

The Sixth International Symposium on

Measurement Technology and Intelligent Instruments

28 November - 1 December 2003

Academic Building, Hong Kong University of Science and Technology, Kowloon
Hong Kong



ISMTII 2003

Organized by



Department of Mechanical Engineering
Hong Kong University of Science and Technology (HKUST)

Co-organized by



Huazhong University of Science and Technology (HUST)



Harbin Institute of Technology (HIT)



Hefei University of Technology (HUT)

State Key Laboratory of Precision Measurement

- Technology and Instruments of Tianjin University and Tsinghua University, China

Sponsored by



International Committee on Measurements and Instrumentation (ICMI)



National Natural Science Foundation of China (NSFC)

- K. C. Wong Education Foundation, Hong Kong, China
- Institute for National Measurement Standards, National Research Council, Canada

Invitation

On behalf of the Organizing Committee of the Sixth International Symposium on Measurement Technology and Intelligent Instruments (ISMTII 2003), we cordially invite you to attend the symposium to share and to exchange your research achievements and experiences with delegates from many other countries and regions.

The symposium will be held in Hong Kong during 28 November - 1 December 2003. It is organized by Hong Kong University of Science and Technology (HKUST) and co-organized by Huazhong University of Science and Technology (HUST), Harbin Institute of Technology (HIT), Hefei University of Technology (HUT), and State Key Laboratory of Precision Measurement Technology and Instruments of Tianjin University and Tsinghua University, China. The symposium is sponsored by International Committee on Measurements and Instrumentation (ICMI), National Natural Science Foundation of China (NSFC), K. C. Wong Education Foundation, Hong Kong, China, and Institute for National Measurement Standards, National Research Council, Canada. The purpose is to facilitate exchanges between researchers of the field from many countries and regions around the world in order to promote and to advance measurement technology and intelligent instruments, a very important engineering subject. It is also aimed to promote friendly relations between researchers and engineers in the field world wide. During this symposium, we will have four keynote addresses by researchers from US, Japan, Europe, and China. ISMTII has been a series of symposia for researchers to report advances in measurement technology and scientific instruments. The 1st and 2nd ISMTII were held in 1989 and 1993, respectively, by Huazhong University of Science and Technology, China, and the University of Birmingham, UK. The 3rd one was held in 1996 and by Tokyo Institute of Technology, Japan. The 4th one was held in 1998 and by the University of Miskolc, Hungary. The 5th one was held in 2001 and by the National Institute for Standards, Egypt.

This time, more than 110 papers have been accepted for presentation. The topics include measurement for advanced materials, micro and nano measurement, biomedical and environmental measurement, optical precision measurement, form error, displacement and angle measurement, on-line and in-process measurement, micro and nano surface metrology, flow and thermal measurement, sensing systems, mechanical and physical quantity measurement, data, signal and image processing for precision measurement. For these topics, novel designs in sensor and sensing systems, and novel techniques will be reported. Modeling and investigations on characteristics and performances of precision sensor and sensing systems will also be presented. The selection of papers for inclusion in this symposium was based on the recommendations from the preliminary review of abstracts and from the final review of full length papers, with both reviews concentrating on originality and quality. While emphasizing the practical techniques to improve precision and efficiency, theoretical examinations of measurement processes and systems are also considered. We believe that the newest applicable information will be presented. The symposium should be suitable for active researchers and engineers.

During the symposium, an expanded general meeting of ICMI will be held to discuss issues including approval of admissions of new members and amendment of the 1993 version constitution of the ICMI.

In terms of weather, November and December are among the best months of a year in Hong Kong. The local temperature for these months is around 21°C, based on the records of 2001. The campus of HKUST is located at a scenic site along the Clear Water Bay peninsula of Hong Kong. The campus is equipped with modern facilities and takes approximately 20 minutes to travel from the city center, which is conveniently connected to the Hong Kong International Airport. For your hotel reservation, please respond to the local travel agency PC Tours and Travel directly, which has helped many conferences held in HKUST in the past. It is providing special offers and the details are in the hotel information and reservation form.

After registering to the symposium, please contact Miss Ronnie Tse at mertse@ust.hk for confirmation. Upon arrival at the symposium, you will receive a receipt for your payment, a name tag, and symposium handouts. Registration and reception will be open starting from 6:00pm on 28 November 2003.

We look forward to meeting you at ISMTII 2003 in Hong Kong.



