



34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION  
ENGINEERING  
September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



**DRAFT CONFERENCE PROGRAMME**

Time	DATE: September 28 <sup>th</sup> 2011 (WEDNESDAY)	
18:00 – 19:00	Participant registration	
19:00	Welcome cocktail	
Time	DATE: September 29 <sup>th</sup> 2011 (THURSDAY)	
09:00 – 10:00	Participant registration	
10:00 – 10:30	Opening ceremony	
10:30 – 11:30	Plenary session	
11:30 – 12:00	Coffee break	
12:00 – 13:30	Session A	Session B
13:30 – 15:00	Lunch break	
15:00 – 16:30	Session C	Session D
16:30 – 17:00	Coffee break	
17:00 – 18:30	Session E	Session F
20:30	Conference Dinner	
Time	DATE: September 30 <sup>th</sup> 2011 (FRIDAY)	
10:00 – 11:30	Session G	Session H
11:30 – 12:00	Coffee break	
12:00 – 13:30	Session I	Session J
13:30 – 15:00	Lunch break	
15:00 – 16:30	Session K	Session L
16:30 – 17:00	Coffee break	
17:00 – 18:30	National technology platforms of Serbia	
18:30	Closing ceremony	

Please find updated information on <http://spms.masfak.ni.ac.rs>

**VENUE**

**Tami Residence Hotel**

Durmitorska prilaz n/no

18000 Niš

Srbija

**Phone:** +381 18 50 58 00

**Fax:** +381 18 28 22 22

**E-mail:** [office@tamiresidence.com](mailto:office@tamiresidence.com)

**Web:** [www.tamiresidence.com](http://www.tamiresidence.com)



34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION  
ENGINEERING  
September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



**DRAFT PROGRAMME – DETAILS**

**September 28<sup>th</sup> 2011 (Wednesday)**

18:00 – 19:00 Participant registration

19:00 Welcome cocktail

**September 29<sup>th</sup> 2011 (Thursday)**

09:00 – 10:00 Participant registration

10:00 – 10:30 Opening ceremony

**10:30 – 10:50 Plenary session**

**SYSTEM ENGINEERING FOR SYSTEMS INTEROPERABILITY IN MANUFACTURING ENVIRONMENT**

**Prof. dr Herve Panetto**, Centre de Recherche en Automatique de Nancy (CRAN - UMR 7039),  
Nancy-University, CNRS, F-54506 Vandoeuvre les Nancy, France

Recent advances in information and communication technologies have allowed manufacturing enterprise to move from highly data-driven environments to a more cooperative information/knowledge-driven environment. Enterprise knowledge sharing (know-how), common best practices use, and open source/web based applications are enabling to achieve the concept of integrated enterprise and hence the implementation and interoperability of networked enterprises. Enterprise Integration and Interoperability in Manufacturing Systems is a key concept to face the challenges of these new environments. Integration in Manufacturing (IIM) is the first systemic paradigm to organise humans and machines as a whole system, not only at the field level, but also, at the management and corporate levels, to produce an integrated and interoperable enterprise system. Business process software and Manufacturing Execution Systems are now available to meet the requirements of this fully computerised and automated integration. Major problems remain with respect to the interface between the enterprise corporate level and the manufacturing shop floor level, so that management and operation decisions within a closed loop are facilitated to pace the production according to the life-cycle dynamics of the products, processes and humans inside and outside the enterprise. Today, networked business encounters recurrent difficulties due to the lack of interoperability between enterprise systems. The role of research in the field is to create upstream conditions of technological breakthrough to avoid that enterprise investment be simply pulled by the incremental evolution of IT offer. However, the future relies on collaboration networks that can be created among companies, people and societies in order to generate shared knowledge and wealth. System Engineering paradigm, from an architecture point of view, is an enabler to better specify systems requirements with a focus on systems interoperability. The keynote presents challenges, trends and issues that must be addressed in order to support the generation of new technological solutions and modelling paradigms for systems interoperability with a system engineering perspective.



## 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia

University of Niš, Faculty of Mechanical Engineering



**Dr. Hervé PANETTO** is Professor of Enterprise Information Systems at Nancy-University and Deputy Director of ESIAL School of Engineering in Information Technology. He teaches Information Systems modelling and development and conducts research at CRAN (Research Centre for Automatic Control), Joint Research Unit associated with CNRS. He received his PhD on production engineering in 1991 and he has been accredited for directing research (Habilitation à Diriger des Recherches) in 2006. He has strong experience in information systems modelling and database development. His research field is based on information systems modelling for enterprise applications and processes interoperability, with applications in enterprise modelling, manufacturing processes modelling, furniture data modelling. He is working in ERP and MES integration from a Business to manufacturing perspective. He is expert at AFNOR (French National standardisation body), CEN TC310 and ISO TC184/SC4 and SC5. He participated in many European projects including IMS FP5-IST Smart-fm project (awarded by IMS) and the FP6 INTEROP NoE (Interoperability Research for Networked Enterprises Applications and Software) where he was leader of the work package dealing with scientific dissemination and standardisation. He is serving as expert-evaluator for the European Commission in the domain of ICT. He is editor or guest editor of books and special issues of international journals. He is author or co-author of more than 80 papers in the field of Automation Engineering, Enterprise Modelling and Enterprise systems integration and interoperability. He is currently Chair of the IFAC Technical Committee 5.3 "Enterprise Integration and Networking".

