Scientific and Social Programme

International Precision Assembly Seminar

IPAS'2008

Chamonix, France
10-13 February 2008

Organised by

The University of Nottingham

EPFL

http://www.ipas2008.org

International Precision Assembly Seminar (IPAS'2008)
Scientific and Social Programme

Majestic Conference Centre, Chamonix

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SUNDAY 10TH FEBRUARY 2008	
19.30	**WELCOME RECEPTION** **Majestic Conference Centre, 241 Allée du Majestic, Chamonix**

http://www.ipas2008.org

MONDAY 11TH FEBRUARY 2008

08.00	**REGISTRATION at the Majestic Conference Centre**	
08.30	**WELCOME** **Professor Svetan Ratchev, University of Nottingham, UK**	
08.45	**KEYNOTE ADDRESS** **Denis Bubendorf and Iván Calderón, Sysmelec SA** **Title: Collaborative and Anticipative Engineering in Assembly**	
09.30	**KEYNOTE ADDRESS** **Professor Bradley Nelson, ETH Title: Making Microrobots Move**	
10.15	**COFFEE BREAK**	
10.45-12.15	**PARALLEL SESSIONS**	
	STREAM 1	**STREAM 2**
	Session: Methods for Design for Micro-Assembly ***Chair: Prof M Björkman*** Application of a DFμA Methodology to Facilitate the Assembly of a Micro/Nano Measurement Device ***C Tietje, R Leach, M Turitto, R Ronaldo, S Ratchev*** A DFA Framework for Hybrid Microsystems ***M Tichem, D Tanase*** Statistical Assemblies with Form Errors – A 2D Example ***P Adragna, H Favrelière, S Samper, M Pillet***	**Session: High Precision Packaging and Assembly Processes** ***Chair: Mr J Heilala*** Adaptive Packaging Solution for a Microlens Array placed over a Micro-UV-LED Array ***M Luetzelschwab, D Weiland, M Desmulliez*** Solder Bumping – A Flexible Joining Approach for the Precision Assembly of Optoelectronical Systems ***E Beckert, T Burkhardt, R Eberhardt, A Tünnermann*** FluidAssem - A New Method of Fluidic-Based Assembly with Surface Tension ***N Boufercha, J Sägebarth1, M Burgard, N Othman, D Schlenker, W Schäfer, H Sandmaier***
12.15	**END OF FIRST SESSIONS**	
16.45-18.15	**Session: Process Modelling for Micro-Assembly** ***Chair: Dr M Tichem*** Product-Process Ontology for Managing Assembly Specific Knowledge between Product Design and Assembly System Simulation ***M Lanz, F Garcia, T Kallela, R Tuokko*** Bridging the Gap – From Process Related Documentation to an Integrated Process and Application Knowledge Management in Micro Systems Technology ***M Dickerhof, A Parusel*** Distributed Simulation in Manufacturing using High Level Architecture ***J Rodríguez Alvarado, R V Osuna, R Tuokko***	**Session: High Precision Packaging and Assembly Processes** ***Chair: Dr S Koelemeijer*** Concepts for Hybrid Micro Assembly using Hot Melt Joining ***S Rathmann, A Raatz, J Hesselbach*** Application of Microstereolithography Technology in Micromanufacturing ***H Yang, G Tsiklos, R Ronaldo, S Ratchev*** In Situ Micro-Assembly ***R Ronaldo, T Papastathis, H Yang, C Tietje, M Turitto, S Ratchev***
19.00	**SEMINAR DINNER AT THE HOTEL DU MONTENVERS, NR CHAMONIX**	

