



International Conference on Innovative Technologies, IN-TECH 2012,  
Rijeka, 26. - 28.09.2012



## Schedule of IN-TECH Conference 2012

Main Hall, 27. September 2012.		
9:20 - 9:40	Opening speech	
Invited lectures		
9:50 – 10:10	Miroslav Plancak, Dejan Movrin, Zlatan Car, Dragiša Vilotić, Igor Kacmarcik and Marko Kršulja	BI-METALLIC COLD BACKWARD EXTRUSION – NUMERICAL SIMULATION WITH EXPERIMENTAL VERIFICATION
10:10 – 10:30	Jan Suchánek and František Černý	INFLUENCE OF IBAD SINx COATINGS ON TRIBOLOGICAL PROPERTIES OF P/M HSS

Hall A, 27. September 2012.		
11:00-11:20	Igor Kacmarcik and Branko Štrbac	ANALYSIS OF BULK METAL FORMING BY UBET – CASE STUDIES
11:20 - 11:40	Lubov Stroganova and Daria Litvina	APPLICATION OF SPACE TELEMEDICINE TECHNOLOGY IN MANAGING EMERGENCIES ON THE GROUND
11:40 - 12:00	Kitti Mueangtoom	AN APPLICATION OF PLANT PATHOGENS, PHYTOPHTHORA SPP. BIOLOGICAL CONTROL BY ANTAGONISTIC BACTERIA IN DURIAN FIELD, UTTARADIT PROVINCE, THAILAND.
12:00 - 12:20	Peter Berk, Denis Stajanko, Miran Lakota, Peter Vindiš and Jurij Rakun	SYNTHESIS OF A FUZZY MODEL FOR THE PLANT PROTECTION SYSTEM IN THE APPLE ORCHARD
12:20 - 12:40	Abdelnaser Omran, Egbal Elmsaad and Mohd Rodzi Ismail	EFFECT OF TYPES AND THICKNESS OF LOCAL EVAPORATIVE COOLING PADS INSIDE THE GREENHOUSES IN SUDAN
12:40 - 13:00	Marian Klucik, Ladislav Jurisica, Peter Paszto, Andrej Babinec, Jaroslav Hanzel and Jozef Rodina	THE SEARCH FOR OPTIMAL TRAJECTORIES OF THE WELDING TOOL IN THE AUTOMATIC WELDING LINE USING EVOLUTIONARY COMPUTATION
13:00 - 14:30	Lunch	
14:30 - 14:50	Mladen Crneković, Davor Zorc and Zoran Kunica	RESEARCH OF MOBILE ROBOT BEHAVIOR WITH EMIR
14:50 - 15:10	Peter Pásztó, Marian Klúčik, Martin Smolák, Luboš Chovanec and Peter Hubinský	MOBILE ROBOT NAVIGATION WITH ANDROID DEVICE USING OPENCV
15:30 - 15:50	Jaroslav Hanzel, Marian Klúčik, František Duchoň and Jozef Rodina	EVALUATION AND THE USE OF GPS RECEIVERS FOR SMALL MOBILE ROBOTS IN LOCAL COORDINATE SYSTEM
15:50 - 16:10	Hiticas Ioan D-Tru, Marin Daniel and Mihon Liviu Nicolae	INCREASING OF THE INTERNAL COMBUSTION ENGINES PERFORMANCES THROUGH THE INTAKE MANIFOLD SYSTEM
16:10 - 16:30	Hiticas Ioan D-Tru, Marin Daniel and Mihon Liviu Nicolae	EXPERIMENTAL RESEARCH CONCERNING THE POLLUTION OF AN INTERNAL COMBUSTION ENGINE WITH INJECTION OF GASOLINE, IN CONDITIONS OF CHANGING THE FUEL
16:30 - 16:45	Pause	
16:45 - 17:05	Goran Maus, Tihana Galinac Grbac and Bojana Dalbelo Bašić	OVERVIEW OF SEARCH-BASED OPTIMIZATION ALGORITHMS USED IN SOFTWARE ENGINEERING

