

## Conference Program Overview

### Monday, June 16, 2008

08:00 am – 05:00 pm	Registration		
08:00 am – 09:00 am	Continental Breakfast (Williman Patio)		
08:45 am – 09:00 am	Conference Welcome (California Mission Room)		
	<b>California Mission Room</b>	<b>Parlors D&amp;E</b>	<b>Williman Room</b>
09:00 am – 10:40 am	THN-A	SCT-A	OPT-A
10:40 am – 11:00 am	Break		
11:00 am – 12:40 pm	THN-B	SCT-B	OPT-B
12:40 pm – 01:40 pm	Lunch (Williman Patio)		
01:40 pm – 03:20 pm	THN-C	BSM-A	MNT-A
03:20 pm – 03:40 pm	Break		
03:40 pm – 05:20 pm	THN-D	BSM-B	MNT-B
05:30 pm – 06:30 pm	<ul style="list-style-type: none"> <li>• Social Hour</li> <li>• ISPS Executive Committee Meeting (Parlor A)</li> </ul>		
06:30 pm – 07:30 pm	Conference Dinner & Awards (Williman Room)		
07:30 pm – 08:30 pm	Keynote Speaker: Dr. Kurt Petersen: "The Rise of MEMS" (Williman Room)		

### Tuesday, June 17, 2008

08:00 am – 05:00 pm	Registration		
08:00 am – 09:00 am	Continental Breakfast (Williman Patio)		
	<b>California Mission Room</b>	<b>Parlors D&amp;E</b>	<b>Williman Room</b>
09:00 am – 10:40 am	THN-E	IPC	OPT-C
10:40 am – 11:00 am	Break		
11:00 am – 12:40 pm	THN-F	TFM	OPT-D
12:40 pm – 01:40 pm	Lunch (Williman Patio)		
01:40 pm – 03:20 pm	SMA-A	ANS-A	SFV-A
03:20 pm – 03:40 pm	Break		
03:40 pm – 05:20 pm	SMA-B	ANS-B	SFV-B
05:30 pm – 06:00 pm	Conference Closure		

- ANS** : Actuators & Suspensions (2 sessions in **Parlors D&E**)  
**BSM** : Biomedical & Smart Machines (2 sessions in **Parlors D&E**)  
**IPC** : Image Processing & Consumer Electronics (1 session in **Parlors D&E**)  
**MNT** : Micro/Nano Technologies (2 sessions in **Williman Room**)  
**OPT** : Optical Storage & Technologies (4 sessions in **Williman Room**)  
**SCT** : Servo Control Technologies (2 sessions in **Parlors D&E**)  
**SFV** : Shock & Flow Induced Vibrations (2 sessions in **Williman Room**)  
**SMA** : Spindle Motor & Acoustics (2 sessions in **California Mission Room**)  
**TFM** : Tape Storage & Flexible Media Mechanics (1 session in **Parlors D&E**)  
**THN** : Tribology & Head-Disk Interface (6 sessions in **California Mission Room**)



# ISPS'08 – 18th Annual ASME Conference on Information Storage and Processing Systems

## ANS-A: Actuators & Suspensions Session A

Tuesday, June 17, 2008, 01:40 pm – 03:20 pm

*Parlors D&E*

### Session Organizers:

*Keiji Aruga* (Fujitsu), *Chen-Chi Lin* (Western Digital), *Fu-Ying Huang* (Hitachi GST), and *Sean Kang* (Samsung)

**Session Chairs:** *Keije Aruga and Chen-Chi Lin*

01:40pm

ANS-A1

### **Modifying HDD Suspension Design to Improve Its Shock Resistance**

*Eng Teo ONG and Eng Hong ONG*, Data Storage Institute, Singapore.

02:10pm

ANS-A2

### **A Predictive Technique for Evaluating Structural Vibration Gain of Damped Suspensions in Hard Disk Drives (HDDs)**

*Mark Lowry*, Hutchinson Technology Inc., USA.

02:40pm

ANS-A3

### **Inertia Magnetic Latch Design Considering Actuator Load Unload**

*Yanning Liu, Seong Woo (Sean) Kang, Seungman (Paul) Chang*, Samsung Information Systems America, USA.

03:10pm

Adjourn

03:10pm-03:40pm

Coffee break

**ANS-B: Actuators & Suspensions Session B**

Tuesday, June 17, 2008, 03:40 pm – 05:20 pm

*Parlors D&E*

**Session Organizers:**

*Keiji Aruga* (Fujitsu), *Chen-Chi Lin* (Western Digital), *Fu-Ying Huang* (Hitachi GST), and *Sean Kang* (Samsung)

**Session Chairs:** *Fu-Ying Huang and Sean Kang*

03:40pm

ANS-B1

**Effect of Suspension Design on the Non-operational Shock Response in a Load/Unload Hard Disk Drive**

*Hao Zheng, Aravind N. Murthy, Edmund B. Fanslau Jr., and Frank E Talke*, Center for Magnetic Recording Research, University of California, San Diego, USA.