TUESDAY 12TH FEBRUARY 2008

08.30	**KEYNOTE ADDRESS** **Markus Werro, Mikron Title: Innovation Trends in Europe's Assembly Industry**	
	PARALLEL SESSIONS	
	STREAM 1	**STREAM 2**
09.15-10.15	**Session: Methods and Solutions for Micro-Product Design** ***Chair: Dr P Lambert*** A Classification and Coding System for Micro-Assembly ***A Behera, S Kapoor, R DeVor*** A Method for Three Dimensional Tolerance Analysis and Synthesis applied to Complex and Precise Assemblies ***F Germain, D Denimal, M Giordano***	**Session: Design of Modular Reconfigurable Micro-Assembly Systems** ***Chair: Prof R Tuokko*** Strategies and Devices for a Modular Desktop Factory ***A Burisch, A Raatz, J Hesselbach*** A Decision Making Tool for Reconfigurable Assembly Lines – EUPASS Project ***F Wehrli, S Dufey, S Koelemeijer, J Jacot***
10.15	**COFFEE BREAK**	
10.45-12.15	**Session: Methods and Solutions for Micro-Product Design** ***Chair: Prof S Kapoor*** New Designs for Submillimetric Press-Fitting ***L Charvier, F Bourgeois, J Jacot*** Design and Testing of an Ortho-Planar Micro-Valve ***O Smal, B Raucent, F Ceyssens, R Puers, M De Volder, D Reynaerts*** Robust Design of a Lens System of Variable Refraction Power with respect to the Assembly Process ***I Sieber, U Gengenbach, R Scharnowell***	**Session: Design of Modular Reconfigurable Micro-Assembly Systems** ***Chair: Mr M Weinzierl*** Standardised Interface and Construction Kit for Micro-Assembly ***M Haag, S Härer, A Hoch, F Simons*** Towards a Publish/Subscribe Control Architecture for Precision Assembly with the Data Distribution Standard ***M Ryll, S Ratchev*** Smart Assembly – Data and Model Driven ***J Heilala, H Helaakoski, I Peltomaa***
12.15	**END OF FIRST SESSIONS**	
18.00-19.30	**Session: Micro-Assembly Applications** ***Chair: Prof J Jacot*** Interest of the Inertial Tolerancing Method in the case of Watch Making Micro Assembly ***M Pillet, D Denimal, P Adragna, S Samper*** Precision Assembly of Active Microsystems with a Size-Adapted Assembly System ***K Schöttler, A Raatz, J Hesselbach*** Assembly of Osseous Fragments in Orthopaedic Surgery: The Need for New Standards of Evaluation ***O Cartiaux, L Paul, P Docquier, X Banse, B Raucent***	**Session: High Precision Positioning and Feeding Techniques** ***Chair: Prof M Pillet*** Pneumatic Contactless Microfeeder: Design Optimisation and Experimental Validation ***M Turitto, C Tietje, S Ratchev*** Pneumatic Positioning System for Precision Assembly ***M Freundt, C Brecher, C Wenzel, N Pyschny*** Manufacturing of Devices for the Parallel Precision Alignment of Multiple Micro Components ***C Brecher, M Weinzierl***
20.00	**EVENING MEAL AT RESTAURANT L'IMPOSSIBLE (OPTIONAL)**	

WEDNESDAY 13TH FEBRUARY 2008

08.15	**KEYNOTE ADDRESS** **Mauricio de Campos Porath, Carl Zeiss Title: High Precision Metrology for Micromechanical Parts – the development of F25**	
09.00-10.30	**PARALLEL SESSIONS**	
	STREAM 1	**STREAM 2**
	Session: Micro-Gripping Methods and Applications ***Chair: Dr R Leach*** A Critical Review of Releasing Strategies in Microparts Handling ***G Fantoni, M Porta*** A Low Cost Coarse/Fine Piezoelectrically Actuated Microgripper with Force Measurement Adapted to the EUPASS Control Structure ***K Rabenorosoa, Y Haddab, P Lutz*** Development of a Monolithic Shape Memory Alloy Manipulator ***K Malukhin, K Ehmann***	**Session: Assembly System Integration** ***Chair: Prof E Puik*** Man - Robot Co-operation – New Technologies and New Solutions ***T Salmi, I Marstio, T Malm, E Laine*** Concept for an Industrial Ubiquitous Assembly Robot ***J Heilala, M Sallinen*** Integration of Design and Assembly using Augmented Reality ***J Sääski, T Salonen, M Hakkarainen, S Siltanen, C Woodward, J Lempiäinen***
10.30	**COFFEE BREAK**	
11.00-12.30	**Session: Micro-Gripping Methods and Applications** ***Chair: Prof K Ehmann*** Statically Determined Gripper Construction ***R Plak, R Görtzen, E Puik*** Precision Positioning down to Single Nanometres Based on Micro Harmonic Drive Systems ***A Staiger, R Degen*** Assembly of a Micro Ball-Bearing using a Capillary Gripper and a Microcomponent Feeder ***C Lenders, J Valsamis, M Desaedeleer, A Delchambre, P Lambert***	**Session: Micro-Metrology** ***Chair: Prof S Samper*** Towards a Traceable Infrastructure for Low Force Measurements ***R Leach, C Jones*** When Manufacturing Capability Exceeds Control Capability: The Paradox of High Precision Products ***S Koelemeijer, M Braun, F Bourgeois, J Jacot*** Impact Forces Reduction for Micro-Assembly ***R Plak, R Görtzen, E Puik***
12.30	**BUFFET LUNCH**	
13.30-15.30	**EUPASS PROJECT WORKSHOP** (Open to all IPAS delegates - no extra fee) **EUPASS – An Overview** (Gavin Murray, TQC) **EUPASS PV2 – Framework for Reconfiguration** (Gavin Murray, TQC) **Synthetic Design Environment and Control – Enabling rapid Configuration** (Pedro Ferreira, University of Nottingham) **Standardisation – Basis for successful interoperability** (Prof Reijo Tuokko, TUT) **Conclusions and Roundtable Discussion** (Gavin Murray, TQC)	
20.00	**EVENING MEAL AT RESTAURANT LA CALECHE (OPTIONAL)**	