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V. Hans, University of Essen, Germany
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Z. C. Lin, National Taiwan University of Science and Technology, Taiwan, China
C. Liu, Dalian University of Technology, China
X. Liu, University of Warwick, UK
H. J. Pahk, Seoul National University, Korea
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L. Z. Wang, Institute of Metrology, China
T. B. Xie, Huazhong University of Science and Technology, China
G. Z. Yan, Shanghai Jiao Tong University, China
S. H. Yeo, Nanyang Technological University, Singapore
L. J. Zeng, Tsinghua University, China
J. G. Zhou, Drexel University, USA

Schedule

	Academic Concourse		
28 Nov. 2003	18:00-20:00	Registration Reception	
29-30 Nov. 2003	09:00-18:00	Registration and helpdesk	

	Lecture Theatre F (A Windows 2000 PC will be available. A video projector is connected to the PC)	Classroom 1403 (A Windows 2000 PC will be available. A video projector is connected to the PC)	Classroom 1505 (A Windows 2000 PC will be available. A video projector is connected to the PC)
29 Nov. 2003	09:00-11:10	Registration Opening session Keynote addresses	
29 Nov. 2003	11:20-13:00	Measurement for advanced materials I	Micro and nano measurement I Biomedical and environmental measurement
29 Nov. 2003	14:00-15:40	Measurement for advanced materials II Micro and nano measurement II	Form and displacement I Data, signal and image processing I
		Academic Concourse	
29 Nov. 2003	16:00-17:40	Poster session	

	The Clearwater Bay Golf and Country Club		
29 Nov. 2003	18:30-22:00	Banquet	

	Lecture Theatre F (A Windows 2000 PC will be available. A video projector is connected to the PC)	Classroom 1403 (A Windows 2000 PC will be available. A video projector is connected to the PC)	Classroom 1505 (A Windows 2000 PC will be available. A video projector is connected to the PC)
30 Nov. 2003	09:00-10:00	Keynote addresses	
30 Nov. 2003	10:10-12:30	Flow and thermal measurement I	Form and displacement II On-line and in-process measurement Data, signal and image processing II
30 Nov. 2003	14:00-15:40	Flow and thermal measurement II Sensing systems, mechanical and physical quantities I	Form and displacement III Surface Metrology I Optical precision measurement I
30 Nov. 2003	16:00-17:40	Sensing systems, mechanical and physical quantities II	Surface Metrology II Optical precision measurement II
30 Nov. 2003	18:00-18:10	Best paper awards	

	Tours		
01 Dec. 2003	09:00-15:00	Optional tours	

Further Information

For further information, please write to

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*The Sixth International Symposium on
Measurement Technology and Intelligent Instruments*

28 November - 1 December 2003
Academic Building, Hong Kong University of Science and Technology, Kowloon, Hong Kong

Program

28-30 November 2003	Academic Concourse		
28 November 2003 18:00-20:00	Registration Reception		
29-30 November 2003 09:00-18:00	Registration and helpdesk		
29 November 2003	Lecture Theatre F (A Windows 2000 PC will be available. A video projector is connected to the PC)	Classroom 1403 (A Windows 2000 PC will be available. A video projector is connected to the PC)	Classroom 1505 (A Windows 2000 PC will be available. A video projector is connected to the PC)
09:00-09:20	Registration		
	Opening session Chairman: Y. Gao, HKUST, Hong Kong, China		
09:20-10:00	Addresses R.T. Chin, Vice-President for Research and Development, HKUST, Hong Kong, China Z. Li, Founding Chairman, ICMI P. Chan, Dean, School of Engineering, HKUST, Hong Kong, China		
	Break		
	Keynote address Chairman: J.G. Zhou, Drexel University, USA		
10:10-10:40	Novel Optical Techniques for Nanometer Measurements T. Miyoshi, Osaka University, Japan		
	Keynote address Chairman: W. Gao, Tohoku University, Japan		
10:40-11:10	The NIST Standard Bullets and Casings Project J.F. Song, National Institute of Standards and Technology, USA		
	Break		

