra-large crankshafts

H. S. An, Y. J. Cho(HNK Machine Tools CO.), Y. H. Choi(ChangWon Univ),
D. W. LeePusan NU)

The development of Multi-Tasting Vertical Lathe for windmill parts

H. C. Shin, W. S. Park, M. S. Kim(Kiheung Machinery Co.)

Dynamic Structure Analysis for the Large Gantry Type Machine Tool

J. B. Park, E. S. Lee(CBNU)

Advanced Machine Tools (Chairman : Prof. Younghyu Choi, Changwon NU)

Experimental Investigations of LM Roller Bearing Deformation

D. J. Cheng, W. S. Yang, J. H. Park, S. J. Kim(Gyeongsang NU),
G. H. Kim, C. H. Park(KIMM)

Design of Hybrid-Type Laser Processing Machine for Large Area

J. H. Lee, K. H. Yoon, K. H. Kim(KIMM)

Machining characteristic comparison using acoustic emission signals in environmentally conscious turning process

J. H. Kang(KIMM)

Machining characteristic evaluation of eco-friendly reusable drill tool using cutting force signals

J. H. Kang(KIMM)

Command shaping to reduce moving load induced vibration in beam structure

S. W. Kwon, S. W. Hong(Kumoh NIT), Ehsan Maleki(Georgia Institute of Technology)

A study of dynamic characteristics for LM bearings of machine tools

H. Y. Kim, J. K. Jeong, J. J. Won, J. I. Jeong(Kookmin Univ)

A Study on the Thermal Behavior of Grease Lubrication Spindle according to the Cooling Jacket

D.B. Choi(KIMM), S. T. Kim, S. J. Lee, S. I. Jung(Changwon Univ)

Nano/Micro System (Chairman : Prof. Byeonghee Kim, Kangwon NU)

Contact pressure analysis of nanoimprint lithography for roll mold fabrication

H. J. Lim, J. J. Lee, K. B. Choi, G. H. Kim, S. H. Lee(KIMM)

Digital fabrication of aspheric lens arrays through optical maskless lithography using digital micromirror devices

M. S. Seo, H. C. Yang, T. H. Lee, H. R. Kim(Tongmyong Univ)

Effect of a pattern shape on the output characteristics of piezoresistive strain gauge

J. Park, C. K. Kim(Grad. Polytechnic Univ)

Analysis on the functionalized metallic surface: focusing on the oleophilic characteristics

D. G. Kim, W. G. Bae, D. S. Lee, K. Y. Suh(SNU)

Moiré Aligning Technique in Roll System

G. H. Kim, Aleksey-Deson Ten, H. J. Lim, K. B. Choi, J. J. Lee, S. W. Lee(KIMM)

Characteristics of Fabricated Micro Gas Sensor to Volatile Organic Compounds(VOCs)

W. J. Jang, K. B. Park, J. S. Park(KETI), Y. H. Roh(Sungkyunkwan Univ)

Shape-controllable Nanolens Arrays via Direct Transfer of Photo-curable Polymer Droplets for Sub-wavelength Imaging

D. S. Kang, K. Y. Suh(SNU)

positioning control of ultra-precision stage

H. H. Cho, K. W. Jeong(Chung-buk Univ)

Partly Wrinkled Gecko-foot Structures for Switchable Dry Adhesion

J. H. Kim, S. M. Kang, K. Y. Suh(Seoul National Univ)

Capillary grooves fabricated by extrusion method for cooling application

S. H. Moon, K. H. Lee, I. K. You(ETRI), H. M. Lee(DCN co.), C. W. Byun(KETI)



Passive Microfluidic Pump using Sequential Expansion of Hydrogel

W. K. Jang, B. H. Kim, Y. H. Seo(Kangwon NU)

Fabrication of Nanodome Structure using UV-replicated Nanodot Array for Enhanced Fluorescence Substrate

H. Y. Jang, Y. A Han, E. H. Byeon, S. M. Kim(CAU)

Detection of Fluid Sample using Oblique Angle Deposited Ag Nanorod Surface Enhanced Raman Substrate

