

HARMST2003 Program

Sunday, June 15

1:00 – 4:00 Poster presentation set-up

4:00 – 7:30 Conference registration

5:00 – 7:00 Welcome reception – wine/beer & hors d'oeuvre

Monday, June 16

8:00	Welcome	Hruby
8:10	Lithography Session I: X-ray Lithography	Chair: Bley
8:20	Limits in X-ray Lithography (invited)	Griffiths
9:00	X-ray Masks for the LIGA Process	Desta
9:20	Development Rates of LIGA PMMA X-ray Resists	Pantenburg
9:40	Deep Sub Micron High Aspect Ratio Polymer Structures Produced by Hard X-Ray Lithography	Achenbach
10:00	Poster session introduction	Goettert
10:10	Break	
10:30	Poster Session for Lithography and Materials for HARMST	
11:30	Box Lunch	
12:20	Poster Session Continued	
1:20	Lithography Session II: X-Ray Resists	Chair: Loechel
1:30	Status and Improvement on Tall SU-8 Microstructure Patterning using X-ray Lithography	Ruhmann
2:00	Optimisation of SU-8 Processing Parameters for Deep X-Ray Lithography	Barber
2:20	Advanced Ultra-Thick Negative Photoresist with High Sensitivity For X-ray and UV Deep Lithography	Sakai
2:40	Selection of Mold Materials for Electroforming of Monolithic Two-Layer Microstructure	Chung
3:00	Moving Mask Direct Photo-Etching for 3-D Micromachining of Polytetrafluoroethylene	Nakamura
3:20	BREAK	
3:40	Materials for HARMST Session (Electroforming, Replication, Testing)	Chair: Loewe
3:50	A High Performance Nickel-Manganese Alloy for Microsystem Applications	Goods
4:10	Replication of LIGA Structures Using Microcasting	Baumeister
4:30	Application of LIGA-MA Process to Metal/Ceramics Nano-Composite Microstructure	Miyano
4:50	The Comparison of Lifetimes of Ni and Ni-PTFE Moulding Inserts With High Aspect Ratio Structure	Tian
5:10	Determination of Mechanical Properties of Slip Cast and Microcast High Aspect Ratio Microspecimens	Beck
5:30	The Role of Microstructure in the Electrical and Thermal Conductivity of Ni-Alloys for LIGA Microsystems	Graham
5:50	Adjourn General Session	
7:00	Conference Dinner at Monterey Aquarium	

Tuesday, June 17

8:00	Design and Application Session I: Prototypes and Demos	Chair: Christenson
8:10	MicroOptics Made by LIGA Technology (invited)	Mohr
8:50	Fabrication of Microneedle Array Using Inclined LIGA and Hot Embossing Process	Moon
9:10	Mass Filter and Roughing Pump for Meso Scale Mass Spectrometer Using Ultra Thick Film LIGA	Eyre
9:30	High Aspect Ratio Spiral and Helical Micro Coils for Actuator Applications	Seidemann
9:50	Fabrication of High Aspect Ratio Vertical Mirrors For Optical Switches Using Silicon Etching and Hot Emboss Processing	Shan
10:10	Poster session introduction	Saile
10:20	Break	
10:40	Poster Session for Design and Applications, Precision Engineering, Metrology & Standards, And Infrastructure	
11:30	Lunch	
12:30	Poster Session continued	
1:30	Design and Application Session II: Assembly & Packaging	Chair: Kwon
1:40	Development of Metallic Microgrippers as End Effectors for Hetrogenous Micro/Nano Assembly	Kim
2:00	Electrical and Fluid Microconnectors for Microsystems Packages	Friedrich
2:30	Incorporating Design Rules into the LIGA Technology Applied to A Fourier Transformation Spectrometer	Solf
2:50	Break	
3:15	Precision Engineering, Metrology & Standards, and Infrastructure Session	Chair: Umeda
3:20	High Aspect Ratio Ultra Precise Machining of Stainless Steel by Electrochemical Milling with Ultrashort Pulses	Gmelin
3:50	Micro-Wire EDM Techniques for Production of Microsystems in Steel and Ceramics	Schoth
4:10	Large Batch Dimensional Metrology Demonstrated in the Example of a LIGA Fabricated Spring	Aigeldinger
4:30	MODULIGA: The LIGA Process as a Modular Production Method- Current Standardization State of the LIGA Process in Germany	Hahn
4:50	Closing remarks	Hruby & Korea
5:00	Adjourn General Session	
7:00	Industrial Forum	Tolfree

Tuesday, June 17 continued

Industrial Forum

The industrial forum will be conducted as a panel discussion from 7:00 p.m. to 9:00 p.m. on Tuesday June 17. Each participant will be given five minutes for comments on commercialization of HARMST. The floor will then be open to questions and answers from the audience moderated by David Tolfree. The industrial forum panel members below have confirmed their participation, others will likely be added.

Participant	Affiliation
Holger Loewe	Institut fur Mikrotechnik Mainz GmbH
Bill Bonivert	AXSUN Technologies
Bernd Loechel	BESSY
Christian Ehrlich	Jenoptik Mikrotechnik GmbH
Andy McCandless	Mezzo Systems Inc
David Tolfree	Technopreneur