04:10pm

ANS-B2

**Shaker Performance Requirements for HGA Resonance Testing**

*Dan Weber and Rajiv Dama*, Seagate Technology, USA.

04:40pm

ANS-B3

**A Robust Latch Design**

*Lidu Huang, Scott Watson, John Edwards, Qing Zhang, Dave Myers, and Nils Larson*, Hitachi GST and Western Digital, USA.

*\* One-page abstract only*

05:10pm

Adjourn

**BSM-A: Biomedical & Smart Machines Session A**

Monday, June 16, 2008, 01:40 pm – 03:20 pm

*Parlors D&E*

**Session Organizers:**

*Jen-Yuan (James) Chang (Washington State University, USA) and Mir Behrad Khamesee (University of Waterloo, Canada)*

**Session Chair:** *Jen-Yuan (James) Chang*

01:40pm

BSM-A1

**Pattern Recognition Model to Control Walking Cycle Based on Lower Limb Sensory Information**

*Roozbeh Borjian, James Lim, William Melek, and Behrad Khamesee, University of Waterloo, Canada.*

02:05pm

BSM-A2

**Development and Modeling of a Novel Electromagnetic Damper**

*Babak Ebrahimi, Mir Behrad Khamesee, and M. Farid Golnaraghi, University of Waterloo and Simon Fraser University, Canada.*

02:30pm

BSM-A3

**Performance Evaluation of a Novel Eddy Current Damper: Frequency Domain**

*Babak Ebrahimi, Mir Behrad Khamesee, and M. Farid Golnaraghi, University of Waterloo and Simon Fraser University, Canada.*

02:55pm

BSM-A4

**Design and Development of a MEMS Comb Accelerometer for Phacoemulsification Handpiece**

*M.Mottaghi, F.Ghalichi1, H.Badri Ghavifekr, and H.Niroomand Oskui1, Sahand University of Technology, Iran.*

03:20pm

Adjourn

03:20pm-03:40pm

Coffee break

**BSM-B: Biomedical & Smart Machines Session B**

Monday, June 16, 2008, 03:40 pm – 05:20 pm

*Parlors D&E*

**Session Organizers:**

*Jen-Yuan (James) Chang (Washington State University, USA) and Mir Behrad Khamesee (University of Waterloo, Canada)*

**Session Chair:** *Mir Behrad Khamesee*

03:40pm

BSM-B1

**Portable Eeg-Based Biomedical System with Drowsiness Detection In Smart Room Control**

*J.C. Chiou , C.W. Chang, K.C. Hou, Y.J. Lin, C.T. Lin, L.W. Ko, and J.F. Chung, National Chiao-Tung University, Taiwan.*

04:05pm

BSM-B2

**Design and Control a Capsule-Robot Based on Micro-Needle Technology and Magnetically Control**

*Saman Hosseini and Mir Behrad Khamesee, University of Waterloo, Canada.*

04:30pm

BSM-B3

**Detection and Avoidance of Pole- and Bar- Shape Obstacles for a Guide-Dog Robot**

*Shozo Saegusa, Gouki Fujimoto, Yuya Yasuda ,Yoshitaka Uratani, Eiichirou Tanaka, and Toshiaki Makino, Hiroshima University and Sasebo National College of Technology, Japan.*

04:55pm

BSM-B4

**An Autonomous Barrier Application System for Agriculture Targeted Pest Control**

*Eric Allwine, Todd Lee, and Jen-Yuan (James) Chang, Washington State University, USA.*

05:20pm

Adjourn



# ISPS'08 – 18th Annual ASME Conference on Information Storage and Processing Systems

## IPC: Image Processing & Consumer Electronics Session

Tuesday, June 17, 2008, 09:00 am – 10:40 am

*Parlors D&E*

### Session Organizers:

*Alex Geerlings (Philips, Netherlands) and Jr-Yi Shen (Hitachi GST)*

**Session Chairs:** *Alex Geerlings and Jr-Yi Shen*

09:00am

IPC-1      **Experimental Identification of Abnormal Noise and Vibration of a High-Speed Polygon Mirror Scanner Motor Due to Mechanical Contact of Bearing**  
*M. G. Kim, G. H. Jang, C. J. Lee and D. O. Lim, Hanyang University and Samsung Electro-Mechanics Co., Ltd, Korea.*

09:30am

IPC-2      **Real-Time Vision-Assisted Micro-Scaled Object Identification and Tracking**  
*He Huang and Jen-Yuan (James) Chang, Washington State University, USA.*