SUNDAY 10TH FEBRUARY 2008	
19.30	**Welcome Reception** **Majestic Conference Centre, 241 Allée du Majestic, Chamonix**
Information	Located close to the hotels and 200 metres from the town centre. Dress code: Casual

MAJESTIC CONFERENCE CENTRE

The Majestic was originally a grand hotel built at the beginning of the last century. It has been completely renovated and very well equipped as a conference centre, while preserving its luxury atmosphere.

MONDAY 11TH FEBRUARY 2008	
19.00	**Seminar Dinner** **Hotel du Montenvers, nr Chamonix**
Information	We will travel by train to the venue. The train departs from Montenvers train station in Chamonix at 19.30. You may either meet us at the station at 19.15 or walk with us to the station from the Majestic Conference Centre (leaving at 19.00). There will be time after the evening session to return to the hotel and change before we set off. Dress Code: Casual/Warm clothes

RESTAURANT DU MONTENVERS

After a short train journey we will arrive at the fabulous resort of Montenvers – Mer de Glace, where we can look at the glacier and famous mountains before dinner. The Hotel du Montenvers was built in 1880 and the well renovated restaurant is welcoming with a warm mountain atmosphere.

TUESDAY 12TH FEBRUARY 2008	
20.00	**Evening Meal at Restaurant l'Impossible (optional)**
Information	10 minutes' walk from the town centre. Dress Code: Smart/Casual

RESTAURANT L'IMPOSSIBLE

Here we can sample the area's rich and local cuisine in the charming surroundings of an authentic farmhouse dating back to 1754. The restaurant has a selection of high-quality wines and innovative dishes.

WEDNESDAY 13TH FEBRUARY 2008	
20.00	**Evening Meal at Restaurant La Calèche (optional)**
Information	Located in the town centre. Dress Code: Casual

RESTAURANT LA CALÈCHE

This restaurant specialises in local dishes such as raclette, fondues, tartiflette and beef cooked in Savoie Red wine. It has a cosy, welcoming atmosphere.

ADDITIONAL ACTIVITIES

We hope you will enjoy your time in Chamonix. There will be opportunities to enjoy the local facilities and in particular to enjoy the snow! If you would like any assistance with booking activities or would like more details, please do not hesitate to contact us. You can also check the Chamonix website: www.chamonix.com, including the downloadable blue brochure.

In winter, Chamonix is so much more than just a ski resort and there really is something to suit all tastes in this lively alpine town.
For those who prefer the quietude of forest trails, there are many walking and snow-shoeing possibilities along the flanks of the valley. An excellent sports complex offering swimming pools, climbing wall, squash, tennis, keep fit and spa facilities, not to mention a superb ice-rink. For the more adventurous there's tandem paragliding, or you could even try your hand at dog sled driving! Further afield there are organised excursions to the "Aiguille du Midi" and the "Mer de Glace", and of course some wonderful skiing and boarding opportunities in excellent snow conditions with outstanding panoramas of the Alps. Here are some indicative rates for ski passes:

Duration	Chamonix Le Pass		Mont-Blanc « Unlimited »	
	Individual	+ 21 pers.	Individual	+ 21 pers.
4 hours ski	29,50 €	28 €	/	/
1 day	36 €	34,20 €	46 €	43,70 €
2 days	70 €	66,50 €	90 €	85,50 €
3 days	104 €	98,80 €	133 €	126,40 €
4 days	138 €	131,10 €	166 €	157,70 €
5 days	170 €	161,50 €	198 €	188,10 €
6 days	182 €	172,90 €	220 €	209 €

and indicative group prices (for more than 15 people):

	1/2 day	1 day	2 days
DOWNHILL SKI (Skis, shoes & poles)	10,50 – 17,50 €	15 - 35 €	30 - 70 €

SEMINAR ORGANISATION

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