Hall B, 27. September 2012		
11:00-11:20	Csaba Gyenge	NEW TECHNOLOGY FOR VARIABLE PITCH AND VARIABLE SCREW PROFILE WORMS MANUFACTURING
11:20 - 11:40	Damir Kolić, Richard Lee Storch and Nikša Fafandjel	VALUE STREAM MAPPING METHODOLOGY FOR PRE-ASSEMBLY STEEL PROCESSES IN SHIPBUILDING
11:40 - 12:00	Maja Djogo, Milena Stosic, Dusan Milovanovic, Jelena Radonic, Ivana Mihajlovic and Zoran Cepic	PRELIMINARY PHYSICO-CHEMICAL CHARACTERIZATION OF WASTEWATER FROM THE FARM IN VOJVODINA REGION, SERBIA
12:00 - 12:20	Nataša Jovčić, Jelena Radonić, Maja Turk Sekulić, Mirjana Vojinović Miloradov, Srđan Kovačević and Zoran Čepić	SEASONAL AND SPATIAL VARIATIONS OF PARTICLE-BOUND POLYCYCLIC AROMATIC HYDROCARBONS IN THE CITY OF NOVI SAD, SERBIA
12:20 - 12:40	Ivana Česáková and Miroslav Zetek	INFLUENCE OF THE CUTTING EDGE RECTIFICATION OF THE CIRCULAR INSERTS FROM CERMET ON THEIR EFFICIENCY
12:40 - 13:00	János Kundrák, Károly Gyáni, István Deszpoth and István Sztankovics	TECHNOLOGY PLANNING OF HARD TURNING IN CASE OF ROTATIONAL FEED
13:00 - 14:30	Lunch	
14:30 - 14:50	Claus Emmelmann and Juan Pablo Calderón Urbina	PROCESS DESIGN OF ULTRA-SHORT PULSE LASER ABLATION BY MODERN QUALITY-ORIENTED DESIGN OF EXPERIMENTS
14:50 - 15:10	Vilmos Csala, Sándor Markos and Tibor Szalay	COMPARATIVE ANALYSIS OF THREE MICRO-HOLE MACHINING TECHNOLOGY
15:30 - 15:50	Tina Kegl	NACRE DESIGN AS INSPIRATION FOR OPTIMAL DESIGN OF ROOF
15:50 - 16:10	Werner Hufenbach, Robert Schirner and Manuela Andrich	INTRA- AND INTERLAMINAR SHEAR BEHAVIOUR OF TEXTILE COMPOSITES TESTED WITH V-NOTCHED RAIL SHEAR TEST METHOD
16:10 - 16:30	Denny Schmidt, Günther Lange and Robert Albrecht	INVESTIGATION TO DISTRIBUTION OF ADDITIVES IN OPEN- AND CLOSED-CELL ALUMINUM FOAM
16:30 - 16:45	Pause	
16:45 - 17:05	Laszlo Lengyel and Hassan Charaf	VALIDATING DOMAIN-SPECIFIC PROPERTIES WITH GRAPH TRANSFORMATIONS
17:05 - 18:25	Ljiljana Popovic, Srđjan Popov, Djordje Cosic and Dusan Sakulski	IMPACT OF VISUALIZATION ON DATA AVAILABILITY



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<b>September 28 2012.</b>		
<b>Hall A, 28. September 2012</b>		
<b>Invited lecture</b>		
<b>08:30 - 08:50</b>	N. Bulic, D.Sumina and Z. Car	DSP-BASED CONTROL SYSTEM FOR EXCITATION CONTROL OF SYNCHRONOUS GENERATOR

