

FACULTY OF ENGINEERING IN HUNEDOARA



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RESEARCH CENTER

OPTIMIZATIONS IN THE INDUSTRY OF MATERIALS

GENERAL PRESENTATION

The Research Center “Optimizations in the Industry of Materials” is recognized by the National Board of Higher Education Scientific Research through certificate No. 100/CC-C of 11.05.2001. It is established at the Faculty of Engineering in Hunedoara and it includes staff involved in the research activity in the fields of electrotechnics, mechanics and metallurgy.

The Department of Electric Engineering and Industrial Computer Science has specialized laboratories for researches on the functioning of the rotary electric equipment and transformers, electrical equipment, electric and electronic circuits, for carrying out the achievement and processing of data, the analysis of the quality of the electric power of different consumers, studying the electromagnetic compatibility, the analysis and synthesis of the automatic adjustment of the parameters of the industrial processes, using the classic adjustment methods, as well as new methods, based on the fuzzy logic, neuronal networks, expert systems, Also we are mainly interested in the semi-groups of operators theoretical approach to problems originating from mathematical-physics, to gain mathematical understanding of quantum field theory and statistical mechanics, in the uniqueness problems for finite and infinite dimensional diffusion operators and modelling and simulation in nanomagnetism.

In the laboratories of the Department of Engineering and Management, the teaching staff can carry out researches in the fields of chemistry, plastic deformation, studies related to the elaboration of iron and non-ferrous materials, thermal treatments and economic researches (prognosis, diagnosis etc.).

The material resources and infrastructure of the Department of Engineering and Management ensures the possibility of carrying out mechanic tests at the surrounding temperature and low temperatures, the research of the behavior of some machinery parts (belts, bearings, springs etc.) during functioning and the tribologic analysis of lubricants and various pairs of materials.

MISSION

The Research Center “Optimizations in the Industry of Materials” offers the framework for scientific research and human resources formation activities in the field of electrotechnics, mechanics, the science of materials, automotive engineering and industrial computer science.

The research activity carried out within the research center is strictly related with the teaching process and aims at:

- forming specialists who may contribute, through their qualification and performances, to the enlargement of the state of knowledge
- raising the competitiveness of the Faculty of Engineering in Hunedoara on the qualifications market requested by the market economy
- forming of elites within the young generation obtaining outside the budget incomes for the modernization of the laboratory infrastructure.

FIELDS OF RESEARCH

- Improvement and analysis of electro-magnetic compatibility for different loads: plate-type electrostatic precipitators, lighting systems, modern inverters welding power supplies, and variable speed drives
- Implementation of programmable logic controllers in industrial applications
- Electromagnetic compatibility
- Numerical modeling and control of the induction heating electro-technology
- Simulation of faults in three-phase electric systems using the PSCAD-EMTDC program
- Numerical protection relays
- Modern methods for recording and analyzing the events in electric stations
- Artificial Intelligence, Distributed programming, Multi-agent systems, Distributed Constraint Satisfaction Problem
- Control of industrial processes
- Neuro-fuzzy expert systems
- Chaos control
- Researches about the power quality in the railway electric transport
- Researches on the control of the metal continuous casting process
- Improvement of performances for classical and special electrical machines, and optimal designing.
- Generation of electrical energy with variable speed in micro-hydro and eolian power plant
- Improvement of performances for electrical variable speed drives
- Modern electrical traction systems
- Static performance converters
- Study of electric vehicles and hybrid electric vehicles
- Computational geometry
- Software Engineering