E-mail: [herve.panetto@cran.uhp-nancy.fr](mailto:herve.panetto@cran.uhp-nancy.fr)

Homepage: [www.panetto.fr](http://www.panetto.fr)

### 10:50 – 11:10 Plenary session

#### **QUALITY MANAGEMENT – STATE OF THE ART AND FUTURE DEVELOPMENT**

**Prof. dr Vidosav Majstorović**, Faculty of Mechanical Engineering, University of Belgrade, Belgrade, Serbia

Development of the theory and practice of quality management, taking place simultaneously in two directions: (i) systems approaches to quality improvement based on the use of different techniques and models of quality management, and (ii) integration of manufacturing technology with quality control technology. The first approach involves the quality control approach to the concept of sustainable development and integrated business, while the second refers to the range of conventional metrology systems to intelligent quality models. This paper provides an overview of both these approaches, with special reference to some research results from new approaches to quality management, where for the Laboratory for production metrology and TQM, Mechanical Engineering Faculty in Belgrade.



Dr. Vidosav Majstorovic is a Full Professor at the faculty of Mechanical Engineering, University of Belgrade. He is a Professor of quality control and management and advanced machining processes. He is currently a Head of Laboratory for Production Metrology and TQM. Professor Majstorovic has published more than 500 technical papers in international conferences, journals and book chapters. He was involved in the implementation of more than 280 research and commercial projects for industries. He is one of the leaders of the



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia

University of Niš, Faculty of Mechanical Engineering



national project for integrated management systems (ISO 9000 / 14000 / 18000 / 22000). He has been a General Secretary of the National Organization for Quality since 1992, and a President and founder of Serbian Academy for Quality since 2004.

He is editor and chief of the International Journals: "Total Quality Management & Excellence" and "Production Engineering and Computers" and a chairman of the program committees of more than 22 International Conferences. He is also a Member of Editorial Boards of several International Journal from Far East, Europe and North America. He is a member of CIRP, IMEKO, IFIP, IFAC, ASQ, JUSE, and EOQ. He is the author of 27 technical books.

Prof. Vidoslav D. Majstorovich is active in research and development in the areas of metrology as well as quality control and management. He is a chairman of the International Conference on "Total Quality Management: Advanced and Intelligent Approaches - IWC TQM" which is held every two years. He is also a founder and chairman of Balkan Quality Conference "Balkan as region of Quality", first was held 2005.

E-mail: [vidosav.majstorovic@sbb.rs](mailto:vidosav.majstorovic@sbb.rs)

## 11:10 – 11:30 Plenary session

### **DESIGN RESEARCH – THE MOMENTUM AND EXPECTATIONS**

**Prof. dr Dorian Marjanović**, Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia

Humankind's way of life depends on technology since the very first tool was used by the unknown. Statements like „civilization began when humans first used technologies“ have been argued in different occasions. Technologies have been thought, applied, tested and improved by experience gained through time. Through time technologies have been designed with the same methodology the artefacts which resulted as benefits of those technologies have been designed. Everything around us is designed. Design enabled us to go beyond mere existence, to take advantage of intellectual capital, to design a way of life we know.

Over the past 30 years, engineering designers have witnessed revolutionary change in design methods— from pen and paper to two-dimensional software and now to 3-D computer-aided design, from dedicated problem oriented programming to nowadays simulation software. New technologies and skills change the profession as it seeks to fit to changes. The definition of engineering design and designers profession has stretched over the disciplinary boundaries. Mechanical engineers have actively participated in analyzing the workings of biomechanical systems, creating virtual reality environments, building nanomachines or medical nanodiagnosics. A significant part of today's CAD, CAE tools have been coded by mechanical engineers. Today, projects combine mechanical with electronic, materials, chemical, and biomechanical engineering.

The cycle of technological change grows faster than ever before. Successful engineering has always been on the leading edge of technology thus forcing beyond the dominant designs of the moment. In the moment when the bubble of unrealistic expectations has exploded we will have to rethink the way that we live to be more sustainable. In a whole all aspects of our civilisation will be redesigned the transportation systems,



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



food processing, energy management, buildings, office and household equipment and manufacturing facilities that are less polluting and less demanding of natural resources.