<b>Hall A, 28. September 2012</b>		
08:50-09:10	Marko Kegl, Stanislav Pehan and Breda Kegl	OPTIMIZATION OF A DIESEL FUEL INJECTION SYSTEM USING BIOFUEL
09:10 - 09:30	Robert Cep, Adam Janasek, Jana Petru, Lenka Cepova and Michal Hatala	EXPERIMENTAL INFLUENCE VERIFICATION OF THERMAL AND MECHANICAL SHOCKS ON CUTTING EDGE DURING IRREGULAR INTERRUPTED CUTTING
09:30-09:50	Elizaveta Davydova and Lubov Stroganova	MATHEMATICAL METHODS IN ENSURING SECURITY DURING THE LAUNCH OF MANNED SPACECRAFT.
10:10-10:30	Sergey Shevtsov, Igor Zhilyaev, Vladimir Akopyan and Arcady Soloviev	IDENTIFICATION OF THE DAMAGE IN THE BEAM-LIKE STRUCTURE ON THE BASIS OF TIMOSHENKO BEAM MODEL
<b>10:30 - 11:00</b>	<b>Pause</b>	
11:00-11:20	Silviu Darie	PROFESSIONAL SOFTWARE FOR HARMONIC ANALYSIS
11:20 - 11:40	Stanislav Gil, Boguslaw Gradoń and Wojciech Bialik	ENERGY BALANCE OF HYBRID SOLAR HEATING AND COOLING SYSTEM
11:40 - 12:00	Peter Bencs, Szilard Szabo and Daria Oertel	SIMULTANEOUS MEASUREMENT OF VELOCITY AND TEMPERATURE FIELD DOWNSTREAM OF A HEATED CYLINDER
12:00 - 12:20	Szilard Szabo, Peter Bencs and Andras Farkas	APPLICATION OF THERMOGRAPHY TECHNIQUE FOR SURFACE TEMPERATURE VISUALIZATION OF A HEATED CYLINDER
12:20 - 12:40	Yiming Yao, Erik Ström and Xin-Hai Li	EFFECT OF SINTERING ATMOSPHERE ON SURFACE AND HIGH-TEMPERATURE OXIDATION OF PRESSURE-LESS SINTERED MOSI <sub>2</sub> -ZRO <sub>2</sub> COMPOSITE
12:40 - 13:00	Basel Alsayed	USING ENERGY CONVERSION IN A SOLAR GENERATOR
<b>13:00 - 14:30</b>	<b>Lunch</b>	
14:30 - 14:50	Stanislav Pehan, Marko Kegl and Breda Kegl	OPTIMAL DESIGN OF A GASOLINE ENGINE
14:50 - 15:10	Ivan Sterpin and Domagoj Lanc	FEM SIMULATION OF STRUCTURAL BEHAVIOUR OF LAMINATED COMPOSITE PLATE
15:30 - 15:50	Dominik Pesa and Domagoj Lanc	NUMERICAL MODELING OF PRESSURE VESSEL UNDER CREEP REGIME
15:50 - 16:10	Marko Kršulja, Petr Roškanin, Jan Kudláček, Loreta Pomenić and Zlatan Car	INVESTIGATION OF COATINGS FRICTION COEFFICIENT USED IN PRODUCTION OF DEEP DRAWN PACKAGING CANS