10:00am

IPC-3      **Auto-Focusing Image Photographing Device Including Flexible Diaphragm for Mobile Phone Camera and Wireless Capsule Endoscope**  
*Byung Youn Song, Do Sun Nam, Jeon Gi Kim, Kyung Sik Shin, and Junghoon Lee, Seoul National University and MuTAS Inc., Korea.*

10:30am      Adjourn

10:40am-11:00am      Coffee break

**MNT-A: Micro/Nano Technologies Session A**

Monday, June 16, 2008, 01:40 pm – 03:20 pm

*Williman Room*

**Session Organizers:**

*Lin Wu (U Nebraska), Li Tan (U Nebraska), and Wei Xue (WSU, Vancouver)*

**Session Chairs:** *Li Tan and Lin Wu*

01:40pm

MNT-A1

***Invited Talk: Nanoparticles Secreted from Ivy Rootlets for Surface Climbing***

*Maozi Liu, Mingjun Zhang, Harry Prest, and Steve Fischer, Agilent Technologies and University of Tennessee, USA.*

02:15pm

MNT -A2

**A CMOS-MEMS Frequency Adaptive Micro-Resonator with Multiple Comb-Drive Electrodes**

*J. C. Chiou, L. J. Shieh, Y. J. Lin, and K. C. Hou, National Chiao Tung University, Taiwan.*

02:45pm

MNT -A3

**Analysis and Fabrication of Ultrasonic Inkjet Ejector**

*Min-Chun Pan, Lian-Chi Chang, Ron-An Hsiaw, and Wen-Ching Shih, National Central University and Tatung University, Taiwan.*

03:20pm

Adjourn

03:20pm-03:40pm

Coffee break

## Modified Program Schedule

### MNT-B: Micro/Nano Technologies Session B

Monday, June 16, 2008, 03:40 pm – 05:20 pm

*Williman Room*

#### **Session Organizers:**

*Lin Wu (U Nebraska), Li Tan (U Nebraska), and Wei Xue (WSU, Vancouver)*

**Session Chairs:** *Wei Xue and Li Tan*

03:40pm

*Invited Talk:* **Flexible Display Technology for the Soldier**

*E.W. Forsythe, D.C. Morton, J. Shi, US Army Research Laboratory, USA*

*G. Raupp, N. Colaneri, Flexible Display Center, Arizona State University, USA*

04:05pm

MNT-B1

**Research of Slider Behavior over Patterned Media**

*Ki-Hoon Kim, Younghyun Lee, No-Cheol Park, and Young-Pil Park, Yonsei University, Korea.*

04:30pm

MNT-B2

**Phenomenological Nanoindentation Technique in Quality Control of Data  
Transmission Optoelectronics Devices**

*Antanas Daugela, Norm Gitis, and Vladimir Gelfeindbein, Seagate Technology LLC  
and Center for Tribology Inc., USA.*

04:55pm

MNT-B3

**Actuation, Stopping, and Collection of Microboats**

*Hao Li and Cheng Luo, University of Texas at Arlington, USA.*

05:20pm

Adjourn

## OPT-A: Optical Storage & Technologies Session A

Monday, June 16, 2008, 09:00 am – 10:40 am

*Williman Room*

### Session Organizers:

*No-Cheol Park (Yonsei U, Korea), Paul C.-P. Chao (NCTU, Taiwan), and Min-Chun Pan (NCU, Taiwan)*

**Session Chair:** *Min-Chun Pan*

09:00am

OPT-A1 **Improved Gap Servo System using Brake Pulse for SIL based Near-Field Recording System**

*Joong-Gon Kim, Min-Seok Kang, Won-Ho Shin, No-Cheol Park, Hyun-Seok Yang, and Young-Pil Park, Yonsei University, Korea.*

09:25am

OPT -A2 **Vibration Analysis and Structural Dynamics Modification of Slim Optical Disk Drive**

*Seungho Lim, Kyungtae Kim, No-Cheol Park, Young-Pil Park, In-Hwan Lee, Han-Baek Lee and Ik-Joo Cha, Yonsei University and Hitachi-LG Data Storage, Korea.*

09:50am

OPT -A3 **The Research Based on Advanced SIL NFR System**

*In Gu Han, Jin Moo Park, In Sang Song, Jeong Kyo Seo, In Ho Choi, and Byung Hun Min, LG Electronics, Korea.*

10:15am

OPT -A4 **Analysis on Aberration Characteristics on SIL Based Multiple Layered NFR Optics and Discussion on Cost Effective Compensation Method of Aberration**

*Wan-Chin Kim, No-Cheol Park, Young-Pil Park, Yonsei University, Korea.*

10:40am

Adjourn

10:40pm-11:00am

Coffee break

**OPT-B: Optical Storage & Technologies Session B**

Monday, June 16, 2008, 11:00 am – 12:40 pm

*Williman Room*

**Session Organizers:**

*No-Cheol Park (Yonsei U, Korea), Paul C.-P. Chao (NCTU, Taiwan), and Min-Chun Pan (NCU, Taiwan)*