Engineers will continue to improve existing and develop new technologies. The challenge to rebuild the world we know will promote a need for creativity and new thinking to generate new ideas. Design was and will continue to be the bridge between the world we know and the world that will be. Building that bridge is an engineering design issue which we need to address by new research.



Dr.sc. Dorian Marjanović is Professor at University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture. He teaches Product Development and conducts research in Engineering Design. Currently he is the Vice-president of The Design Society.

E-mail: dorian@fsb.hr

11:30 – 12:00 Coffee break

## September 29<sup>th</sup> 2011 (Thursday)

### 12:00 – 13:30 Session A

#### **Machining technologies**

NEURAL NETWORK ALGORITHM FOR ON-LINE TOOL BREAKAGE DETECTION

Uros Zuper, Franc Cus

THE EFFECTS OF TOOL FLANK WEAR ON TOOL LIFE

Milan Milutinović, Ljubodrag Tanović

MATHEMATICAL MODELLING OF CUTTING FORCE AS THE MOST RELIABLE INFORMATION BEARER  
ON CUTTING TOOLS WEARING PHENOMENON

Obrad Spaić, Zdravko Krivokapić, Rade Ivanković

ANALYSIS OF STONE MICRO-CUTTING MECHANISM USING THE EXAMPLE OF GRANITE AND MARBLE  
GRINDING

Ljubodrag Tanović, Pavao Bojanić, Radovan Puzović, Mihajlo Popović, Goran Mladenović

SOFTWARE PROTOTYPE FOR ANALYZING MANUFACTURING PROCESS MODELS

Marko Kovačević, Miloš Madić, Velibor Marinković

CONTRIBUTIONS TO MANAGEMENT SWARF HIGH-SPEED MACHINE TOOLS

Diana Baila

STEEL VALVE PLATE GRINDING

Dijana Nadarević, Mirko Soković



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia

University of Niš, Faculty of Mechanical Engineering



APPLICATION OF TAGUCHI METHOD IN THE OPTIMIZATION OF FACE MILLING PARAMETERS

Milenko Sekulić, Miodrag Hadžistević, Zoran Jurković, Pavel Kovač, Marin Gostimirović

INFLUENCE OF TOOL BALANCING ON MACHINED SURFACE QUALITY IN HIGH SPEED MACHINING

Jozef Peterka, Martin Kováč, Marek Zvončan

FEM MODELING AND EXPERIMENTAL VERIFICATION OF CUTTING TOOL VIBRATIONS

Aco Antić, Milan Zeljković, Aleksandar Živković

PREDICTION OF MECHANICAL PROPERTIES AND MACHINABILITY OF CAST COPPER ALLOYS USING  
ANN APPROACH

Miloš Madić, Goran Radenković, Miroslav Radovanović

## 12:00 – 13:30 Session B

### **Surface engineering and nanotechnologies**

RESEARCH ON CAVITATION EROSION BEHAVIOR OF STAINLESS STEELS WITH CONSTANT  
CHROMIUM AND VARIABLE NICKEL CONTENT

Ilare BORDEASU, Mircea Octavian POPOVICIU, Ion MITELEA, Alin Dan JURCHELA

INFLUENCE OF SUBSTRATE ROUGHNESS ON ADHESION STRENGTH OF HARD TIN FILMS

Damir Kakaš, Branko Škorić, Aleksandar Miletić, Pal Terek, Lazar Kovačević, Marko Vilotić

MECHANICAL PROPERTIES OF TIN COATINGS DEPOSITED AT DIFFERENT TEMPERATURES BY IBAD

Damir Kakaš, Branko Škorić, Pal Terek, Aleksandar Miletić, Lazar Kovačević, Marko Vilotić

SCRATCH TESTING OF Zn COATING SURFACES

Bogdan Nedić, Desimir Jovanović, Gordana Lakić Globočki

ADI MATERIALS FOR BALLISTIC PROTECTION

Sebastian Baloš, Lepasava Siđanin, Dragan Rajnović, Olivera Erić

OBSERVATION ON THE USE OF THIN FERROMAGNETIC PLATES IN PRESENCE OF EXTERNAL  
MAGNETIC FIELD

Jasna Radulović, Predrag Petrović

THE EFFECT OF VANADIUM CONTENT ON MECHANICAL PROPERTIES AND STRUCTURE OF SELF-  
TEMPERED STEEL X160CrMo12-1

Aleksandar Todić, Dejan Čikara, Tomislav Todić, Branko Pejović, Bogdan Ćirković, Ivica Čamagić

ANALYSIS OF THE IMPACT OF EXPLOSION HARDENING PROCEDURE ON CHARACTERISTICS OF  
SURFACE LAYER OF ELEMENTS EXPOSED TO ABRASION