- Computer-Assisted Instruction and Computer aided design
- Eco-design of mechanical systems and structures
- Modeling, simulation and automation of processes in the sintering plants by Fuzzy logic
- Researches concerning modeling and control of the processes from sintering plants
- Analysis of electromagnetic fields by finite element method, PLC programming design of SCADA systems, electrical machine design, optimization of electromechanical systems
- Installation with electromagnetic induction
- Electrothermics
- Numerical modeling and simulation of electromagnetic and thermal fields
- Data acquisition systems
- Real time and concurrent programming
- Computer networks
- MSC(2010) 35XX-Partial Differential Equations: weak solutions; Schrodinger operator; Fokker-Planck equations
- MSC(2010) 47XX-Operator Theory: groups and semi-groups of linear operators; Markov semi-groups and applications to diffusion processes
- MSC(2010) 58XX-Global Analysis, Analysis on Manifolds: diffusion processes and stochastic analysis on manifolds
- MSC(2010) 60XX-Probability Theory and Stochastic Analysis: diffusion processes
- MSC(2010) 81XX-Quantum theory: selfadjoint operator theory in quantum theory, including spectral analysis
- MSC(2010) 82XX-Statistical mechanics, structure of matter: dynamic lattice systems; dynamic continuum models
- Mathematical modeling
- Computational mathematics
- Applied mathematics
- Computational fluid dynamics
- Optimization techniques
- Mathematical Analysis: Control Theory
- Database, programming and data processing on integrated system SAP
- Wireless Sensor Networks
- Real time and concurrent programming
- Nanomagnetism
- Analysis of adaptive algorithms and filtering
- Signal processing
- Electrical Railway
- Using fuzzy logic for maintain optimum environmental conditions
- Analyzing parallel algorithms
- Analyzing neural networks performances
- Rolling of materials.
- Research development for continuous casting products.
- Waste recycling.
- Environmental protection.
- Materials science and technology.
- The optimisation of the processes of elaboration and solidification of the steel.
- Research development for continuous casting products.
- The recovery and the development of the metallic scraps.
- Waste recycling.
- Environmental protection.
- Thermal fatigue and durability of the hot rolling mill cylinders.
- Resistance of materials.
- Elasticity. Plasticity. Analysis of tensions and deformations between the wires of the steel ropes.
- Thermodynamics. Heat transfer and thermal machines.
- Numerical simulating of thermal stratification phenomena in steel ladles.

KEYWORDS

- Plate-type electrostatic precipitators; fluorescent lamps; welding supplies; power factor; programmable logic controllers; power quality; harmonic distortion; induction heating; numerical modeling; numerical control; numerical protection; constraints programming; distributed problems; asynchronous searching techniques; messages, agents, multi-agent systems; modeling and simulating; automation; neuro-fuzzy systems; chaos control; power quality indicators; harmonic regime; continuous casting; secondary cooling; mould level; electrical machines; designing and optimization; static frequency converters; variable speed; regenerable energy; electric drives; electric and hybrid vehicles; dynamic geometry system; automated geometry theorem proving; UML; expert system; fuzzy logic; sintering plant; microcontroller; electromagnetics; finite element method; PLC; programming; SCADA; electrical machine design; optimization; electromechanical systems; electromagnetic induction; high frequency; active filters; electrothermics; simulation; coupled fields; data acquisition; programming; networking; C_0 -semigroups; integrated semigroups; L^∞ -uniqueness; diffusion operators; Fokker-Planck equation; dynamic lattice systems, selfadjoint operator theory; computational mathematics; spectral techniques; finite element techniques; swirling flows; optimization; evolution process; truncate probability densities; operators in Banach and Hilbert spaces; exponentially stability; exponential dichotomy; Lyapunov equations; Access; ABAP; JAVA; Web Dynpro; Programming; networking; adaptive control; adaptive filtering; adaptive control;

adaptive filtering; modelling and simulating; signal processing.; steel; waste; environment; casting; ingot; continuous casting; semifinished products; pulverous waste; lime; dolomite; non-ferrous slags; quality; advanced materials; fatigue; tensions; durability; optimization; cylinders; numerical modeling; heat transfer; durability; Computer-Assisted Instruction; Computer aided design; Eco-design