29 November 2003	Lecture Theatre F	Classroom 1403	Classroom 1505
	Measurement for advanced materials I Chairpersons: X. Liu, University of Warwick, UK S. Takahashi, University of Tokyo, Japan	Micro and nano measurement I Chairmen: K.C. Fan, National Taiwan University, Taiwan, China W.H. Huang, University of Science and Technology of China, China	Biomedical and environmental measurement Chairmen: F. Schneider, Technical University of Munich, Germany J.B. Tan, Harbin Institute of Technology, China
11:20-11:40	Laser Scattering Measurement of Microdefects on Silicon Oxide Wafer T. Ha, T. Miyoshi, Y. Takaya and S. Takahashi	A High-Precision AFM for Nanometrology of Large Area Micro-Structured Surfaces J. Aoki, W. Gao, S. Kiyono and T. Ono	A Biological Sensor for Detecting Foreign Bodies Using a Balloon-Probe H. Shimizu, S. Kiyono, W. Gao and H. Shoji
11:40-12:00	Characterisation of Surface Properties by a Multi-Function TPM X.P. Liu and J. Zhang	A Study on the Mechanism of a New High-Speed Scanning Miniature Nano-Measurement Probe K.C. Fan and Y.J. Chen	A Resonant Frequency Measurement System for Osseointegration Trans-Femoral Implant W. Xu, F. Shao and D. Ewins
12:00-12:20	Development of an Evanescent Light Measurement System for Si Wafer Microdefect Detection S. Takahashi, R. Nakajima, T. Miyoshi, Y. Takaya and K. Takamasu	Use of Fiber Interferometer for AFM Cantilever Probe Displacement Control N.C. Shie, T.L. Chen and K.Y. Cheng	Innovative 3D Dental Measurement for Tooth Model Restoration L.C. Chen and Z.Q. Xu
12:20-12:40	An Embedded FBG Sensor for Dynamic Strain Measurement for a Clamped-Clamped Composite Structure H.Y. Ling, K.T. Lau, L. Cheng, J. Wei, R.S. Thomson and M.L. Scott	Determining the Radial Modulus of DNA Measured by VPSFM Y.H. Chen, X.J. Li, X.F. Zhou, J.L. Sun, W.H. Huang and J. Hu	An Intelligent CO ₂ Sensor for Private Homes M. Gürtner, N. Neumann and F. Schneider
12:40-13:00	Damage Detection of Composite Structures Using Dynamic Analysis L.H. Yam, L. Cheng, Z. Wei and Y.J. Yan	Pitch Calibration by an Active Temperature-Controlled Traceable Atomic Force Microscope and a Laser Diffractometer C.J. Chen, S.P. Pan and L.C. Chang	A Carbon Monoxide Semiconductor Sensor Based on Nano Gold Crystallites and Cobalt Oxide Powders R.J. Wu, C.H. Hu, C.T. Yeh and P.G. Su
	Lunch at the Ground Floor Restaurant	Lunch at the Ground Floor Restaurant	Lunch at the Ground Floor Restaurant
	Measurement for advanced materials II Micro and nano measurement II Chairpersons: L.H. Yam, Hong Kong Polytechnic University, Hong Kong, China T.L. Chen, Center for Measurement Standards, Taiwan, China	Form and displacement I Chairpersons: W. Gao, Tohoku University, Japan L.J. Zeng, Tsinghua University, China	Data, signal and image processing I Chairmen: I. Frollo, Slovak Academy of Sciences, Slovakia H. Schweinzer, Vienna University of Technology, Austria
14:00-14:20	Investigation of Nonisothermal Crystallization Behaviors of Poly and Silica Nanocomposites Using Differential Scanning Calorimetry L.X. Kong and Z. Peng	A Scanning Multi-Probe Straightness Measurement System for Alignment of Linear Collider Accelerator W. Gao, J. Yokoyama, S. Kiyono and N. Hitomi	A Least Square Method for Measurement and Optimisation in Selected Physical Experiments I. Frollo, P. Andris, I. Strolka and L. Bačiak

29 November 2003	Lecture Theatre F	Classroom 1403	Classroom 1505
14:20-14:40	Ellipsometric Detection of Transitional Surface Structures on Decapped GaAs A.V. Vasev and S.I. Chikichev	Measurement of the Straightness of a Leadscrew-Driven Precision Stage Y. Arai, W. Gao, S. Kiyono and T. Kuriyagawa	Uncertainty in the Certification System for pH Buffer Solutions R.J. Wu and C.G. Chen
14:40-15:00	Temperature Effect on the Stability of CuO Nanofluids Based on Measured Particles Distribution T.T. Tsung, H. Chang, L.C. Chen, J.S. Tsai, C.H. Lo and Y.Y. Zhuo	A Circular Profile Measurement Method Using the Software Technique E. Okuyama and K. Mitsui	3D Digital Measurement of Large-Scale Objects Based on Viscous Target B. Wu, J.G. Zhu, X.Y. Yang, T. Xue and S.H. Ye
15:00-15:20	Micro-Force Calibration with an All-Coil Magnetic Levitation S.W. Hsu and T.L. Chen	A Circle Contour Measurement Technique Based on Randomized Hough Transform Using Gradient Information J.W. Cui and J.B. Tan	Improving Measurement Accuracy Using Image Super-Resolution D.S.H. Ling, H.Y. Hsu, G.C.I. Lin and S.H. Lee
15:20-15:40	Effect of Residual Stresses on a Micromachined Z-Axis Vibrating Rate Gyroscope A.P. Qiu, Y. Su, S.R. Wang and B.L. Zhou	Theoretical Analysis and Basic Experiments for the 3D Displacement Measurement Using Ring-Shaped Laser S. Usuki, K. Enami, M. Hiraki, S. Takahashi and K. Takamasu	Implementation of a Vector Signal Analyzer for Digital Communication Systems C.M. Chi, P.W. Kao, H.F. Hsieh, J.H. Peng, S.S. Shieh and W.Y. Liu
	Break	Break	Break
29 November 2003	Academic Concourse (A0 size display boards are provided. Posters should be displayed on 28 November 2003)		
	Poster session		
16:00-17:40	Assessment		