Y. A Han, S. M. Kim(CAU)

Indented surface wavelet filtering and its volume

J. Y. Jo, M. C. Yoon(Pukyong NU)

Fabrication of micro-lens array by glass molding using vitreous carbon micro-mold

J. H. Ju, J. W. Lee, E. H. Byeon, S. M. Kim(CAU)

Glass Molding of Fresnel Lens Using Vitreous Carbon Mold

Y. K. Kim, J. H. Ju, S. M. Kim(CAU)

Manufacturing of transparent electrode using arranged Ag nanowire mesh patterns with an patterned polymer substrate

G. T. Kim, J. H. Shin, J. Y. Cho, H. Lee(Korea Univ)

Fabrication of the nano scaled PEDOT:PSS pattern using nano imprint lithography

J. H. Choi, G. S. Han, J. H. Shin, Y. D Kim, H. J. Choi, H. Lee(Korea Univ)

**Friday, October 19,
3:00~4:00(p.m)**

Special Session: Complex machining system for Eco/Bio industries

(Chairman : Dr. Kyunghan Kim, KIMM)

Manufacturing cannula using micro five axis machining system

S. C Choi, S.C. Lee, B. S. Kim, S. K. Ro, J. K. Park(KIMM)

Manufacturing smart surface texture using microabrasive air jet machining

S. C Choi, S.C. Lee, B. S. Kim, S. K. Ro, J. K. Park(KIMM)

A study on relationship between pattern size and roll displacement of micro-rolling system

B. Q. Thanh, S. K. Ro, J. K. Park(KIMM)

Advanced Laser Polishing of Mold Metal

D. S. Shin, J. H. Lee, J. H. Baik, Y. P. Kim(KIMM)

Development of a grinding machine for sharpening the needle edge

J. G. Kim, S. K. Ro, S. C. Lee, J. K. Park, S. H. Cho, K. H. Whang(KIMM)

Development of Self-Piercing Rivet with Helical Ribs for Joining Dissimilar Sheet Metals

H. Y. Cho, W. Y. Kim, D. B. Kim, K. W. Kim, W. G. Kang, H. S. Sin, I. H. Lee
(Chungbuk NU), J. K. Park, J. H. Lee, D. S. Shin(KIMM),

B. C. Jeon, N. K. Park(Sunil dyfas), Y. P. Kim(Hwacheon Machne Tool Co.)

A study on comparison of generated patterns by simulation and grinding

J. H. Kim, T. J. Ko(Yeungnam Univ), H. C. Kim, J. K. Park, T. J. Ko(Andong NU)

A study on the grinding characteristics of sapphire using ELID lapping technology

J. H. Hwang, S. M. Lee, S. J. Lee, D. W. Lee(Pusan NU), J. K. Park(KIMM),
Ohmori, H(RIKEN)

Application of Fast Tool Servo on Surface Texturing

Hong lu, S. J. Lee, J. M. Kim, S. H. Kim, D. W. Lee(Pusan NU), J. K. Park(KIMM)

Experimental fabrication process of sapphire surgical knife

J. H. Jeong, W. S. Chung(TechMAC Co.)

Analysis of Pressure Variation for the Dimpled Head Surface of Hip Arthroplasty using ANSYS

H. H. Lee, M. Y. Yang(KAIST), Chaneel Isidore Park(Calgary Univ), J. K. Park(KIMM)

Special Session: Nano-precision based hybrid machining system

(Chairman : Dr. Byung-Sub Kim, KIMM)

Conceptual design of laser cutting module for flank angle of PCD insert

J. H. Jeong, W. S. Chung(TechMAC Co.)

Machining Characteristics of Hybrid Vibration-assisted Femtosecond Laser System for Microholes Drilling of Copper Substrate