**Session Chair:** *Paul C.-P. Chao*

11:00am

OPT-B1

**Assembly and Evaluation of Solid Immersion Lens Optical Head for Dual Layer Incident Recording**

*Yong-Joong Yoon, Cheol-Ki Min, Wan-Chin Kim, No-Cheol Park, and Young-Pil Park, Yonsei University, Korea.*

11:25am

OPT -B2

**Adaptive Hybrid Tracking-Error Control for DVD Drives in Vehicle Systems**

*Chun Chien and Min-Chun Pan, National Central University, Taiwan.*

11:50am

OPT -B3

**Wavelet Based Binary Data Compression in Holographic Data Storage System**

*Jang Hyun Kim, Hyunseok Yang, Jin Bae Park, Young-Pil Park, Yonsei University, Korea.*

12:15am

OPT -B4

**Read-out and Tracking Characteristics of a Triangular Aperture Mounted Head Slider Applied a Polarized Violet Laser Source**

*Toshifumi Ohkubo, Majung Park, Masakazu Hirata, Manabu Oumi, and Kunio Nakajima, Toyo University and Seiko Instruments Inc., Japan.*

12:40pm

Adjourn

12:40pm-01:40pm

Lunch

## OPT-C: Optical Storage & Technologies Session C

Tuesday, June 17, 2008, 09:00 am – 10:40 am

*Williman Room*

### Session Organizers:

*No-Cheol Park (Yonsei U, Korea), Paul C.-P. Chao (NCTU, Taiwan), and Min-Chun Pan (NCU, Taiwan)*

**Session Chair:** *No-Cheol Park*

09:00am

OPT-C1      **Real Time Light Intensity Control Algorithm Using Digital Image Mask for the Holographic Data Storage System**

*Sang-Hoon Kim, Jang Hyun Kim, Hyunseok Yang, Joo-Youn Park, and Young-Pil Park, Yonsei University and DAEWOO Electronics Corp., Korea.*

09:25am

OPT -C2      **Tilt Compensation Method Based on Disturbance Observer for Holographic Data Storage System**

*Yong Hee Lee, Sang-hoon Kim, Jang Hyun Kim, Hyunseok Yang, Young-pil Park, and Joo-Youn Park, Yonsei University and DAEWOO Electronics Corp., Korea.*

09:50am

OPT -C3      **A Collision Protection Method by Velocity Control for SIL Based Near-Filed Recording System**

*Hyunwoo Hwang, Sang-Hoon Kim, Joong-Gon Kim, Tae-Wook Kwon, Hyunseok Yang, No-Cheol Park, and Young-Pil Park, Yonsei University, Korea.*

10:15am

OPT -C4      **Thermal Analysis of Rotary VCM Actuator for Small Form Factor Optical Disk Drive**

*Myeong-Gyu Song, Sang Yong Kim, Jung-Hyun Woo, No-Cheol Park, Young-Pil Park, and Jeonghoon Yoo, Yonsei University, Korea.*

10:40am

Adjourn

10:40pm-11:00am

Coffee break

**OPT-D: Optical Storage & Technologies Session D**

Tuesday, June 17, 2008, 11:00 am – 12:40 pm

*Williman Room*

**Session Organizers:**

*No-Cheol Park (Yonsei U, Korea), Paul C.-P. Chao (NCTU, Taiwan), and Min-Chun Pan (NCU, Taiwan)*

**Session Chair:** *No-Cheol Park*

11:00am

OPT-D1

**Precision Positioning of a Three-Axis Optical Pickup via a Double Phase-Lead Compensator Equipped with Auto-Tuned Parameters**

*Paul C.-P. Chao and J.-Y. Shen, National Chiao Tung University and Chung Yuan Christian University, Taiwan.*

11:30am

OPT -D2

**Improvement of Tolerance Characteristics of Low F/Number Compact Camera Module for Image Restoration Using Wavefront Coding**

*Sang-Hyuck Lee, No-Cheol Park, and Young-Pil Park, Yonsei University, Korea.*

12:00pm

OPT -D3

**Robust Dual-Stage and Repetitive Control Designs for an Optical Pickup with Parallel Cantilever Beams Powered by Piezo-Actuators**

*Paul C.-P. Chao, Lun-De Liao, Ming-Hsun Chung, and Jeng-Sheng Hunag, National Chiao Tung University and Chung Yuan Christian University, Taiwan.*

12:30pm

Adjourn

12:40pm-01:40pm

Lunch

**SCT-A: Servo Control Technologies Session A**

Monday, June 16, 2008, 09:00 am – 10:40 am

*Parlors D&E*

**Session Organizers:**

*Raymond de Callafon (UCSD) and Jie Yu (Western Digital)*

**Session Chair:** *Raymond de Callafon*

09:00am

SCT-A1 **Fast Prototyping of Advanced Servo Control on FPGA with Application on  
Magnetic Recording System**