Radovan Ćirić, Emil Veg, Biljana Savić, Zvonimir Jugović, Radomir Slavković



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



13:30 – 15:00 Lunch break

## 15:00 – 16:30 Session C

### **Production engineering – new technologies and globalisation of engineering**

WEB-BASED COLLABORATIVE ENVIRONMENT FOR PROCESS PLANNING

Mijodrag Milošević, Velimir Todić, Dejan Lukić

ANALYSIS OF KINEMATIC CHARACTERISTICS OF MACHINE TOOLS USING A VIRTUAL MODEL

Slobodan Tabaković, Cvijetin Mladenović, Milan Zeljković, Ratko GATALO

MODELING OF DYNAMICAL BEHAVIOR SPINDLE – HOLDER – TOOL ASSEMBLY

Đorđe Čiča, M. Zeljković, G. Lakić-Globočki, B. Sredanović, S. Borojević

COMPOSITE MATERIALS SUCH AS ABSORPTION MATERIALS FOR SUPPORTING STRUCTURES OF  
MACHINES

Bogdan Ćirković, Ivica Čamagić, Nemanja Vasić

MULTIOBJECTIVE OPTIMIZATION – POSSIBILITY FOR PRODUCTION IMPROVEMENT

Predrag Ćosić, Dragutin Lisjak, Valentina Latin

RESEARCH AND DEVELOPMENT OF THE NEW GENERATION FIVE AXIS VERTICAL TURNING CENTRES

Vladimir Kvrgić, Miroslav Vasić, Vladimir Čarapić, Jelena Vidaković, Velimir Komadinić

DEPENDENCE OF SURFACE ROUGHNESS FOR SHAFT PACKING

Robert Cep, Jan Strbka, Lenka Cepova

## 15:00 – 16:30 Session D

### **Metrology, quality systems and quality management**

QUALITY CONTROL OF CONTOUR VERIFIER USING PHOTOGRAMMETRIC MEASURING SYSTEMS

Milan Blagojević, Miroslav Živković, Ana Pavlović

RESULTS OF THE ANALYSIS ON STYLUS CALIBRATION OF COORDINATE MEASURING MACHINE  
(CMM)

Miodrag Hadžistević, Janko Hodolić, Igor Budak, Đorđe Vukelić, Branko Štrbac

RESEARCH ON INFLUENCE OF THE SENSOR POSITION ON THE RESULT OF THE V-BLOCK  
CYLINDRICITY MEASUREMENT

Krzysztof Stepień

IMPROVING PRODUCT QUALITY OF SECURITY EQUIPMENT USING SPC

Milan Kolarević, Branko Radičević, Miomir Vukićević, Mišo Bjelić, Ljubinko Cvetković



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



THE ROLE OF MANAGERS IN IMPLEMENTING QUALITY MANAGEMENT STANDARDS

Vladan Radlovački, Radmila Jovanović, Bato Kamberović, Milan Delić, Srđan Vulcanović

THE POSSIBILITIES FOR IMPROVEMENT OF THE MAINTENANCE PROCESSES IN THE COMPANIES

Peđa Milosavljević, Dragoljub Živković, Predrag Janković, Srđan Mladenović

DESIGN AND TENSIOMETRIC ANALYSIS OF THE C-CLAMP FOR RAILROAD TRACKS

Bojan Rančić, Predrag Janković, Srđan Mladenović, Slaviša Planić

METROLOGICAL PRIMITIVES IN PRODUCTION METROLOGY – ONTOLOGICAL APPROACH

Slavenko Stojadinović, Vidosav Majstorović

THE USE OF MACHINE VISION TO RECOGNIZE OBJECTS

Remigiusz Labudzki

PRODUCT QUALITY CONTROL BY USING REVERSE ENGINEERING

Jelena Micevska, Zoran Spiroski, Jasmina Čaloska, Atanas Kočov

16:30 – 17:00 Coffee break

**17:00 – 18:30 Session E**

## **CAX technologies (CAD/CAM/CAPP/CAE systems) and CIM systems**

APPLICATION OF THE COMPUTER AIDED SELECTION OF OPTIMAL CNC MILLING STRATEGY

Jozef Novak-Marcincin, Miroslav Janak, Ludmila Novakova-Marcincinova, Veronika Fecova, Jozef Barna

CURRENT STATUS AND FUTURE TRENDS IN DENTAL CAM RESTORATIVE SYSTEMS

Janko Hodolič, Tatjana Puškar, Igor Bešić

COMBINED REGISTRATION OF HUMAN MUSCULOSKELETAL SYSTEM

Goran Devedžić, Sasa Ćuković, Branko Ristić, Suzana Petrović, Michele Fiorentino, Tanja Luković

OPTIMIZATION OF CAD/CAM/CAE DESIGN OF THE CONNECTING PART OF EXCAVATOR'S TOOTH  
THROUGH THE SIMULATION OF MANUFACTURING TECHNOLOGY

Radomir Slavković, Zvonimir Jugović, Ivan Miličević, Marko Popović, Radomir Radiša

