Foreword

Industrial tools can be described as one of the most important driving forces of modern manufacturing technologies. As nowadays the production and economy can be described as turbulent, full of changes, competition, opportunities and risks, the same is valid also for tool development and production. Since all material processing and tool manufacturing activities are under severe time pressure, contemporary toolmakers use a computer supported digital world to evaluate their ideas and their processing technologies before making a real tool. For these reasons a modern computer can be viewed as one of the most efficient tools for making real tools!

New material processing and tool manufacturing technologies, virtual manufacturing, intelligence systems, rapid tooling, tools for flexible and small quantity production, management of tool making, new materials and their treatments, concurrent processes and part (re)design methods,...all these topics will be discussed during the gathering of respected specialists, engineers, researchers and scientists coming from the industry, research institutions or academia.

Conferences such as ICIT 1997, 1999, 2001, 2003 and 2005 confirmed the idea that Slovenia is a good place to invite participants from the most developed countries as well as from countries willing to be respected partners in the global
economy of the third millennium. When talking with guests of previous conferences, we heard that what is most important is the possibility of meeting people from Europe, America, and Eastern Asia and to exchange with them the knowledge and experiences of the common tool making problems.

The organisers wish to thank all the guests for their valuable contributions presenting their research efforts and successful industrial implementations. This is the best proof and confirmation that such gatherings of scientists and experts coming from different research fields are needed in order to strengthen and further develop a complex field as the tool manufacturing is.

It would be very difficult to organise a successful conference without help of other institutions. We gratefully acknowledge the support of international institutions, Slovene governmental authorities, universities, as well as many industrial companies.

Bled, September 11th – 14th 2007 Karl Kuzman
Final Programme

Tuesday, 11th September 2007

19.00 Welcome reception
   (Hotel Kompas Bled)

Wednesday, 12th September 2007

08.00 - 09.00 Registration
   (Hotel Kompas Bled)

09.00 - 09.45 Opening Ceremony (Hall A)

09.45 - 11.15 Plenary Session (Hall A)
   F. Vollertsen, H. Schulze Niehoff, H. Wielage, Z. Hu; SHEET METAL MICRO FORMING keynote paper
   M. Merklein, M. Geiger, D. Staud, U. Vogt; TAILORED HEAT TREATED BLANKS APPLIED ON CAR BODY PARTS UNDER QUASI-SERIES CONDITIONS keynote paper
   S. Phillips, J. Moore, T. Griffiths, D. J.; CREATING A TECHNICAL HUB FOR THE UK TOOLMAKING AND ALLIED INDUSTRIES keynote paper

11.15 - 12.00 Coffee Break

12.00 - 13.00 Plenary Session (Hall A)
U. Engel, M. Arbak, K. Wagner, R. Völkl; NEW MATERIALS AND SURFACE FINISHING METHODS FOR COLD FORGING TOOLS
keynote paper

K. Kuzman; NETWORKING – A KEY ISSUE FOR EFFICIENT TOOL PRODUCTION
keynote paper

13.00 - 14.30 Lunch and POSTER Presentations

14.30 - 16.10 Parallel Session (Hall A)

Metal Forming Processes and Tools I
G. Gantar; PREDICTION AND INCREASING THE STABILITY OF FORMING PROCESSES
keynote paper

A. Jerič, P. Mužič, I. Grabec, E. Govekar; LASER DROPLET WELDING OF ZINC-COATED STEEL SHEETS
invited paper

Z. Kampuš, J. Tušek; FORMING OF A MULTI-PLY SHEET
invited paper

A. Kocańda, P. Czyżewski; DETERMINATION OF SIDE FORCES IN A FORGING DIE
invited paper

V. Krušič, S. Mašera, T. Pepelnjak, K. Kuzman, T. Rodič, A. Pristovšek; THE IMPACT OF THE FORMING SYSTEM PARAMETERS ON TOOL SERVICE LIFE AND PRODUCT ACCURACY IN COLD FORGING
invited paper

14.30 - 16.10 Parallel Session (Hall B)
Tool Manufacturing I
J. Kopač, P. Kržič; INFLUENCE OF CAM ALGORITHM AND CUTTING PARAMETERS ON THE QUALITY OF THE MACHINED SURFACE
keynote paper