ACTIVITIES

- Assimilating in the fabrication process of new technologies of carbon and alloyed steel making;
- Improving the technologies of carbon and alloyed steel making and casting in the direction of improving the physical – mechanical and technological characteristics;
- Reducing the electric power and thermal energy consumption, auxiliary and raw materials, refractories and metal specific consumption;
- Introducing in the iron and steel industry economic circuit of some metal waste with iron content resulted from different industrial branches (iron and steel industry, energetic industry, mining industry, mechanical engineering industry, chemical industry, etc.);
- Quantitative and qualitative analysis of steel surface contamination by X-Ray photoelectron spectroscopy (XPS);
- Steel sample preparation by ionic (Ar^+ ion sputtering) and chemical cleanings for plasma nitriding treatment;
- Chemical and microstructural study of the plasma-nitrided steel samples by XPS, Electron Probe MicroAnalysis (EPMA) and light microscopy;
- Concentration and microhardness depth profiling in the nitrided layer;
- Internal combustion engine;
- Air filter for internal combustion engine;
- Finite element analysis in Heat transfer;
- Heat transfer in internal combustion engine;
- The explication and the interpretation behavior in operate the entities based on observation of these condition;
- Computer aided design and manufacturing of industrial products;
- Implementation of new technological solutions (CAD/CAM/CAE – Rapid Prototyping) to exit on the market with new and qualitative products;
- Organizing training courses in CAD/CAM/CAE – Rapid Prototyping;
- Behavior in exploitation, safety and stability of the resistance structures, and the effect of environmental factors on them;
- Research on the estimation of the safety degree in exploitation of the resistance structures, through the accomplishment of the requirements on strength, stability and durability.
- Mathematical modeling and simulation of the dynamic behavior of the resistance structures.
- Theoretical and experimental research on the possibilities of improving the quality of the energy transfer between the catenary and the pantograph in electrical traction.
- Mathematical modeling of the dynamic behavior of the catenary suspension – pantograph structure and analysis of the energy transfer parameters. Static analysis and modal analysis.
- Physical and mechanical characteristics and technological properties of materials used for mechanical systems and structures;
- Eco-design of mechanical systems and structures;
- Know and the agreement of the process of operation breakdown of the entities;
- Analyses the tribological phenomena from the operation of electro-mechanic entities;
- Analysis of the moulding – casting technology of the casting pieces
- Experimental analysis of the strain state in the mill rolls, using the numerical simulation
- Researches regarding semisolid state processing of steel. Technologies for obtaining parts from metallic alloys in semisolid state
- Analysis of the influence of mechanical vibration on the microstructure and mechanical properties of the pieces obtain through rheoforging
- Optical study of solid surfaces and polymer films deposited on solid surfaces (ellipsometry, and IR spectroscopy).
- Study of chemical and electrochemical corrosion of metals and methods of anticorrosive protection.
- Statistical processing of results for the predictive maintenance of an industrial fan
- Reliability of the Parallel Gang Shears
- Hydraulics and pneumatics
- Industrial management
- Technical Characteristics Researching of Modern Products in Machine Industry (Machine Design, Fluid Technics and Calculations).
- Industrial researches in human resources area
- Cast iron rolls technologies
- Cast iron rolls durability in exploitation
- Quality assurance
- Optimization methods of the industrial processes
- Plastic deformations and rolling technologies
- Analysis of the thermal fatigue and the durability of the hot mill rolling cylinders;
- Theoretical and experimental analysis of the thermal fatigue of the automotive engines;