IDENTIFICATION OF FACE FUNCTIONALITY WITH PROGRAM SYSTEM FOR PURPOSE OF MODULAR  
FIXTURE DESIGN

Stevo Borojević, Vid Jovišević, Gordana Globočki Lakić, Đorđe Čiča, Branislav Sredanović

FEM IN VIRTUAL REALITY CONCEPT

Dragan Marinković, Manfred Zehn



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



APPLICATIONS BY CAM AND FEM SIMULATIONS IN ESTABLISHING THE MILLING CONDITIONS FOR PARTS WITH THIN WALLS

Ionut Ghionea, Ioan Tanase, Adrian Ghionea, Cristian Tarba

TIRE TREAD MODELING FOR FEA

Nikola Korunović, Miroslav Trajanović, Miloš Stojković, Nikola Vitković, Milan Trifunović, Jelena Milovanović

AN INTERACTIVE CAD/CAE SYSTEM FOR MOLD DESIGN

Ivan Matin, Miodrag Hadžistević, Janko Hodolič, Đordje Vukelić

VIRTUAL MANUFACTURING – ADVANCED MANUFACTURING EXAMPLES

Miroslav Pilipović, Ivan Danilov, Nikola Lukić, Petar Petrović

## 17:00 – 18:30 Session F

**Education in the field of production engineering**

**Engineering ethics**

**Product development – product design**

**Production system management**

**Revitalization, reengineering and maintenance of manufacturing systems**

MANUFACTURABILITY ANALYSIS OF DIE-CAST PARTS

Miloš Ristić, Miodrag Manić, Boban Cvetanović

DESIGN OF MODULAR WHEELCHAIR FOR CHILDREN WITH CEREBRAL PALSY

Sofija Sidorenko, Jelena Micevska, Ile Mircheski

THE CRACK PROPAGATION STUDY IN ALLOYED ADI MATERIALS

Dragan Rajnović, Olivera Erić, Milica Damjanović, Sebastian Baloš, Lepasava Siđanin

COLLABORATION AND COMMUNICATION IN INTEGRATED SYSTEM OF DIGITAL MANUFACTURING

Suzana Petrović, Milan Erić, Goran Devedžić, Miodrag Manić, Saša Ćuković, Miloš Ćirović

MODELLING OF PRODUCTION SYSTEMS FOR END-OF-LIFE VEHICLES PROCESSING

Vladimir Simić, Branka Dimitrijević

RESOURCES MANAGEMENT IN WORKFLOW MANAGEMENT SYSTEMS

Dragan Mišić, Nikola Vitković, Miloš Stojković, Milan Zdravković, Miroslav Trajanović

STEAM TURBINE CASINGS REVITALIZATION

Nedim Ganibegović, Sandira Eljsan

COMPARISON OF MODERN ELECTROHYDRAULIC SYSTEMS

Tadej Tasner, Darko Lovrec



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



HYBRID CONTROLLER FOR SYSTEM MANAGEMENT OF INTEGRATED UNIVERSITY

Goran Slavković, Žarko Spasić

ESTABLISHMENT OF A LECTURE SERIES ON LIFE CYCLE DESIGN – ECODESIGN

Guenther Poszvek

EVALUATION OF PRODUCT AND PRODUCTION TECHNOLOGIES QUALITY METHOD OF SUPERIORITY  
AND INFERIORITY

Dragan Temeljkovski, Predrag Popović, Bojan Rančić, Petar Đekić

## 20:30 Conference Dinner

## September 30<sup>th</sup> 2011 (Friday)

### 10:00 – 11:30 Session G

#### **Forming and shaping technologies**

THE INFLUENCE OF RESIDUAL STRESS DISTRIBUTION ON THE SPRINGBACK PARAMETERS IN THE  
CASE OF CYLINDRICAL DRAWN PARTS

Neculai Nanu, Gheorghe Brabie

VARIABLE CONTACT PRESSURE AND VARIABLE DRAWBEAD HEIGHT INFLUENCE ON DEEP DRAWING  
OF Al ALLOYS SHEETS

Srbislav Aleksandrović, Tomislav Vujinović, Milentije Stefanović, Vukić Lazić, Dragan Adamović

DETERMINING SOME PARAMETERS IN THE OIL HYDRAULIC PROCESS OF SQUARE CUPS DEEP  
DRAWING

Bojan Rančić, Predrag Janković, Dragan Temeljkovski

ASSESSMENT THE NUMBER OF DEEP DRAWING STEPS OF CYLINDRICAL CUPS WITHOUT  
CALCULATION

Bojan Rančić, Predrag Janković, Velibor Marinković

THE INFLUENCE OF TOOL SURFACE CONDITION ON IRONING PROCESS EXECUTION

Dragan Adamović, Milentije Stefanović, Srbislav Aleksandrović, Miroslav Živković, Zvonko Gulišija,  
Slaviša Đačić