*Jul Nee Teoh, Fan Hong, Wai Ee Wong, and Chunling Du, Data Storage Institute,  
Singapore.*

09:25am

SCT -A2 **An Integrated Servo Analysis Platform with Signal Generation and Vibration  
Modeling for Patterned Media Technology**

*Wai Ee Wong, Songhua Zhang, Fan Hong, and Xiaoxin Zou, Data Storage Institute,  
Singapore.*

09:50am

SCT -A3 **Optimal Seek Profile Generation with Time-Varying Weightings for Hard Disk  
Drives**

*Zhi Wang, Jr-Yi Shen, Bryan Rowan, and Pushkar Hingwe, Hitachi GST, USA.*

10:15am

SCT -A4 **An Improved PTOS Algorithm with Variable Damping**

*Abhishek Dhanda, Gene Franklin, Stanford University, USA.*

10:40am

Adjourn

10:40pm-11:00am

Coffee break



# ISPS'08 – 18th Annual ASME Conference on Information Storage and Processing Systems

## SCT-B: Servo Control Technologies Session B

Monday, June 16, 2008, 11:00 am – 12:40 pm

*Parlors D&E*

### Session Organizers:

*Raymond de Callafon (UCSD) and Jie Yu (Western Digital)*

### Session Chair: *Jie Yu*

11:00am

SCT-B1      **An Effective Observer Design for Characterization and Compensation of Periodic Disturbances**  
*Dongho Ohl, Jung Kwan Lee, and J. C. Koo, Samsung Electronics and Sungkyunkwan University, Korea.*

11:30am

SCT -B2      **Evidence of Lubricant Glassing Phenomena in Hard Disk Drive Pivot Bearings**  
*Daniel Helmick and William Messner, Carnegie Mellon University, USA.*

12:00am

SCT -B3      **Servo Systems Design for Low Sample Rate Disk Drive Systems**  
*Peng Yan, Lee Mckenzie, Reed Hanson, Todd Lyle, Brian Pollock, Priyadarshree Mathur, and Samir Mittal, Seagate Technology, USA.*

12:30pm      Adjourn

12:40pm-01:40pm      Lunch



# ISPS'08 – 18th Annual ASME Conference on Information Storage and Processing Systems

## SFV-A: Shock & Flow Induced Vibrations Session A

Tuesday, June 17, 2008, 01:40 pm – 03:20 pm

*Williman Room*

### **Session Organizers:**

*Yu-Min Lee (Western Digital), Ferdi Hendriks (Hitachi GST), Srinivas T. Tadepalli (Seagate), and Norio Tagawa (Kansai U, Japan)*

**Session Chairs:** *Yu-Min Lee and Norio Tagawa*

01:40pm

SFV-A1

### **On Taylor Vortices and Ekman Layers in Flow-Induced Vibration**

*Ferdinand Hendriks, Hitachi GST, USA*

02:05pm

SFV-A2

### **Vibration Model with Interaction Between Air and Structure for Rotating Disk Surrounded by Shroud**

*Takehiko Eguchi, Hitachi Ltd., Japan.*

02:30pm

SFV-A3

### **Mitigation of Flow Induced Vibration of Head Gimbal Assembly**

*Q.D. Zhang, T.C.S. Tan, K. Sundaravadivelu, M. A. Suriadi, G.L. Chin, and T.H. Yip, Data Storage Institute, Singapore.*

02:55pm

SFV-A4

### **Modal Contribution Analysis of a Complete Flexible Operating HDD Affecting the Head-Disk Motion due to Shock**

*C. H. Seo, K. Y. Park, and G. H. Jang, Hanyang University, Korea.*

03:20pm

Adjourn

03:20pm-03:40pm

Coffee break



# ISPS'08 – 18th Annual ASME Conference on Information Storage and Processing Systems

## SFV-B: Shock & Flow Induced Vibrations Session B

Tuesday, June 17, 2008, 03:40 pm – 05:20 pm

*Williman Room*

### **Session Organizers:**

*Yu-Min Lee (Western Digital), Ferdi Hendriks (Hitachi GST), Srinivas T. Tadepalli (Seagate), and Norio Tagawa (Kansai U, Japan)*

**Session Chairs:** *Ferdi Hendriks and Srinivas T. Tadepalli*

03:40pm

SFV-B1

### **Investigation of Viscoelastic Film Damper for Hard Disk Drive**

*J.Q. Mou, E.H. Ong, S.T. Tan, and Z. Chen, Data Storage Institute and Nanyang Technological University, Singapore.*