29 November 2003	Academic Concourse
16:00-17:40	<p>A Thermovision Method for Studying Deformation Kinetics of Materials and Structure Elements E.S. Lukin and A.M. Ivanov</p> <p>Determination of Young's Modulus of Micromechanical Silicon Films Using an Acoustic Excitation and Optical Detection Resonance Method Y.M. Liu, W.J. Tian and S.J. Zhang</p> <p>A Measurement System for Step Imprint Lithography H.Z. Liu, B.H. Lu, Y.C. Ding, D.C. Li, Y.P. Tang and T. Jin</p> <p>Design and Simulation of a DETF for Use in a Resonant Gyroscope Y.L. Zhu, S.R. Wang and A.P. Qiu</p> <p>Micro Angle Measurement for a Scanning Stage Q.G. Liu, D.C. Li, Z.G. Li and X.T. Hu</p> <p>A Humidity Sensor Array of Polymer Films on Silicon Wafer J. Wang, K. Shi and L. Chen</p> <p>A Hybrid Optical Correlator Used as an Intelligent Instrument S. Chang and C.P. Grover</p> <p>A Two-Color Heterodyne Interferometer Based on Diffraction Grating for Displacement Measurement G.H. Wu, Z.J. Cai and L.J. Zeng</p> <p>Detection of Random Defects on Highly Reflective and Complex Surfaces X.H. Qu, Y. He, G.X. Jia, J.M. Ding and S.H. Ye</p>

29 November 2003	Academic Concourse
16:00-17:40	<p>Automatic Laser Monitoring of Dam Safety K.D. Yue, X. Zhou and J. Gao</p> <p>An Application of the Kalman Filter in a Laser Tracking Measurement System X.R. Chen, P. Cai and W.K. Shi</p> <p>A Study of the High Precision Measuring Circuit Based on Digital Techniques for Roundness Measurement W.Q. Zhao, J.B. Tan, Z. Xue and Z.D. Feng</p> <p>A Coaxiality Measurement Method for Hole Using Non-Diffracting Beam Technology X.B. Zhang, X.Q. Jiang and Z. Li</p> <p>Effects of Rotation Angle on the Circular Test of Geometric Errors H.L. Liu</p> <p>A Study of the Deformation Measurement of 3D Displacement Field S.R. Lee, Z.S. Luo, H.S. Qiu, B.G. Wang and L.S. Liu</p> <p>A High Precision Dynamic Autocollimator M.Z. Shen and S. Liao</p> <p>A New Method for the Measurement of Dynamic Angular Errors of a Photoelectric Shaft Encoder X.D. Cao, T.Q. Fan and L.H. Geng</p> <p>Detection and Control of Synchro-Operation of Long-Stroke Cylinders in a Deep Ocean Mining Heave Compensation System B.H. Wu, T.B. Xiao, D.P. Zou and J.J. Long</p> <p>A Plastic Film Thickness On-line Detecting System Y.Z. Ma, S.H. Ye, F. Duan and Y. Zheng</p> <p>Effects of Key Parameters on the Performance of a New In-Process Optical Measurement Method Z. Tao and Y. Gao</p> <p>Anti-Vibration Characteristics of a Lateral Shear Interferometer for On-Machine Surface Measurement X. Liu, Y. Gao, S. To and W.B. Lee</p> <p>Application of Wavelet Analysis for Online Measurement of Crude Oils X. Li, Z.L. Ding and F. Yuan</p> <p>A Combination of M-Estimation and Gaussian Filtering for Characterizing 3D Engineering Surfaces H.F. Li, X.Q. Jiang and Z. Li</p> <p>Development of a Large Range Nanometer-Profilometer with Controlled Contact Force L. Yang, Y. Gao, X. Wang and T. Xie</p> <p>Instantaneous Measurement of 3D Profile by Grey Code Grating A.L. Tian, B. Li, M.T. Huang and Z.D. Jiang</p> <p>A 3D Profile Parallel Detecting System Based on Differential Confocal Microscopy Y.H. Wang, X.F. Yu and Y.T. Fei</p> <p>Determination of the Jetting Force of a Jet Actuator L. Zhao, S.X. Yang and H. Ren</p> <p>A Polarized Optical Fiber Pressure Sensor with a Sampling Reference Optical Path Y.Q. Huang, Y.X. Lin, Z.L. Huang, L.M. Zhu and Y.M. Chen</p> <p>A New Sensing System for Dynamic Pressure Measurement under Severe Conditions Z.T. Wu, Q.S. Wang and Z.D. Jiang</p> <p>A Novel Non-Gyro Inertial Measurement Unit M.L. Ding, Q. Wang, G. Shen, L. Hong and P. Zhao</p> <p>An X-Y Stage with a Plane Cross Grating Metrology System X. Wang, Y. Gao, J. Guo and T. Xie</p> <p>A Fast Search Coil Sensing Method for Free Flying Insect Tracking Z.J. Cai and L.J. Zeng</p> <p>Design of a Two-Degree of Freedom Beating-Machine S. Zhang and L. Zeng</p>