J. K. Park, J. W. Yoon, S. H. Cho(KIMM)

Mechanical micro-texturing on electrochemically polished stainless steel surface

J. M. Lee, Y. B. Kim, S. H. Kim, J. W. Park(Chosun Univ)

Micro surface texturing on tungsten carbide surface by AFM-based TNL tool

J. M. Lee, S. H. Kim, B. W. Jeong, J. W. Park(Chosun Univ)

A Study on Numerical Analysis of Chamber Design for Ultra-Precision Machine

D. Y. Kim, C. S. Kim, J. H. Cho, T. B. Seo(Inha Univ), S. K. Ro, J. W. Park(KIMM)

Development of Ultrasonic Assisted ED-Milling Hybrid Machining

M. Y. Kim, Changping Li, T. J. Ko(Yeungnam Univ), J. W. Park(KIMM)

Optimization of the Hard Turning Process using the Taguchi Method

D. M. Kim, H. W. Park(UNIST)

2-Dimensional Position Sensing and In-process Compensation

B. S. Kim, J. K. Park(KIMM), Y. P. Kim(Hwacheon Machine Tool Co.)

Development of ATC for SMA Tool Holder for Micromanufacturing

S. C. Lee, S. K. Ro, J. K. Park(KIMM)

Applications of EDG process for PCD micro tool

J. H. Jeong, W. S. Chung(TechMAC Co.)

Special Session: Moulding & Tooling

(Chairman : Prof. HyukHong Kwon, Daejin Univ.)

An experimental study on the effect of die chamfer shape and V-ring distance on the die roll height in the fine blanking of special part with various corner shapes

J. D. Kim, Y. M. Heo(KITECH)

A study on the relationship of shear process design parameters considering characteristics of carbon tool steel

H. C. Ro, J. S. Song, C. D. Park, K. T. Youn, I. C. Yoon(DMI), G. R. Ryu(Se Chang)

Laser micro machining and electrochemical etching with surface coating

T. P. Kim, M. S. Park(Seoultech)

Mold Opening Stroke according to Injection Speed.

H. S. Jung, J. H. Yoo(Koreatech)

The Research of Production Process for Lock-up-drum with tooth

I. C. Yoon, C. D. Park, G. T. Youn, H. C. Noh(DMI)

Non-cutting laminated motor core technology development of 2 cavity stamping die for concurrent production of stator rotor core using detachable Cam

D. H. Park, J. J. Yun, Y. H. Tak(GHI), Pyung-Ju Hwang(Seungbo Steel Co.)

Development of Metal Carbide Tool Materials by Rapid Sintering

D. K. Kim, S. J. Kang, J. H. Oh, E. S. Kim, S. Y. Oh, H. C. Shin, J. h. Song(JIMCC)

Tool & Die

(Chairman : Prof. HyukHong Kwon, Daejin Univ.)

Investigation of acoustic emission signal characteristics for tool condition monitoring in micro-milling process

I. S. Kang, C. W. Park, H. J. Choi(DMI), J. S. Kim(Pusan NU)

A Study on the Development of Double Injection Mold for the Cyclone Vacuum Cleaner Parts

J. S. Lee(Nambu Univ)

Temperature Control Strategy for Laminated Die System

J. H. Se, J. D. Kim, C. W. Rim, J. W. Han(KIMM), Amir Khajepour, Jan P. Huissoon(Univ. of Waterloo)

Applied Optical Energy

(Chairman : Prof. Sin-Young Lee, Kunsan NU)

Heat Radiation of LED Light using Engineering Plastic

Y. T. Cho(Jeonju Univ)

Optical Design and Characterization of Fresnel Lens for Concentrated Photovoltaic Manufacturing

H. M. Lee, H. G. Lim, K. S. Ahn(KETI), C. S. Cho, J. H. Kang, J. Y. Lee(KAIST),
S. H. Moon(ETRI), C. W. Byeon(DCN, Co.)

Effect of laser heat treatment on fatigue behavior in SCM440H

Y. H. Jeon, B. J. Choi, M. G. Lee(Ajou Univ), I. S. Cho(Sun Moon Univ),
D. H. Kim, C. M. Lee(Changwon NU)

High-repetition-rate, diode-pumped Yb: KYW lasers for precision manufacturing

H. W. Yang, C. Kim, J. W. Kim(KAIST), S. Y. Choi, Fabian Rotermund(Ajou Univ),
G. H. Kim(KERI)**Etc**

(Chairman : Prof. Sin-Young Lee, Kunsan NU)

A Study on Nondestructive evaluation System Apply Ultrasound Infrared Thermography Technique

J. Y. Kim, S. H. Kim, S. H. Choi(Chosun Univ)

A Study on Surface Defect Detection Apply Ultrasound Lock-in Thermography Technique