04:10pm

SFV-B2

### **A study of Slider Separation Modes in Operational Shock for HDD**

*Makoto Okamoto and Takehiro Ishiguro, Fujitsu Limited, Japan.*

04:40pm

SFV-B3

### **Design of Hole of a Carriage Arm of HDD to Reduce Flow Induced Vibration**

*Satomitsu Imai, Cameo Plala, Japan.*

*\* One-page abstract only*

05:10pm

Adjourn

**SMA-A: Spindle Motor & Acoustics Session A**

Tuesday, June 17, 2008, 01:40 pm – 03:20 pm

*California Mission Room*

**Session Organizers:**

*Steve Shen (U Washington), Gunhee Jang (Hanyang U, Korea), Jun-ichi Ichihara (Fujitsu Lab, Japan), and T. Jintanawan (Chulalongkorn U, Thailand)*

**Session Chairs:** *Steve Shen and Jun-ichi Ichihara*

01:40pm

SMA-A1

**Precise Measurement of Angular Position and Speed of Spindle Motor During Spin-Up By Computing Differences in Winding Current Rise Time**

*J. H. Ding and C. W. Ji, Western Digital Technologies, USA.*

02:05pm

SMA-A2

**A Study of Acoustic Noise Generating Mechanism of Small Form Factor HDDs**

*H. Zheng, J. Q. Mou, F. Gao, E. T. Ong, W. Z. Lin, and E. H. Ong, A\*STAR Institute of High Performance Computing and Data Storage Institute, Singapore.*

02:30pm

SMA-A3

**Simulating Disk Motion in Operating Shock from Frequency Response Measurements**

*Dan Blick and Li Zhou, Western Digital Technologies, USA.*

02:55pm

SMA-A4

**Development of Benchmark Drive for Investigation of EM-Noise in HDD Spindle Motors**

*Surapong Suwankawin, Thitima Jintanawan, and Pairod Singhatanadgid, Chulalongkorn University, Thailand.*

03:20pm

Adjourn

03:20pm-03:40pm

Coffee break

**SMA-B: Spindle Motor & Acoustics Session B**

Tuesday, June 17, 2008, 03:40 pm – 05:20 pm

*California Mission Room*

**Session Organizers:**

*Steve Shen (U Washington), Gunhee Jang (Hanyang U, Korea), Jun-ichi Ichihara (Fujitsu Lab, Japan), and T. Jintanawan (Chulalongkorn U, Thailand)*

**Session Chairs:** *Gunhee Jang and T. Jintanawan*

03:40pm

SMA-B1

**Exploration of Vibro-Acoustic Characteristic in FDB Motors Through EM and Sine-Swept Excited Modal Testing**

*Thitima Jintanawan, Apirat Sillapapinij, and Surapong Suwankawin, Chulalongkorn University, Thailand.*

04:05pm

SMA-B2

**Effects of Stray Magnetic Forces on Position Error Signals During a Long Seek and Settling Process**

*Tsung-Liang Wu, Chaw-Wu Tseng, Chen-Chi Lin, Shahab Hatam-Tabrizi, and I. Y. Shen, University of Washington and Western Digital Technologies, USA.*

04:30pm

SMA-B3

**A Parametric Study on Rocking Vibration of 0.85-in HDD Spindle Motors with Tie-Shaft Design**

*Tsung-Liang Wu and I. Y. Shen, University of Washington, USA.*

04:55pm

SMA-B4

**A Non-Contact Mechanical Characteristics Measurement Method for High Revolutionary Speed Precision Fluid Dynamic Bearing Rotors**

*Y. S. Ihn, S.K. Kim, M.E. Kim, Dongho Oh, and J.C. Koo, Sungkyunkwan University, Korea and 2Samsung Information Systems America, USA.*

05:20pm

Adjourn

**TFM: Tape Storage & Flexible Media Mechanics Session**

Tuesday, June 17, 2008, 11:00 am – 12:40 am

*Parlors D&E*

**Session Organizers:**

*Richard Jewett (Imation), Douglas Johnson (Imation), and Jeff McAllister (HP)*

**Session Chairs:** *Douglas Johnson and Jeff McAllister*

11:00am

TFM-1      **Design of a Dual Stage Actuator Tape Head Controller**

*Uwe Boettcher, Bart Raeymaekers, Raymond A. de Callafon, and Frank E. Talke,  
University of California, San Diego, USA.*

11:25am

TFM-2      **Development of Bank-Note Thickness Detecting Mechanism in ATM**

*You-hoon Yoon, Joon-young Kim, Donghoon Sun, and Yoon-kil Baek, 1Nautilus  
Hyosung, Korea.*

11:50am

TFM-3      **Design and Active Guiding of Tape Lateral Motion with Traveling Wave Driven  
PZT Actuator**