29 November 2003	Academic Concourse
16:00-17:40	<p>Electromagnetic Field Analysis and Measurement of a High Speed Attraction Type Magnetic Levitation Vehicle System D.X. Chen, M.C. Pan, F.L. Luo, Z.W. Kang, W.G. Tian And Y.Y. Hu</p> <p>A DDS Waveform Generator for Electromagnetic Non-Destructive Testing X.H. Cao, F.L. Luo , F.T. Bai and Y.H. Zhang</p> <p>Eddy Current Testing Using a Model Based Measurement Method F.L. Luo, Y.Y. Hu and Z.W. Kang</p> <p>Surface Reconstruction Base on Laser Scan Data Y.P. Luo, Z.D. Jiang, B. Li and Y.G. Wang</p> <p>Digital Image Processing for a Liquid Signature Analysis System with a CCD Camera H.X. Chen, Z.R. Qiu and G.X. Zhang</p> <p>Sub-Pixel Edge Detection for Precision Measurement Based on Canny Criteria S.H. Xie, Q. Liao and S.R. Qin</p> <p>An Application of Fractal Theory in the Design of Precision Measurement Instrument S.R. Lee, Z.G. Li, B.G. Wang and H.S. Chiou</p> <p>Online Calibration for a Stereo Vision Measurement System Z.J. Yu, S. Ma, W. Tian, Q. Wang, Z. Li and J. Li</p> <p>Order Tracking Filtering for Rotating Machinery Diagnosis Based on Zero Phase Distortion Digital Filtering Y. Guo and S. Qin</p> <p>An Application of the AGC Technology for Sensor Signal Processing X.K. Liu, D.L. Peng, X.H. Zhang and X.H. Cheng</p> <p>Using Wavelet Multi-Resolution Analysis to Track Point Targets With Low Signal-To-Clutter Ratios Y. Dang, H.P. Kuang and L.P. Zhai</p>

29 November 2003	The Clearwater Bay Golf and Country Club (Near the tip of the Clear Water Bay peninsula of Hong Kong)		
18:00	Coach to the venue (Boarding at the semi-circular entrance piazza)		
18:30-22:00	Banquet		
22:00	Coach back from the venue		
30 November 2003	Lecture Theatre F (A Windows 2000 PC will be available. A video projector is connected to the PC)	Classroom 1403 (A Windows 2000 PC will be available. A video projector is connected to the PC)	Classroom 1505 (A Windows 2000 PC will be available. A video projector is connected to the PC)
	Keynote address Chairman: C. Hsu, Center for Measurement Standards, Taiwan, China		
09:00-09:30	Advances in Micro and Nano-Scale Surface Metrology L. Blunt, University of Huddersfield, UK		
	Keynote address Chairman: K. Takamasu, University of Tokyo, Japan		
09:30-10:00	On-Line Industrial 3D Measurement Techniques for Large Volume Objects S.H. Ye, Tianjin University, China		
	Break		