- Analysis of the thermal shock upon the hot mill rolling cylinders and of the automotive engines.
- Analysis of plate-type electrostatic precipitators
- Analysis of fluorescent lamps with electronic ballast
- Analysis of modern inverter welding power supplies
- Implementation of some programmable logic controllers in industrial applications
- Power quality measurement for crucible induction furnaces supplied at industrial frequency
- Study about numerical relays for overcurrent and differential protections of transformers
- The implementation of the asynchronous techniques in NetLogo.
- Implementation and evaluation model for the asynchronous search techniques: MAS NetLogo Models-c. Available: <http://discsp-netlogo.fih.upt.ro/>
- The introduction of a model of implementation and evaluation for the asynchronous search techniques in NetLogo, with support for the message synchronization and management
- The use of the model in the study of agents behavior in several situations, like the priority order of the agents, the synchronous and asynchronous case, leading, therefore, to identifying possible enhancements of the performances of asynchronous search techniques
- Expert system for LC protection
- Analysis of the electric power quality
- Algorithms for raw material dosage control for cement plants
- Statistical identification of industrial processes
- Study about the main indicators of the power quality
- Achievement of a filtration system of the main harmonics of voltage and current
- Projection of an automatic system of filtration of the harmonics current
- Study about the principles and methods of the reduction of the harmonic regime
- Studies and investigations on automation and optimization of continuous casting process
- Modelling and control of continuous casting process using Fuzzy logic
- Chaos control of industrial processes
- Analysis of reactive homopolar synchronous generator with stator excitation used in electrical energy generation
- Analysis of asynchronous single phase generator
- Analysis of modern static frequency converter for industrial application
- Analysis of asynchronous machine for electric traction
- Analysis and design of electric drive system for hybrid electric vehicles
- Studies and investigations on automation and optimization of sintering processes
- Modelling and control of sintering processes using fuzzy logic
- Software-oriented controller for hierarchical management of materials transportation process in sintering plants
- Design diagrams and electrical installations using software CAD electric/SEE Electrical
- Low speed generators for wind energy conversion (gearless low speed, direct driven from wind turbine, permanent magnet synchronous generator)
- Computation of the magnetic circuit containing permanent magnets (main field, leakage field, establishing of the running point of the magnet from the mmf and flux density point of view; lumped parameter method)
- Design optimisation of high efficiency motors (axial flux, permanent magnet, flux reversal with nonoverlapping windings Permanent magnet brushless motor (BLDC or BLAC)
- Cracks detection in continuous casting process
- Identification, modeling and control of continuous casting process
- Study about high frequency dielectric heating
- Study about optimization of microwave multimode applicators
- Studies in computational fluid dynamics, swirling flow motions and stability analysis of some type of vortices
- Modeling and optimization of fluid systems, mechanical systems and in electromagnetism
- Finite element and spectral techniques development for nonlinear time-dependent problems
- Soft architecture study on integrated systems
- Researches about the reduction of the electromagnetic pollution at the high frequency electrothermal equipments
- Researches about LC protection in railway equipments using Fuzzy expert systems

RESEARCH PROJECTS

1. *Technical Characteristics Researching of Modern Products in Machine Industry (Machine Design, Fluid Technics and Calculations) with the Purpose of Improvement Their Market Characteristics and Better Placement on the Market.* Project CII-RS-0304-03-1011/2010/2011 and Project CIII-RS-0304-04-1112 - Transnational inter-university research and cooperation network /19 European partners, in the frame of "Central European Exchange Program for University", CEEPUS II and CEEPUS III.
2. *Création de ressources pédagogiques interactives organisées en base de données, pour des apprentissages en soudage, du niveau*