*Steve Jordan and Jen-Yuan (James) Chang, Washington State University, USA.*

12:15pm

TFM-4      **Method for Complete De-Convolution of a Position Error Signal**

*Jeffrey S. McAllister and Donald J. Fasen, Hewlett-Packard, USA.*

12:40pm

Adjourn

12:40pm-01:40pm

Lunch



# ISPS'08 – 18th Annual ASME Conference on Information Storage and Processing Systems

## THN-A: Tribology & Head-Disk Interface Session A

Monday, June 16, 2008, 09:00 am – 10:40 am

*California Mission Room*

### **Session Organizers:**

*Mike Suk (Samsung), Bo Liu (DSI, Singapore), Takayuki Yamamoto (Toshiba, Japan), and Junguo Xu (Hitachi Ltd.)*

**Session Chairs:** *Mike Suk & Takayuki Yamamoto*

9:00am

THN-A1      **Mechanism Study of Scratch Induced Demagnetization for Perpendicular Magnetic Disks**

*Masaru Furukawa, Junguo Xu, Yuki Shimizu, and Yukio Kato, Hitachi Ltd., Japan.*

9:25am

THN-A2      **Fluorine-ion-implanted Air-bearing Surface for Low-friction Head-disk Interface**

*Yuki Shimizu, Junguo Xu, and Noritsugu Umehara, Hitachi Ltd. and Nagoya University, Japan.*

9:50am

THN-A3      **Optimization of Micro Thermal Actuator for Flying Height Control**

*Jin Liu, Jianhua Li, Junguo Xu, and Shinobu Yoshida, Hitachi Asia Ltd. and Hitachi Ltd., Japan.*

10:15am

THN-A4      **Slider Surface Control for Ultra-High Density Recording**

*Febiana Tjiptoharsono, Leonard V. Gonzaga, Mingsheng Zhang, Wei Hua, and Bo Liu, Data Storage Institute, Singapore*

10:40am

Adjourn

10:40pm-11:00am

Coffee break



# ISPS'08 – 18th Annual ASME Conference on Information Storage and Processing Systems

## THN-B: Tribology & Head-Disk Interface Session B

Monday, June 16, 2008, 11:00 am – 12:40 pm

*California Mission Room*

### Session Organizers:

*Mike Suk (Samsung), Bo Liu (DSI, Singapore), Takayuki Yamamoto (Toshiba, Japan), and Junguo Xu (Hitachi Ltd.)*

**Session Chairs:** *Junguo Xu and Mike Suk*

11:00am

THN-B1 **Effects of Environment Temperature and Humidity on Thermal Flying Height Adjustment**

*W. D. Zhou, B. Liu, S. K. Yu, W. Hua, and C. H. Wong, Data Storage Institute, Singapore.*

11:25am

THN -B2 **LDV Investigation of Unstable Head Air Bearing Resonance**

*Bert Feliss and Ferdinand Hendriks, Hitachi GST, USA.*

11:50am

THN -B3 **Passive Acoustic Monitoring of Head Disc Interface Interactions**

*Antanas Daugela, Jason W. Riddering, Subra Nagarajan, and Zine E. Boutaghou, Seagate Technology LLC, USA.*

12:15am

THN –B4 **An Experimental Study of Designed Disk Bump to Improve the Unloading Performance in HDD**

*Yonghyun Lee, Hyung-Jun Lee, Ki-Hoon Kim, No-Cheol Park, Hyunseok Yang, and Young-Pil Park, Yonsei University and Samsung Electronics, Korea.*

12:40pm

Adjourn

12:40pm-01:40pm

Lunch

**THN-C: Tribology & Head-Disk Interface Session C**

Monday, June 16, 2008, 01:40 pm – 03:20 pm

*California Mission Room*

**Session Organizers:**

*Mike Suk (Samsung), Bo Liu (DSI, Singapore), Takayuki Yamamoto (Toshiba, Japan), and Junguo Xu (Hitachi Ltd.)*

**Session Chairs:** *Bo Liu and Junguo Xu*

01:40pm

THN-C1

**Optical Constant and the Fly Height Measurement Accuracy in Intensity Based Interferometry and Phase Shift Detection Interferometry**

*C. L. Ong, ZM Yuan, B. Liu, J. Liu J, and Yoshida Shinobu, Data Storage Institute and Hitachi Asia Ltd., Singapore.*

02:05pm

THN-C2

**Angstrom-Level Measurement of Heater-Induced Deformation on Flying Sliders**

*Christopher A. Lacey, MicroPhysics, Inc., USA.*

02:30pm

THN-C3

**The Effect of Vibration, Amplitude of Vibration, Roughness, and Speed on the Coefficient of Friction of Metals**

*J. Abdo, N. Al-Maskari, H. Al-Naabi, and S. Al-Salmi, Sultan Qaboos University, Oman.*

02:55pm

THN-C4

**Experimental Inquiries into the Lubricant Pickup in Hard Disk Drives**

*X.-C. Guo, D. J. Pocker, V. Raman, A. Spool, Q. Dai, and N. Bach, Hitachi GST, USA.*