30 November 2003	Lecture Theatre F	Classroom 1403	Classroom 1505
	Flow and thermal measurement I Chairmen: V. Hans, University of Essen, Germany S.X. Yang, Zhejiang University, China	Form and displacement II Chairmen: E. Okuyama, Akita University, Japan Z.D. Jiang, Xi'an Jiaotong University, China	On-line and in-process measurement Data, signal and image processing II Chairmen: H. Ohmori, Institute of Physical and Chemical Research, Japan H. Roth, University of Siegen, Germany
10:10-10:30	Detection of Vortex Frequency in Gas Flow with Ultrasound V. Hans and C. Filips	High Resolution Ultrasonic Distance Measurement Systems Using Pulse Compression and Their Applications H. Schweinzer and H. Elmer	An Ultraprecision On-Machine Measurement System H. Ohmori, Y. Watanabe, W. Lin, K. Katahira and T. Suzuki
10:30-10:50	Design, CFD Investigation and Implementation of a Novel Diverter Mechanism for Water Flow Measurement Y.L. Ho, J.Y. Chen, J.H. Shaw and C.T. Yang	A Multi-Range Fiber-Optical Non-Contact Displacement Micrometer G.J. Hwang and W.H. Ko	Automatic On-Line Nanoparticle Measurement for Process Analysis of ASNSS L.C. Chen, J.Y. Sun, T.T. Tsung, H. Chang and H.M. Lin
10:50-11:10	Performance Characterization of Pressure Sensors Using an Improved Pressure Square Wave Generator T.T. Tsung, L.L. Han, L.C. Chen and H. Chang	A Displacement Sensor Based on Differential Frequency Measurement D.L. Peng, X.H. Zhang and X.K. Liu	A Real-Time and On-Line Visual System for Seamless Steel Pipe Linearity Measurement C.J. Liu, X.Y. Yang, J.G. Zhu and S.H. Ye
11:10-11:30	A High Sensitivity Pressure Sensing System with Fiber Bragg Grating Using the Transverse Strain Characteristics of a Straight Bourdon Tube M.X. Jiao, E.G. Zhao, Y.M. Liu and R.L. Qi	Development of a Sensitive Probe for Coordinate Measuring Machines M. Watanabe and R. Furutani	A Structured-Light-Based On-Line 3D Measurement System and Software Development X.Y. Yu, F.B. Zhang, H.J. Yuan and Z.G. Lang
11:30-11:50	An Ultra-Precision Air-Pin Sensor and its Dynamic Characteristics H. Zhang, S.X. Deng, H.Q. Wang and S. Chen	A Portable 3D Vision Coordinate Measurement System Using a Light Pen S.G. Liu, K. Peng, F.S. Huang, G.X. Zhang and P. Li	A New Ellipse Recognition Algorithm for CCD Camera C. Sun, X. Zhang, Z. Wang and S. Ye
11:50-12:10	An Automatic Sorting System Based on Pneumatic Measurement Y.H. Wang, S.Q. Hu and Y. Hu	Three-Dimensional Slit Width Measurement of a Long Precision Slot Die M. Furukawa, W. Gao, H. Shimizu, S. Kiyono, M. Yasutake and K. Takahashi	A Rapid Calibration Method for the Laser Scanning 3D Measurement System Z. Xu, L. Tao, C. Sun and Y. Zheng
12:10-12:30	An Optical Fiber Temperature Sensor Based on Spectrum Measurement Z.G. Li and B.G. Wang	Comprehensive Inspection of Geometric Parameters of Running Freight Car Wheel Pairs A.N. Baybakov, V.M. Gurenko, S.P. Yunoshev, S.V. Plotnikov, V.V. Sotnikov and K.P. Kascheev	Error Evaluation of Aspheric Surfaces and Calibration of the Test Instrument Q. Hao, Q.D. Zhu and Y.T. Wang
	Lunch at the UC Bistro	Lunch at the UC Bistro	Lunch at the UC Bistro

30 November 2003	Lecture Theatre F	Classroom 1403	Classroom 1505
	Flow and thermal measurement II Sensing systems, mechanical and physical quantities I Chairpersons: S.C. Kim, Chungbuk National University, Korea P. Cai, Shanghai Jiao Tong University, China	Form and displacement III Surface Metrology I Chairmen: P. Scott, Taylor Hobson Limited and University of Huddersfield, UK J.G. Zhou, Drexel University, USA	Optical precision measurement I Chairmen: R. Jablonski, Warsaw University of Technology, Poland S.L. Zhang, Tsinghua University, China
14:00-14:20	A White-Light Interference Distributed Optical Fiber Temperature Sensor X.J. Zhou, J.J. Gong, Y.Z. Liu and J.H. Zhou	Dynamic Measurement of Bearing Radial Clearances Y.X. Chen and S.N. Yang	A Mobile Shearography System for Non-Destructive Testing of Industrial and Artwork Components M. Kalms and W. Jueptner
14:20-14:40	Design of an Intelligent Multi-Gyro Measurement Device J.P. Wang, W. Zhou, W.F. Tian and Z.H. Jin	2D and 3D Surface Texture Comparisons Using Autocorrelation Functions J. Song, L. Ma, E. Whinton and T. Vorburger	A High Precision Three-Dimensional Optical Sensor Using Fourier Transform Profilometry H.Y. Sung, L.F. Tien, C.Y. Lin, C.Y. Lo, Y.R. Lin, Y.M. Lin and T.H. Tao
14:40-15:00	Evaluation of Thrust Force and Positioning Accuracy of a New Linear Motor X. Chen, K. Takamasu and M. Nikaidou	Spline Filters in Surface Texture Analysis M.P. Krystek	Development and Verification of a Con-Focal Fabry-Perot Interferometer for Broad Band Ultrasound Detection J.H. Shaw, J.Y. Lee, L.H. Chow and H.C. Shih
15:00-15:20	Intelligence and Metrological Reliability of Transducers Built in Equipment R. Taymanov and K. Sapozhnikova	Web-Based Virtual Measurement, Analysis and Evaluation of Micro Surface Topography C. Anthony, L. Ma and J. Zhou	A Laser Feedback Interferometer Based on Orthogonally Polarized HeNe Lasers S.L. Zhang, Y.C. Ding, J. Zhu and Y. Li
15:20-15:40	Measurement of Finishing Errors for Evaluation of Dynamic Characteristics of NC Machine Tools S.C. Kim, C.H. Lee and B.H. Lee	Texture Extraction and Identification of 3D Engineering Surfaces W. Zeng, X. Jiang, Y. Gao and T. Xie	A New Method for the Development of Frequency Standards for the Optical Wavelength Range of 243nm E.K. Izrailov and V.F. Ezhov
	Break	Break	Break
	Sensing systems, mechanical and physical quantities II Chairmen: Y.T. Fei, Hefei University of Technology, China X.H. Qu, Tianjin University, China	Surface metrology II Chairpersons: X.Q. Jiang, University of Huddersfield, UK M. Krystek, PTB, Germany	Optical precision measurement II Chairmen: Y. Chugui, Technological Design Institute of Scientific Instrument Engineering, Russia W. Xu, University of Surrey, UK
16:00-16:20	Evaluation of Dynamic Parameters of an Underdamped Grinding Machine S. Tse and Y. Gao	A Comparative Study of the Current 3D Motif Combination Methods J. Guo, Y. Gao and T. Xie	Optical Measurement Technologies and Systems for Industrial Applications Y.V. Chugui