J. Y. Kim, S. H. Choi, N. S. Kwak, N. R. Jung, S. H. Kim(Chosun Univ)

Architecture of 3D CAD part data simplification system for ship and offshore plant equipment

B. C. Kim(Dong-A Univ), S. J. Kwon, S. H. Han(KAIST),
S. A. Park, D. H. Mun(Kyungpook NU)

Decomposition of energy consumptions in micro-drilling process

H. S. Yoon, J. S. Moon, Minh-Quan Pham, S. H. Ahn(SNU)

The statistical analysis of fatigue of the vehicle engine mounting

J. H. Ahn, D. H. Lee(Grad. Hanyang Univ)

A Study on Aspheric Optical System for LED City Street Lighting

J. Y. Kim, D. H. Hyun, M. J. Noh, G. S. Yoo(Polytechnic Univ)

The Study on Replacement Possibility of LED Lighting Engine for Parking Garage

C. S. Lee, D. H. Hyun, M. J. Noh, G. S. Yoo(Polytechnic Univ)

A study on development of astringency removal system in persimmon

J. P. Lee, I. S. Kim, J. H. Lee, S. M. Jung, Y. S. Kim, R. R. Chand(Mokpo Univ)

An experimental study on torque characteristics of pitch bearing for 3MW wind turbine

J. W. Han, J. S. Nam, Y. J. Park, J. D. Kim(KIMM), S. H. Han(Dong-A Univ)

The Changes in Mechanical Properties by Chromium-Carbide Precipitation on the Weld Heat Affected Zone of Clad Steel

J. W. Park(Grad. NID Fusion Technology), H. J. Choi, S. W. Yoon, C. K. Lee(Seoultech)

Energy Saving Excavator System Using Independent Metering Valve Configuration

K. J. Choi, K. G. Kim(SNU), J. H. Seo, Y. S. Lee, J. D. Kim(KIMM)

Augmented Reality Based Shop Floor Monitoring of Injection Molding

W. P. Hong, H. R. Shin(KITECH)

Machine Capability Index Assessment of Machining Center

W. P. Hong, H. R. Shin(KITECH)

A study on the analysis of the thermal stress and residual stress in process spc1-s laser welding

W. R. Lee(Grad. NID Fusion Technology), C. S. Ko, D. G. Park, J. H. Kim(Seoultech)

A study on the nondestructive evaluation of CFRP using infrared thermography camera

H. G. Kim, H. J. Shin, S. H. Ko, H. W. Kim, Y. J. Cha, L. K. Kwac(Jeonju Univ)

A Study on the Pressure Drop in the Filter of Honeycomb Type for Small Smoke Ventilation System

H. J. Ki, B. H. Kwak(KAPC), S. C. Jang, W. B. Jung, S. W. Kang(Jeong Soo Enc Co.),
C. S. Yi(Gyeongsang NU)



N Seoul Tower



N Seoul Tower was built in 1969 as Korea's first integrated transmission tower beaming television and radio broadcasts across the capital. Since opening to the public in 1980, it has become a much-loved Seoul landmark. The tower's main attractions include multi-colored digital art projected onto the tower at night, a digital observatory, a roof terrace, the HanCook restaurant, the n.Grill restaurant, and the Haneul(Sky) Restroom. N Seoul Tower's mountain surroundings on Namsan(Mt.) have made it a popular place to unwind for locals and tourists alike.

The National Museum of Korea

The six-story building of the National Museum of Korea is ranked as the sixth largest museum in the world. The museum building is constructed so as to withstand violent oscillation in an earthquake. The architectural style harmoniously blends traditional and contemporary styles. It was built to house more than 140,000 national relics and artifacts, and also to serve as a complex cultural facility with a sculpture garden, open plaza and outdoor exhibition area. Also, artificial falls, streams, and green fields have been cultivated to create a beautifully landscaped space for visitors.



Bukchon Hanok Village

Bukchon Hanok Village sits between the two palaces of the Joseon Dynasty, Gyeongbokgung and Changdeokgung. Unlike other hanok villages, Bukchon was not created for tourists but it is a living village inhabited by Seoulites, comprising about 900 hanoks spread across 11 dong(administrative sections). The reason there are so many traditional houses in this area is that many yangbans(people from the ruling class) lived here during the Joseon Dynasty (1392- 1910).