<b>Hall B, 28. September 2012</b>		
08:50-09:10	Jan Kudlacek, Petr Chabera, Tomaz Pepelnjak and Zlatan Car	MATHEMATICAL MODELLING OF SURFACE GREASE DEPOSITS
09:10 - 09:30	Tomaž Pepelnjak, Sanja Smoljanić and Robert Zakrajšek	INFLUENCE OF STRAIN RATE ON COLD SHEET METAL FORMING
09:30-09:50	Khalid Alsaif, Abdulmohsen Albedah, Faycal Benyahia and Mosaad Foda	SUPPRESSION OF FLUTTER OF AN AIRFOIL-FLAP WING USING ACTIVE CONTROL
10:10-10:30	Viktoria Dr. Mannheim and Zoltan Dr. Simenfalvi	LCA AND NEW MATHEMATICAL METHOD FOR THERMIC TREATMENT PROCESSES BY INDUSTRIAL ORGANIC WASTE
<b>10:30 - 11:00</b>	<b>Pause</b>	
11:00-11:20	Ivan Volarić, Jonatan Lerga, Viktor Sučić, Irena Orović and Srdjan Stanković	MODIFICATION OF THE ICI RULE APPLIED TO SIGNAL DENOISING
11:20 - 11:40	Damir Malnar, Victor Susic and Srdjan Stankovic	NOISE ANALYSIS OF THE CROSS WIGNER-VILLE DISTRIBUTION BASED INSTANTANEOUS FREQUENCY ESTIMATION METHOD
11:40 - 12:00	Salwa Abdel Bary	USE THE METHODOLOGY OF USER CENTERED DESIGN FOR LEARNING FURNITURE DESIGN
12:00 - 12:20	Janos Kundrak and Gyula Varga	ENVIRONMENTAL LOAD REDUCING IN HARD MACHINING
12:20 - 12:40	Janos Kundrak, Istvan Deszpoth and Viktor Molnar	COMPARATIVE EXAMINATIONS FOR THE MACHINING OF HARD SURFACES
12:40 - 13:00	Razvan Magureanu, Sergiu Ambrosi and Cristina Lupu	ADVANCED MEASUREMENTS FOR CONTROL AND PROTECTION OF SMART HYDROPOWER SYSTEMS
<b>13:00 - 14:30</b>	<b>Lunch</b>	
14:30 - 14:50	Karin Gong	INVESTIGATION OF THE SUBSURFACE LAYER OF N13AL-BASED ALLOY AND ITS COMPOSITES INDUCED BY FRICTION
14:50 - 15:10	Melissa Bradley and Matthew Cathell	INNOVATIVE NANOFIBER FILTRATION MATERIALS OF THE BIOPOLYMER ALGINATE FOR SEQUESTRATION OF DISSOLVED LEAD FROM WATER
15:30 - 15:50	Ottó Botond Lőrinczi, Petra Aradi and Tibor Szalay	FORCE CONTROLLED GRASPING IN A TWO FINGER ROBOTIC HAND
15:50 - 16:10	Jan Kutlwašer, Josef Sklenička, Eliška Samiecová and Miroslav Zetek	OBSERVATION OF LASER BEAM HARDENED LAYER HARDNESS USING CUTTING FORCE MEASUREMENT
16:10 - 16:30	Predrag Šaša, Srdan Skok and Vedran Kirinčić	URBAN ELECTRIC VEHICLE DEVELOPMENT AS PART OF SMART GRID

<b>Main Hall, 28. September 2012.</b>		
<b>18:30 - 18:30</b>	<b>Closing speech</b>	Z. Car; J. Kudlacek