30 November 2003	Lecture Theatre F	Classroom 1403	Classroom 1505
16:20-16:40	Measurement and Analysis of the Dynamic Characteristics of a High-Speed Painting Automizer Z. Yang, Y. Gao, T. Huang and D. Zhang	A New Three-Dimensional Profilometer for Surface Profile Measurement Using Digital Fringe Projection and Phase Shifting L.C. Chen, S.H. Tsai and K.C. Fan	Influence of the Size of Round Objects on the Output Signal of Laser Measuring Scanner R. Jablonski
16:40-17:00	Combination of ICA and SOM for Classification of Machine Condition Patterns S.X. Yang, W.D. Jiao and Z.T. Wu	A Two-Dimensional Surface Profile Imaging Technique Based on Heterodyne Interferometer K.W. Wang, Z.J. Cai and L.J. Zeng	A Study on the Multi-Wavelength Drop Analysis Technology G. Hao, Z.R. Qiu, G.X. Zhang and A.P. Zhang
17:00-17:20	Observation of Scattered Evanescent Waves M. Ozaki and R. Furutani	A Laser Sensor Technique for Measuring 3D Surface Based on the Polarized Heterodyne Astigmatic Principle L.R. Qiu and X.M. Ding	Accurate Estimation of Phase Distribution on Reference Plane in Grating Projection Measurement M.R. Zhao, Y.C. Lin, X.B. Niu and D.M. Cheng
17:20-17:40	Power System Frequency Tracking Using an Adaptive Lattice Notch Filter S. Zhang, S.P. Zhang, D. Li and J. Sun	Use of Artificial Life for Pavement Distress Survey Q. Wang and H. Zhang	Measurement of Core Position of Fiber Array by a Calibrated Mask Method S.W. Hsu, Y.D. Jian and M.S. Huang
	Best paper awards Chairman: K.T. Lau, Hong Kong Polytechnic University, Hong Kong, China		
18:00-18:10	Presentation of two best paper awards		
01 December 2003	Tours		
	Optional tours		
09:00-15:00			

Symposium Secretariat

Ronnie Tse, Hong Kong University of Science and Technology, Hong Kong, China
Ellie P. S. Ho, Hong Kong University of Science and Technology, Hong Kong, China

ISMTH 2005

Thank you for your participation in ISMTH 2003. Look forward to meeting you at ISMTH 2005. Announcement will be available in the homepage of ICMI at

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The Sixth International Symposium on
Measurement Technology and Intelligent Instruments

28 November - 1 December 2003
Academic Building, Hong Kong University of Science and Technology, Kowloon, Hong Kong

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A separate form is required for each delegate. Please photocopy the form if necessary.

Please send your completed registration form to **Miss Ronnie Tse** of the address on next page. You may fax your completed registration form to **(852) 2358-1543**.

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Name of delegate (Please use CAPITAL letters for surname)	
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Full registration ^a	HK\$2930 /US\$370		HK\$3170 /US\$400	
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Each accompanying person ^c	HK\$672 /US\$85		HK\$672 /US\$85	
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^a The registration includes technical sessions, one reception, one banquet, refreshment breaks, two lunches, one copy of the conference proceedings, and one copy of the hard cover special volume of the periodical KEM to be mailed to you after publication.