Management I
A. Kocov, R. Polenakovic, T. Rizov; SUPPLY CHAIN MANAGEMENT - THE KEY FOR IMPROVING MACEDONIAN SMES’ COMPETITIVENESS
invited paper
S. Phillips, J. Moore, T. Griffiths, D. J. Mynors, A. Fairweather; THE REAL COST OF TOOL, DIE AND MOULD MANUFACTURE
invited paper
T. Berlec, J. Kušar, M. Starbek; PROJECT MANAGEMENT OF A TOOL ORDER

A. Brezovar, T. Berlec, J. Kušar, M. Starbek; VIRTUAL ENTERPRISE CONNECTION IN DISTRIBUTED ENVIRONMENT

16.10 - 16.20 Coffee Break

16.20 - 17.40 Parallel Session (Hall A)

Metal Forming Processes and Tools II
M.Plancak, D.Vilotic, D. Movrin; MATERIAL FORMABILITY AT COLD UPSETTING OF CYLINDER BY DIFFERENT PLATES AS A BASE FOR METAL FORMING TECHNOLOGY DESIGN
invited paper
P. Standring, P. Holland; **THE ATTRACTIONS, BENEFITS AND DIFFICULTIES OF USING COLD ROLL FORMED SECTIONS AS PREFORMS FOR ADDITIONAL METALFORMING OPERATIONS**

invited paper

C. Drott, P. Groche, P. Holland, P. Standring; **A NEW CLASSIFICATION SYSTEM FOR THE COLD ROLL FORMING PROCESS**

F. Klocke, D. Breuer, C. Zeppenfeld; **IDENTIFICATION OF DUCTILE DAMAGE IN COLD FORMING PROCESSES USING NEURAL NETWORKS**

**16.20 - 17.40 Parallel Session (Hall B)**

**Injection Moulding Processes and Tools I**


invited paper

A. Fernandez, D. Mercado, C. Javierre, M. Muniesa; **CHARACTERIZATION OF DEFECTS OF LARGE THERMOPLASTIC PARTS DURING INJECTION AND PACKING STAGES BY MEANS OF MONITORIZED NOZZLE TO IMPROVE PARTS QUALITY**

invited paper

A. Hančič, K. Kuzman, F. Kosel, A. M. Cunha, G. Gantar; **PREDICTION OF MECHANICAL PROPERTIES OF WOOD-PLASTIC COMPOSITES BY GENERALISED METHOD OF CELLS**

invited paper
A. Fernandez, J. Aisa, J. Castany, I. Claveria; **STIFFNESS RELATION BETWEEN MACHINE AND MOLD TO REDUCE DEFECTS DURING INJECTION AND PACKING OF THERMOPLASTICS PARTS**

18.00 Banquet Dinner

*The country-inn “Lectar” (the restaurant with 185 year old tradition, (http://www.lectar.com)*

**Thursday, 13th September 2007**

09.00 - 10.40 Parallel Session (Hall A)

**Metal Forming Processes and Tools III**

J. Endou, N. Hagino, S. Katoh, S. Okudera, M. Maruyama; **DEFORMATION ON COINING FOR HERRING-BONE BEARING**

Z. Ištvanić, S. Lemeš, N. Zaimović-Uzunović; **BUCKLING MODE SHAPES IN INCREMENTAL FORMING OF SHEET METAL**

T. Pepelnjak, M. Klinc, G. Gantar, K. Kuzman; **MASTERING THE STAMPS OF STEELS WITH INCREASED STRENGTH IN SLOVENE TOOLMAKING INDUSTRY**

A. Petek, R. Fijavž, K. Kuzman; **THE IMPLEMENTATION OF INCREMENTAL FORMING TECHNOLOGY INTO REAL PRODUCTION**

U. Weidig, N. Saba, K. Steinhoff; **FUNCTIONAL GRADATION BY DIFFERENTIAL THERMO-MECHANICAL TREATMENT**
09.00 - 10.40 Parallel Session (Hall B)

Injection Moulding Processes and Tools II
I. Emri, A. Nikonov, U. Florjančič; **THE EFFECT OF PROCESSING CONDITIONS ON DURABILITY OF POLYMERIC PRODUCTS**
invited paper

B. Berginc, Z. Kampuš, M. Brezočnik, B. Šuštaršič; **NUMERICAL SIMULATION OF MIM FEEDSTOCK INJECTION MOULDING**
invited paper

D. Godec, M. Šercer, N. Šakić; **CENTRAL-COMPOSITE DESIGN FOR OPTIMIZATION OF THIN-WALLED INJECTION MOULDING IN PROTOTYPE MOULD**