THE SIMULATION OF DISCONTINUOUS TIN BENDING IN THE PROCESS OF FORMING ROUND  
CONICAL TUBE

Zdravko Božičković, Ranko Radonjić, Ranko Božičković



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



EXPERIMENTAL ANALYSIS AND MATHEMATICAL MODELLING OF THE ROLLING FORCE

Milan Jurković, Zoran Jurković, Asim Jušić, Vesna Mandić

NUMERICAL SIMULATION OF UPSETTING OF PRISMATIC BILLETS BY V-SHAPE DIES WITH  
EXPERIMENTAL VERIFICATION

Dragiša Vilotić, Miroslav Plančak, Sergei Alexandrov, Aljoša Ivanišević, Dejan Movrin, Mladomir  
Milutinović

THE APPLICATION OF ADAPTIVE FEM METHOD TO STRESS AND STRAIN ANALYSIS OF COLD  
FORGING PROCESS

Milan Lazarević, Dejan Lazarević, Miloš Jovanović, Saša Randelović

METAL FORMING TECHNOLOGIES IN DENTAL COMPONENTS PRODUCTION

Mladomir Milutinović, Dragiša Vilotić, Tatjana Puškar, Dubravka Marković, Aljoša Ivanišević, Michal  
Potran

## 10:00 – 11:30 Session H

### **Rapid prototyping**

### **Reverse engineering**

SOME ASPECTS OF RAPID PROTOTYPING APPLICATION IN MEDICINE

Miroslav Plančak, Tatjana Puškar, Ognjan Lužanin, Dubravka Marković, Plavka Skakun, Dejan Movrin

ART AND DESIGN OPTIMIZED 3D PRINTING

Nenad Grujović, Jelena Borota, Milan Šljivić, Dejan Divac, Vesna Ranković

3D PRINTING TECHNOLOGY IN EDUCATION ENVIRONMENT

Nenad Grujović, Milan Radović, Vladimir Kanjevac, Jelena Borota, Đorđe Grujović, Dejan Divac

AUGMENTED REALITY ASSISTED PART REMOVAL FOR POWDER-BASED 3D PRINTING SYSTEMS

Nikola Milivojević, Nenad Grujović, Dejan Divac, Vladimir Milivojević, Jelena Borota

APPLIED RAPID PROTOTYPING TECHNOLOGY AND MODELING IN THE SPECIFIC PATIENT DAMAGE  
HIP REPLACEMENT

Dalibor Nikolić, Branko Ristić, Milovan Radosavljević, Nenad Filipović

APPROACHES TO AUTOMATED CREATION OF TISSUE ENGINEERING SCAFFOLDS

Milan Trifunović, Jelena Milovanović, Miroslav Trajanović, Nikola Korunović, Miloš Stojković

3D DIGITIZING FREE FORM SURFACES BY OPTICAL TRIANGULARING LASER SCANNING

Radomir Vukasojević, Simo Saletić, Željko Raičević

QUALITY 3D SURFACE RECONSTRUCTION BASED ON POINT CLOUD GENERATED BY OPTICAL  
MEASURING TECHNIQUES

Milan Blagojević, Miroslav Živković, Bojana Rosić



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



## TOWARDS DIGITAL TEMPLATE FOR ARTIFICIAL HIP IMPLANTS SELECTION

Goran Devedžić, Suzana Petrović, Saša Ćuković, Branko Ristić, Zoran Jovanović, Miloš Ćirović

## METHODS FOR CREATING GEOMETRICAL MODEL OF FEMUR ANATOMICAL AXIS

Nikola Vitković, Jelena Milovanović, Miroslav Trajanović, Nikola Korunović, Miloš Stojković,  
Miodrag Manić

## METHOD FOR CREATING 3D SURFACE MODEL OF THE HUMAN TIBIA

Marko Veselinović, Dalibor Stevanović, Miroslav Trajanović, Miodrag Manić, Stojanka Arsić, Milan  
Trifunović, Dragan Mišić