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Poster Section IN-TECH 2012

Natalia Okhapkina and Lubov Strogonova	USE OF ONBOARD SHORT ARM HUMAN CENTRIFUGE TO CREATE ARTIFICIAL GRAVITY
Stefaniuk Ireneusz and Potera Piotr	MEASUREMENTS OF EPR SPECTRA FOR THE POWDERS USED IN CERAMIC CORES AND FORMS IN THE AEROSPACE INDUSTRY
Ireneusz Stefaniuk, Piotr Potera and Iwona Rogalska	THE EPR MEASUREMENTS OF THE CERAMICS CORES USED IN AIRCRAFT INDUSTRY OBTAINED BY HIGH PRESSURE INJECTION METHOD
Roman Zalusky, Daniela Durackova and Vladimir Sedlak	REDUCTION OF CHIP AREA FOR FEED-FORWARD NEURAL NETWORKS WITH USE THE SPECIAL MULTIPLICATION BY AND GATE
Nikita Markov, Paul Fomkin, Alexander Ermakov and Lubov Strogonova	THE DYNAMIC COMPONENT OF THE PATTERN RECOGNITION SYSTEM OF MICROORGANISMS UNDER MICROGRAVITY CONDITIONS.
Nikita Markov, Lubov Strogonova and Paul Fomkin	THE DYNAMIC COMPONENT OF THE PATTERN RECOGNITION SYSTEM OF MICROORGANISMS
Nipon Pisutpaisal and Ubonrat Sirisukpoca	POTENTIAL APPLICATION OF MICROBIAL FUEL CELLS AS WATER QUALITY MONITORING DEVICE
Damir Godec, Ines Kramarić and Mladen Šercer	APPLICATION OF REVERSE ENGINEERING IN THE DEVELOPMENT OF POLYMER PRODUCTS
Željka Milanović, Ivan Marasović and Vlasta Zanchi	ANALYSIS OF PD RESPONSE ON DIFFERENT INPUT VOLTAGES AND INCIDENT LIGHT WAVELENGTHS
Branka Nakomčić-Smaragdakis, Zoran Čepić, Tijana Stajić, Maja Turk-Sekulić, Maja Stupavski and Maja Djogo	CONDITIONS FOR DEFINING AND A BRIEF OVERVIEW OF THE TECHNICAL SOLUTIONS FOR DESULPHURIZATION FACILITY AND NITROGEN OXIDES EMISSIONS REDUCTION IN POWER PLANT NIKOLA TESLA
Joa˜o Galva˜o, Licinio Moreira, Elson Silva and Mario Neto	POLI_ENERGY: EFFICIENCY AND SUSTAINABLE ENERGY FOR INDUSTRY
Luca Dassa and Alessandro Copeta	PRELIMINARY CALIBRATION AND FUTURE DEVELOPMENTS OF A MINIATURIZED TENSILE TEST DEVICE BASED ON FLEXURE HINGES
Srdan Kovačević, Maja Turk Sekulić, Jelena Radonić, Ivan Španik, Mirjana Vojinović Miloradov, Dušan Milovanović and Zoran Čepić	MEAT INDUSTRY WASTEWATER AS POTENTIAL SOURCE OF EMERGING POLLUTANTS IN THE VOJVODINA PROVINCE
Jakub Rak and Lucie Jurikova	PRESENTATION OF ENVIRONMENTAL RISKS FROM THE PERSPECTIVE OF INDUSTRIAL ACCIDENTS
Pavol Beraxa, Lucia Domocova and Ľudovit Parilak	QUALITY ASSESSMENT OF PVD COATING AND TOOL USED AT COLD-FORMING PROCESS
Ionelia Voiculescu, Victor Geanta, Radu Stefanioiu, Horia Binchiciu and Dana Daniela Daisa	ALUMINA CERAMICS BRAZED USING METALLIC ALLOYS
Olivera Sauperl, Julija Volmajer-Valh and Jasna Tompa	INFLUENCE OF TEMPERATURE TO THE EFFICIENCY OF VISCOSE TREATMENT USING COPOLYMER CHITOSAN-EUGENOL
Tatjana Kreže and Simona Strnad	PHISICAL-CHEMICAL PROPERTIES OF POULTRY FEATHER FIBRES
Lidija Fras Zemljic, Tijana Ristić, Matej Bračić and Julija Volmajer	SYNERGISTIC FORMULATION OF CHITOSAN AND CURCUMIN AS A POTENTIAL ANTIMICROBIAL AND ANTIOXIDANT COATING FOR POLYMERS
Victor Geanta, Ionelia Voiculescu, Radu Stefanioiu, Dana Daniela Daisa and Emilia Binchiciu	RESEARCH ON THE INFLUENCE OF ALLOYING ELEMENTS ON THE MICROSTRUCTURE AND MICROHARDNESS OF BIOCOMPATIBLE COBALT-CHROMIUM ALLOYS