03:20pm

Adjourn

03:20pm-03:40pm

Coffee break



# ISPS'08 – 18th Annual ASME Conference on Information Storage and Processing Systems

## THN-D: Tribology & Head-Disk Interface Session D

Monday, June 16, 2008, 03:40 pm – 05:20 pm

*California Mission Room*

### **Session Organizers:**

*Mike Suk (Samsung), Bo Liu (DSI, Singapore), Takayuki Yamamoto (Toshiba, Japan), and Junguo Xu (Hitachi Ltd.)*

**Session Chairs:** *Bo Liu and Takayuki Yamamoto*

03:40pm

THN-D1

### **Theoretical Investigations of Slider Shock Response**

*Jun-ichi Ichihara and Naozumi Tsuda, Fujitsu Laboratories Ltd., Japan.*

04:05pm

THN-D2

### **A New Evaluation Method of Surface Energy of Ultra-thin Film**

*Hiroshige Matsuoka, Katsunori Ono, and Shigehisa Fukui, Tottori University, Japan.*

04:30pm

THN-D3

### **Particulate Contamination Control of Suspension Assemblies in Hard Disk Drives: Measurement, Removal and Review of Cleanability Based on Function**

*Trichy Pasupathy, Mohammad Kazemi, and Patrick LaLonde, Hutchinson Technology Incorporated, USA.*

04:55pm

THN-D4

### **Iteration Method for Analysis of Write-Current-Induced Thermal Protrusion**

*H. Li, M. Kurita, J. G. Xu, and S. Yoshida, Hitachi Asia Ltd., Singapore and Hitachi Ltd., Japan.*

05:20pm

Adjourn

**THN-E: Tribology & Head-Disk Interface Session E**

Tuesday, June 17, 2008, 09:00 am – 10:40 am

*California Mission Room*

**Session Organizers:**

*Mike Suk (Samsung), Bo Liu (DSI, Singapore), Takayuki Yamamoto (Toshiba, Japan), and Junguo Xu (Hitachi Ltd.)*

**Session Chairs:** *Takayuki Yamamoto and Mike Suk*

09:00am

THN-E1

**Visualization of Mechanisms for Lubricant Transfer between Disk and Slider Surfaces**

*C. Mathew Mate, Hitachi GST, USA.*

09:25am

THN-E2

**Three-dimensional Deformation Analyses of the Ultra-thin Liquid Film Surface (Linearized Analyses for the Steady State)**

*Shigehisa Fukui, Keisuke Hitomi, Soichi Shimizu, Fumihiko Saeki, and Hiroshige Matsuoka, Tottori University, Japan.*

09:50am

THN-E3

**A Study of 3-axis Measurement for Detecting the Slider Dynamics during Load/Unload**

*Yonghyun Lee, Seokhwan Kim, Hyun Choi, Ki-Hoon Kim, No-Cheol Park, and Young-Pil Park, Yonsei University, Korea.*

10:15am

THN-E4

**Measuring Surface Energy Variations of Discrete Track Recording Media**

*Ralf Brunner, Izhak Etsion, and Frank E. Talke, University of California, San Diego, USA and 2Technion-Israel Institute of Technology, Israel.*

10:40am

Adjourn

10:40pm-11:00am

Coffee break

**THN-F: Tribology & Head-Disk Interface Session F**

Tuesday, June 17, 2008, 11:00 am – 12:40 pm

*California Mission Room*

**Session Organizers:**

*Mike Suk (Samsung), Bo Liu (DSI, Singapore), Takayuki Yamamoto (Toshiba, Japan), and Junguo Xu (Hitachi Ltd.)*

**Session Chairs:** *Junguo Xu and Bo Liu*

11:00am

THN-F1

**Simulation on Soft Contact Phenomena at Head Disk Interface**

*Jianhua Li and Junguo Xu, Hitachi Ltd., Japan.*

11:25am

THN-F2

**Effect of Humidity on the Interactions between Probes and Ultra-Thin Liquid Lubricant Films in Environmentally Controlled Atomic Force Microscope**

*Norio Tagawa, Jun-ichi Hatakeyama, and Atsunobu Mori, Kansai University, Japan.*

11:50am

THN-F3

**A Spherical-Pad Head Slider for Stable Low-Clearance Recording**

*Yuki Shimizu, Kyosuke Ono, Junguo Xu, Ryuji Tsuchiyama, and Hidetoshi Anan, Hitachi Ltd. and Hitachi GST, Japan.*

12:15pm

THN-F4

**The Effect of Grooves of Discrete Track Recording Media on the Touch-Down and Take-Off Hysteresis of Magnetic Recording Sliders**

*Y. Yoon and F. E. Talke, University of California, San Diego, USA.*

12:40pm

Adjourn

12:40pm-01:40pm

Lunch