## COMPUTER BIOMECHANICAL ANALYSIS OF SPECIFIC TOOTH FOR DIFFERENT APPLIED LOADING

Dejan Petrović, Marko Anđelković, Ljiljana Tihaček-Šojić, Nenad Filipović

11:30 – 12:00 Coffee break

### 12:00 – 13:30 Session I

#### **Automatization, robotization and mechatronics**

#### **IT and artificial intelligence in production engineering**

##### WIRELESS SENSOR NETWORK APPLICATION IN MONITORING OF MACHINING OPERATIONS

Živana Jakovljević, Miroslav Pajić, Dragan Aleksandrić, Dragan Milković

##### IMPLEMENTATION OF PALLET LOADING METHODS AND VIRTUAL REALITY TO THE NEW SOFTWARE PRODUCT

Dušan Kravec, Marian Tolnay, Ondrej Staš, Michal Bachraty

##### LAYOUT DESIGN OF VACUUM EFECTOR HEAD FOR MANIPULATION WITH FLOPPY MATERIALS

Jan Slamka, Marian Tolnay, Michal Jedinak

##### DC SERVO MOTORS CONTROL OF CNC MACHINES BY SLIDING MODE

Vladislav Blagojević, Miodrag Stojiljković, Milorad Rančić

##### COMPLIANCE MODELING AND IDENTIFICATION OF 5-AXIS VERTICAL ARTICULATED ROBOT FOR MACHINING APPLICATIONS

Dragan Milutinović, Miloš Glavonjić, Nikola Slavković, Saša Živanović, Branko Kokotović, Zoran Dimić

##### INVESTIGATION AND ADAPTIVE NEURO-FUZZY ESTIMATION OF MECHANICAL /ELECTRIAL PROPERTIES OF CONDUCTIVE SILICONE RUBBER

Dalibor Petković, Nenad Pavlović



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



TOWARDS A CONCEPTUAL DESIGN OF AN INTELLIGENT MATERIAL TRANSPORT BASED ON MACHINE LEARNING AND AXIOMATIC DESIGN THEORY

Milica Petrović, Zoran Miljković, Bojan Babić, Najdan Vuković, Nebojša Čović

SOFTWARE SOLUTION OF REENGINEERING MODEL OF TECHNOLOGICAL PROCESSES OF SMALL ENTERPRISES

Milan Erić, Miladin Stefanović, Branko Tadić, Slobodan Mitrović

ONTOLOGY-BASED SUPPLY CHAIN PROCESS CONFIGURATION

Milan Zdravković, Miroslav Trajanović, Herve Panetto, Alexis Aubry, Mario Lezoche

PREDICTION OF THE NONLINEAR STRUCTURAL BEHAVIOUR BY DIGITAL RECURRENT NEURAL NETWORK

Vesna Ranković, Nenad Grujović, Dejan Divac, Nikola Milivojević, Konstantinos Papanikolopoulos, Jelena Borota

ERP IMPLEMENTATION STRATEGIES FOR MANUFACTURING COMPANIES IN E-BUSINESS ENVIRONMENT

Darko Stefanović, Andraš Anderla, Cvijan Krsmanović, Aleksandar Ivić

## 12:00 – 13:30 Session J

### **Nonconventional technologies (Advanced machining technologies)**

SURFACE ROUGHNESS AT ABRASIVE JET ENGRAVING OF GLASS PARTS

Laurențiu Slatineanu, Margareta Coteata, Miroslav Radovanović, Stefan Potarniche, Lorelei Gherman, Irina Besliu

THE RESEARCH OF DISCHARGE ENERGY IN EDM PROCESS

Marin Gostimirović, Pavel Kovač, Milenko Sekulić, Borislav Savković

THE EFFECTS OF SHOT PEENING ON THE FATIGUE LIFE OF MACHINE ELEMENTS

Dragan Adamović, Milentije Stefanović, Branislav Jeremić, Srbislav Aleksandrović

ENERGY BALANCE OF THE PLASMA ARC CUTTING PROCESS

Anđela Lazarević, Miodrag Manić, Dragoljub Lazarević

MODEL FOR OPERATING COSTS OF PLASMA CUTTING

Srđan Mladenović, Miroslav Radovanović

CUT QUALITY IN ABRASIVE WATER JET CUTTING

Predrag Janković, Miroslav Radovanović, Jelena Baralić

THE COMPLEXITY OF DEFINING THE QUALITY OF LASER CUTTING

Bogdan Nedić, Jelena Baralić, Miroslav Radovanović



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



MACHINING PARAMETERS EFFECT ON THE JET RETARDATION IN ABRASIVE WATER JET MACHINING

Jelena Baralić, Bogdan Nedić, Predrag Janković

13:30 – 15:00 Lunch break

**15:00 – 16:30 Session K**

## **Joining and casting technologies**

### **Processing of nonmetal materials (plastic, wood, ceramics, ...)**

ANALYSIS AND DESIGN OF HIGHLY EFFICIENT METHODS OF TREATMENT

Michael Kheifetz, Natalia Pozilova, Alexander Pynkin, Leonid Akulovich

DESIGN OF TECHNOLOGICAL COMPLEXES FOR HIGHLY EFFICIENT TREATMENT

Vladimir Borodavko, Gaiko Victor, Viacheslav Kroutko, Michael Kheifetz, Elena Zeveleva