Janka Majerniková, Emil Spišak, Luboř Kašcak and Jan Slota	IRREGULAR INFLUENCE OF PLASTIC DEFORMATION OF THIN PACKAGING SHEETS TO THEIR CORROSIVE RESISTANCE
Marek Idzior, Jerzy Markisz, Maciej Bajerlein and Maciej Bieliński	RESEARCHES OF THE IMPACT OF INCORRECT DIAGNOSIS CAUSES OF DAMAGE TURBOCHARGER ON THE EFFICIENCY OF THE NEW COMPONENT
Jerzy Merkisz, Maciej Bajerlein, Michał Dobrzyński and Łukasz Rymaniak	THE IMPACT OF MODIFIED PISTON TWO STROKE ENGINE ON TOXIC EMISSIONS DETERMINED ON THE BASIS OF RESEARCH CARRIED ON THE CHASSIS DYNAMOMETER
Marek Idzior, Jerzy Markisz, Maciej Bajerlein and Paweł Stobnicki	METHODS OF RESEARCHES AND EVALUATION OF WEAR INJECTORS USED IN MODERN COMPRESSION IGNITION ENGINES
Marek Idzior, Jerzy Merkisz, Maciej Bajerlein and Paweł Daszkiewicz	THE ANALYSIS OF INFLUENCE OF THE EGR VALVE OPENING DEGREE OF ON THE EMISSION OF TOXIC COMBUSTION ENGINES WITH DIRECT INJECTION
Petr Drasnar, Jan Kudlacek, Petr Roskanin, Tomaz Pepelnjak, Zlatan Car and Miroslav Vales	INTRODUCTION OF NEW SURFACE TREATMENT TECHNOLOGIES INTO PRACTICE - ZINC BASED COMPOSITE COATING WITH PTFE PARTICLES (ZN-PTFE COATING)
Bolesław Machulec and Wojciech Białik	MODEL OF THE FERROSILICON MELTING PROCESS IN THE SUBMERGED ARC FURNACE.
Bolesław Machulec and Wojciech Białik	MODEL OF THE FERROSILICON MELTING PROCESS IN THE SUBMERGED ARC FURNACE
Branislav Dobrucky, Slavomir Kascak, Michal Prazenica and Jan Kassa	SPEED/POSITION SENSORLESS CONTROL OF TWO-PHASE PMSM DRIVE SYSTEM USING VIRTUAL INJECTION METHOD
Lucie Jurikova and Jakub Rak	SIMULATION SOFTWARE FOR MODELLING AND SIMULATING EMERGENCY EVENTS
Hatice Kokten and Sakir Erkoç	DENSITY FUNCTIONAL THEORY STUDY OF ALUMINUM DOPED HEXAGONAL ZINC OXIDE SHEETS
Justyna Trojanowska and Edward Pajak	PROBLEM OF FLOW CONTROL OF PRODUCTION MAKE TO ORDER
Zoran Čepić, Maja Sremaćki, Miodrag Živančev, Zoran Đukić, Dejan Ubavin and Mirjana Vojinović-Miloradov	THE POTENTIAL OF MANURE UTILIZATION FOR DEVELOPMENT OF SMALL TO MEDIUM SCALE PLANTS FOR BIOGAS PRODUCTION IN VOJVODINA REGION
Martin Beneda and Roman Prokop	COLOR SEGMENTATION FOR SEGMENT-BASED STEREO MATCHING
Nikita Markov, Paul Fomkin, Aleksandr Ermakov and Lubov Strogonova	THE DYNAMIC COMPONENT OF THE PATTERN RECOGNITION SYSTEM OF MICROORGANISMS UNDER MICROGRAVITY CONDITIONS
Salko Cosic, Mevludin Avdic and Salko Bukvarevic	NUMERICAL MODELING OF TRACK ROLLER - SHOE INTERACTION AT CRAWLER MACHINES
H. Pechová, V. Preclik	THE MAIN INVENTORY MANAGEMENT SYSTEMS – THEORY OF INVENTORY, THREE METHODOLOGIES
Karel Vojkovský, Jan Kudlacek, Michal Pakosta and Marko Krsulja	PCN2 – CYCLIC LOADING PULSATOR, FOR RESEARCH ON HYDROGEN EMBRITTLMENT IN SURFACE TREATMENT TECHNOLOGY.