With its recently-opened hanok gallery, craft workshop and hanok restaurant, the village is increasingly important as a center for culture and the arts. There are also a number of museums of traditional Korean culture including the Gahoe Museum, the Han Sangsu Embroidery Museum, the Museum of Korean Art and many more.


Bugak Skyway Octagonal Pavilion




Bugak Skyway, which runs along the northeast ridge of Bugaksan(Mt.), has become known as the most beautiful driving route in Korea ever since it opened in September of 1968. The road is forested by thick greenery and leads to an octagonal pavilion(Palgakjeong) located at the top of the mountain, allowing visitors to appreciate a panoramic view of the whole city of Seoul. Ever since Palgakjeong and the surrounding areas underwent renovation and re-opened in April 2010, Bugak Skyway has

grown to become a must for local residents and tourists alike.


Millennium Seoul Hilton

	homepage	http://www.hilton.co.kr/	
	Telephone	+82-2-753-7788	
	Facilities	Gymnasium, Indoor Swimming Pool, Indoor Golf Driving Range..	
	Address	395, 5-ga Namdaemun-ro, Chung-gu, Seoul, Korea	
Rate	Deluxe Room(200 service charge)	KRW 260,000	
	(KW266, 200 service charge, tax included in price) / price for breakfast is not included		
	Deluxe Room(400 service charge)	KRW 290,000	
	b(KW290, 400 service charge, tax included in price) / per person inclusive of breakfast		

Ramamda Hotel & Suites Seoul Namdaemun

	homepage	http://www.ramadapnp.com	
	Telephone	+82-2-2119-8900	
	Facilities	Meeting Rom, Red Square, Raon spa	
	Address	151, Sunhwa-dong, Jung-gu, Seoul, Korea	
Rate	Superior	KRW 260,000	
	Deluxe	KRW 290,000	
	Suite	KRW 340,000	
	(The above rates are subject to 10% tax and service charge.)		

PACIFIC HOTEL

	homepage	http://www.thepacifichotel.co.kr/	
	Telephone	+82-2-777-7811	
	Facilities	Restaurant(Mirabeau), Rose hall	
	Address	31-1, Namsan-dong 2-ga, Jung-gu, Seoul, Korea	
Rate	Double	KRW 158,400	
	Twin	KRW 178,200	
	Triple	KRW 217,800	


Hotel Irene

	homepage	http://www.hotelirene.co.kr/	
	Telephone	+82-2-771-1144	
	Facilities	Restaurant, Wine Bar	
	Address	122, Bukchang-dong, Jung-gu, Seoul, Korea	
Rate	Single	KRW 170,000	
	Deluxe/Twin	KRW 180,000	


Savoy Hotel

	homepage	http://www.savoyhotel.co.kr	
	Telephone	+82-2-776-2641	
	Facilities	Restaurant(goody goody)	
	Address	23-1, Chungmuro 1-ga, Jung-gu, Seoul, Korea	
Rate	Deluxe Single	KRW 145,200	
	Double/Twin	KRW 174,240	

Namdaemun Guesthouse Seoul

	homepage	http://www.guesthousesoul.kr/	
	Telephone	+82-2-755-4020	
	Facilities	PCroom, Kitchen, Laundry,	
	Address	82-33, Hoehyundong 1ga, Chung-gu, Seoul, Korea	
Rate	KRW 40,000~KRW 70,000		

Seoulbackpackers

	homepage	http://www.seoulbackpackers.com/	
	Telephone	82-2-3672-1971	
	Facilities		
	Address	114, Da-Dong, Jung-GU, Seoul, Korea	
Rate	Single	KRW 50,000	
	Double	KRW 60,000	



MEMO



The background of the entire page is a technical drawing on a crumpled paper texture. The drawing includes various mechanical components such as gears, shafts, and housing parts, with labels like 'A', 'B', 'C', 'd', 'b', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n', 'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x', 'y', 'z' scattered throughout. The drawing is rendered in a light grey color.

KSMTE

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