INFLUENCE OF PRODUCTION PROCESS ON FATIGUE PROPERTIES OF HEAVY CASTINGS - A CASE STUDY

Radivoje Mitrović, Dejan Momčilović, Olivera Erić, Ivana Atanasovska

MODELLING DATABASE OF QUALIFIED WELDERS ACCORDING TO STANDARD SRPS EN 287-1:2008

Dušan Jovanić, Željko Eremić, Miloš Jovanović

MECHANICAL PROPERTIES OF WELDED JOINTS AT STEEL TUBES WITH SQUARE CROSS SECTION

Andreja Ilić, Danica Josifović, Vukić Lazić, Lozica Ivanović

DETERMINATION OF OPTIMUM TEMPERING TEMPERATURE IN HARD FACING OF THE FORGING DIES FOR WORKING AT ELEVATED TEMPERATURES

Vukić Lazić, Dragan Milosavljević, Srbislav Aleksandrović, Rajko Čukić, Božidar Krstić, Gordana Bogdanović

SELECTION OF THE WELDING TECHNOLOGY OF RELIABLE ASSEMBLIES USING GMAW PROCESS

Vukić Lazić, Dragan Milosavljević, Srbislav Aleksandrović, Rajko Čukić, Božidar Krstić, Gordana Bogdanović

AN OVERVIEW ON FRICTION STIR WELDING OF THE AL 2024 T351

Dragan Milčić, Aleksandar Živković, Miroslav Mijajlović

DETERMINATION OF TENSILE PROPERTIES OF WELDED JOINTS – INFLUENCE OF SPECIMEN GEOMETRY

Nenad Gubelj, Bojan Međo, Jozef Predan, Marko Rakin, Goran Radenković, Aleksandar Sedmak

MANUFACTURING AND CHARACTERISATION OF FLAKES MADE BY SOFT LITHOGRAPHY TECHNIQUE

Anka Trajkovska Petkoska



# 34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION ENGINEERING

September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



INDUSTRIALIZATION OF EASY BOOM

Rok Justin, Davorin Kramar, Janez Kopač, Mirko Soković

**15:00 – 16:30 Session L**

## **Tribology**

PROPOSAL OF A NEW FRICTION TESTING METHOD FOR BULK METAL FORMING

Miroslav Plančak, Igor Kačmarčik, Dejan Movrin, Đorđe Čupković

COMPARISON OF CONVENTIONAL AND NEW LUBRICANTS FOR COLD FORMING

Plavka Skakun, Igor Kačmarčik, Tomaž Pepelnjak, Ognjan Lužanin, Aljosa Ivanišević, Mladomir Milutinović

IMPORTANCE OF TRIBOLOGICAL CONDITIONS AT MULTI-PHASE IRONING

Milentije Stefanović, Slaviša Đačić, Srbislav Aleksandrović, Dragan Adamović

EVALUATION OF PHYSICAL AND CHEMICAL CHANGES IN HYDRAULIC OIL USING ON-LINE SENSORS

Vito Tič, Darko Lovrec

USE OF ON-LINE CONDITION MONITORING SYSTEM ON HYDRAULIC MACHINES

Darko Lovrec, Vito Tič

STUDY ON SURFACE ROUGHNESS MINIMIZATION IN TURNING OF POLYAMIDE PA-6 USING TAGUCHI METHOD

Dragoljub Lazarević, Predrag Janković, Miloš Madić, Andjela Lazaravić

WEAR BEHAVIOUR OF Cr HARD COATINGS FOR COLD FORMING TOOLS UNDER DRY SLIDING CONDITIONS

Slobodan Mitrović, Miroslav Babić, Dragan Adamović, Fatima Živić, Dragan Džunić, Marko Pantić

INFLUENCE OF WEAR OF CUTTING ELEMENTS OF CONVEX MILLING CUTTERS ON PROCESSED SURFACE TOPOGRAPHY

Ivan Sovilj-Nikić, Bogdan Sovilj, Stanislaw Legutko, Sandra Sovilj-Nikić, Ivan Samardžić, Ivan Kolev

INFLUENCE OF FRICTION COEFFICIENT ON WORKPIECE ROUGHNESS IN RING UPSETTING PROCESS

Marko Vilotić, Damir Kakaš, Aleksandar Miletić, Lazar Kovačević, Pal Terek

FRICTION FORCE MICROSCOPY OF DEEP DRAWING MADE SURFACES

Božica Bojović, Dušan Kojić, Zoran Miljković, Bojan Babić, Milica Petrović

16:30 – 17:00 Coffee break



34<sup>th</sup> INTERNATIONAL CONFERENCE ON PRODUCTION  
ENGINEERING  
September 28-30 2011, Niš, Serbia  
University of Niš, Faculty of Mechanical Engineering



**17:00 – 18:30 Plenary session**

**NATIONAL TECHNOLOGY PLATFORMS OF SERBIA**

**Petar Petrović, Vladimir Milačić**, Faculty of Mechanical Engineering, University of Belgrade,  
Belgrade, Serbia

ROUND TABLE: How the National technology platforms can increase production

18:30 Closing ceremony