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Name of bank : Hang Seng Bank Limited UST Branch
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SWIFT Code : HASE HKHH
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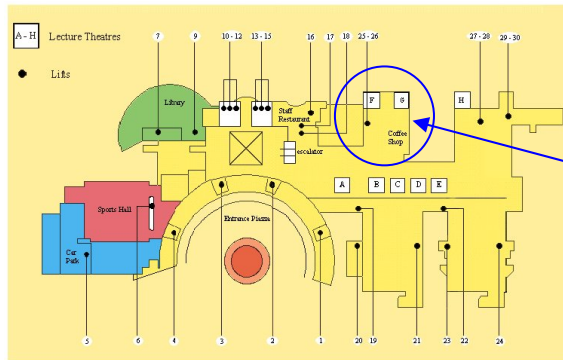
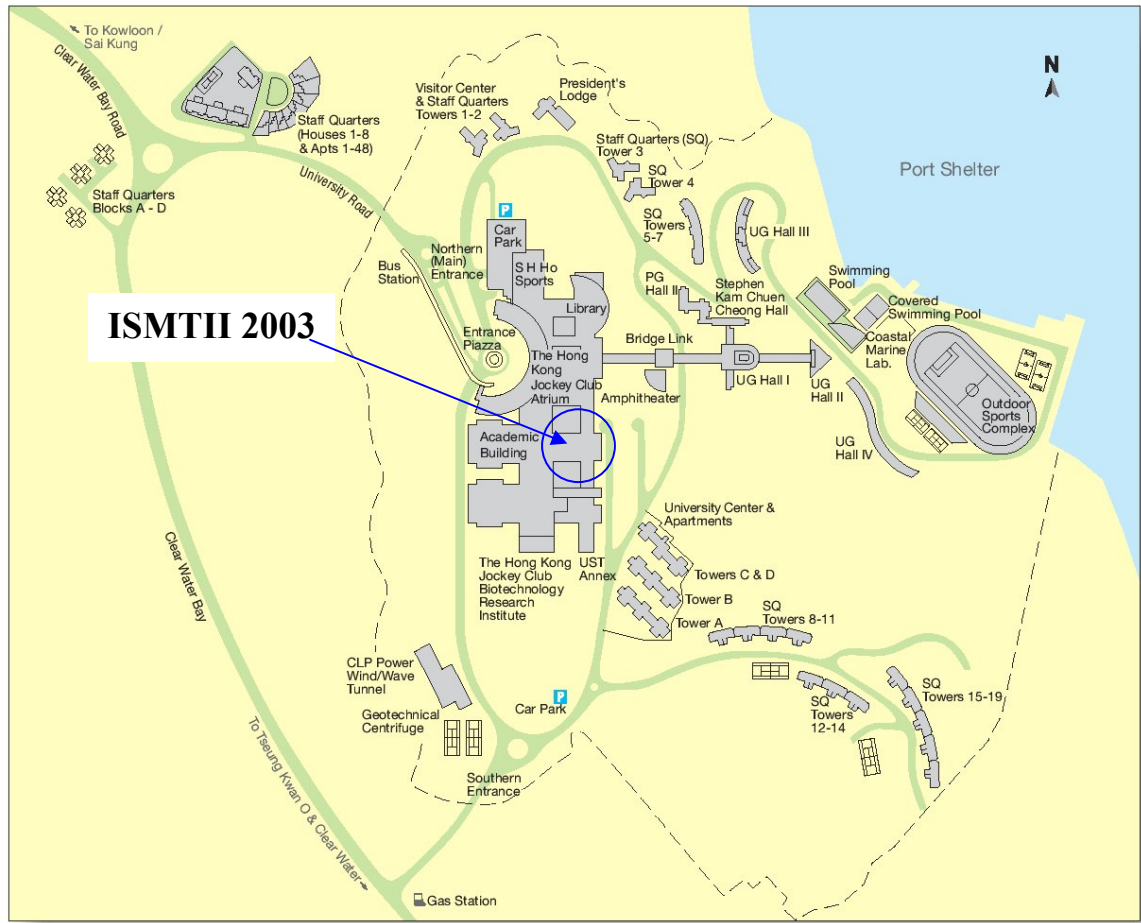
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THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY



Hints for transportation from airport to HKUST:
For passengers with bulky luggage, taking a taxi to HKUST direct is recommended.
Those with simple luggage may take Airport Bus A22 to Lam Tin, and change for taxi to HKUST.

Picture inserts initiated by Dr. Gao of ME, HKUST in 2002.