K. Park, B. Kim, D. Yao; **PREDICTION AND VISUALIZATION OF BIREFRINGENCE FOR INJECTION-MOLDED PLASTIC PARTS USING 3D FE ANALYSIS**

B. Žagar, B. Nardin, D. Križaj, G. Gantar; **SYSTEM FOR ELECTRICALY DRIVEN THERMOREGULATION OF MOULDS FOR INJECTION MOULDING**

10.40 - 11.00 Coffee Break

11.00 - 12.40 Parallel Session (Hall A)

Materials I
E. Bayraktar, D. Kaplan, F. Schmit, M. Grumbach; **IMPACT TENSILE TEST: A NEW TYPE OF CRASH TEST SIMULATION FOR THIN SHEET WELDED JOINTS**
invited paper
T. Minghetti, C. Schelle, H. Huwiler, J. Kübler; NEW METAL MATRIX COMPOSITE FOR FORMING TOOLS
invited paper

V. Leskovšek, M. Jenko, B. Podgornik, D. Baksa; INFLUENCE OF DUPLEX HARD COATINGS DEPOSITED BY PACVD ON WEAR OF DROP FORGING DIES

H.J. Shin, Y.T. Yoo; THE SURFACE HARDENING CHARACTERISTICS OF H13 STEEL USING ND:YAG LASER WITH A CONTINUOUS WAVE

S. Stepišnik, M. Milfelner, R. Fijavž; INTEGRATION OF THE LASER TECHNOLOGY LENS INTO THE INDUSTRY

11.00 - 12.40 Parallel Session (Hall B)

Intelligence Systems I
A. Nestler, T. N. Dang; AGENT BASED ASSISTANCE FOR DISTRIBUTED NC INFORMATION IN DNC SYSTEMS
invited paper

R. Plettke, H. Hagenah, M. Geiger; APPLICATION OF GENETIC ALGORITHMS FOR THE OPTIMIZATION OF ACTUATOR SYSTEMS FOR LASER MICRO ADJUSTMENT
invited paper

Tool Manufacturing II
B. Denkena, V. Jivishov, R. Meyer; AN APPROACH TO REDUCE THE INFLUENCE OF TOOL WEAR ON WORKPIECE PROPERTIES DURING HARD TURNING

P. Kolar; CHOICE OF SUITABLE TOOLING SYSTEM FOR HIGH PERFORMANCE CUTTING

12.40 - 14.00 Lunch
14.00 - 15.40  Parallel Session (Hall A)

Materials II
S. Turczyn; EFFECT OF PROCESSING PARAMETERS ON THE MECHANICAL PROPERTIES OF ADVANCED HIGH STRENGTH STEEL STRIPS
V. Gagov, B. Tomov, R. Radev, E.; ABOUT THE SHEET METAL TESTING BY HYDRAULIC BULGING
T. Večko Pirtovšek, I. Peruš, G. Kugler, V. Perovnik, M. Ažman, M.; INCREASING THE HOT DEFORMABILITY OF TOOL STEELS
M. Zupančič, M. Štekar, J. Grum, V. Bratuš; UNDERSTANDING AND PREVENTING DAMAGES TO DIES OF DIE-CASTING TOOLS

14.00 - 15.40  Parallel Session (Hall B)

Computer Aided Numerical Methods I
P.F. Filz; NEW GENERATION OF INJECTION MOULDING SIMULATION SOFTWARE PROVIDES OPTIMIZED SOLUTIONS AUTOMATICALLY
invited paper
L. Botolin, S. Gazvoda, T. Maver, G. Gantar; USE OF RAPID MANUFACTURING TECHNOLOGY IN COMPREHENSIVE REHABILITATION OF A PATIENT WITH PHYSICAL BODY DISORDERS
invited paper
Poster Session

Wednesday, 12th September 2007
Thursday, 13th September 2007

09.00 - 18.00 Hotel Kompas Bled

R. Rudolf, L. Kosec, I. Anžel, T. Zupančič Hartner; MONITORING INTERNAL OXIDATION IN PURE METALS

D. Krumes, I. Vitez, S. Aračić; INVESTIGATION OF CORROSION RESISTANCE OF STEELS WITH AND WITHOUT BORIDE LAYERS

B. Grizelj, D. Grizelj, V. Juric Solto; SIMULATION OF PROCESS IN METAL FORMING
Industrial Visit

Friday, 14th September 2007

Visit to company DOMEL (http://www.domel.si/)
Lunch – Kropa
Forging museum – Kropa

General information

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