- praticien au niveau ingénieur. 1-FR1-LEO04-07314 1 / LLP-LdV/PAR/2009/RO/003/2009-2011. Project coord. AFPA -Lyon France. Partner 1 Dir. Alic Carmen Inge ; LLP Parteneriat Leonardo da Vinci, Total value 95000 Euro; partener UPT/FIH 25.000 Euro.
3. *L'étude cinématique du système couplé pantographe - structure caténaire* and „*Comportement dynamique des structures de résistance métallique complexes pour les Chemins de Fer*” - Research projects in the frame of “*Accord de coopération aux domaines de la recherche et les échanges académiques entre l'Université Blaise Pascal Clermont II, Clermont-Ferrand, France et l'Université Polytechnique de Timisoara, Roumanie, 2007-2011*” (in French, mixed research teams, Département Génie Civil Polytech'Clermont - Faculty of Engineering Hunedoara/UPT.
 4. Uniqueness of pregenerators, bilateral project, partners University “Politehnica” Timisoara (manager Lemle Ludovic Dan) and Military Economics Academy of Wuhan (Jiang Yiwen)
 5. Partnership to make the students internship in information technology and communication, POSDRU project, 2 axis, manager Manuela Pănoiu, partners University “Politehnica” Timisoara and S.C.Memory SRL
 6. Human resources development in higher education for use of e-Learning, POSDRU project, 2 axis, partners University “Politehnica” Timisoara (Rusu-Anghel Stela), SC Eurojobs SRL Petrosani (Vochitoiu Haralambie), SC Memory SRL Hunedoara (Szabo Eva) and Oil and Gas University of Ploiesti (Vlad Ulmanu).
 - Computer Aided, PIM Publishing House Iași, 2011, 239 pag., ISBN 978-606-13-0597-1.
 5. S. A. Soliman, A. M. Alkandari, A. B. Nassif, J. Łuszcz, N. Bankov, A. Vuchev, G. Terziyski, A. Plesca, Q. Fu, G. Ma, S. Chen, L. Sainz, E. Caro, S. Riera, M. A. P. Seyyedi, A. H. Jahanikia, M. H. Shwehdi, A. Iagar, M. García-Gracia, N. El Halabi, A. Alonso, M. P. Comech , Power Quality. Harmonics Analysis and Real Measurements Data, InTech, Croatia, 2011
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 8. Lemle L.D., Maksay St., Special mathematics, manual for students, Politehnica Publishing House Timisoara, 2011
 9. P.L. Gherman, Optimization Process Management steelmaking in electric arc furnaces DC, Monography, Politehnica Publishing House Timisoara, 2011
 10. Tirian Gelu-Ovidiu, Industrial process control problems, manual for students, Politehnica Publishing House Timisoara, 2011
 11. Bistriana Diana, Mathematical Models and Numerical Algorithms for Stability Investigation of Swirling Hydrodynamic Systems, Monography, Politehnica Publishing House Timisoara, 2011
 12. Topor Marcel, Contributions to the Study of Permanent Magnet Synchronous Machines with Nonoverlapping Windings, Monography, Politehnica Publishing House Timisoara, 2011

PUBLICATIONS

BOOKS

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2. Popa Erika, Hepuț Teodor, Industrial processes in experiments, Politehnica Publishing House Timisoara, 2011, 104 pag., ISBN 978-606-554-247-1.
3. Milostean Daniela, Hepuț Teodor, Socalici Ana, Ardelean Erika, Energy and raw material base, Applications, Politehnica Publishing House Timisoara, 2011, 70 pag. ISBN 978-973-625-843-5.
4. Miklos Imre Zsolt, Cioată Vasile George, Miklos Cristina Carmen, Technical Graphics
1. Dragoi Florin, Socalici Ana, Ardelean Erika, Popa Erika, Hepuț Teodor - *RESEARCHS ON THE INFLUENCE OF THE SLAGS FORMED IN THE INSTALATION ON THE HYDROGEN REMOVAL EFFICIENCY*, Revista de metalurgia, No. 47(6), Madrid, pp. 477-484, ISSN 0034-8570, ISI Journal.
2. Socalici Ana, Hepuț Teodor, Ardelean Erika, Ardelean Marius - *RESEARCHES REGARDING THE RECOVERY OF SMALL AND POWDER FERROUS WASTES WITHIN IRON-AND-STEEL INDUSTRY*, 6th IASME / WSEAS International Conference on ENERGY & ENVIRONMENT (EE '11), Cambridge, UK, pp. 282-287, ISBN 1792-8230, 978-960-474-274-5, ISI Proceedings.
3. Dragoi Florin, Socalici Ana, Hepuț Teodor, Ardelean Erika - *RESEARCHS ON THE INFLUENCE OF GAS CONTENT FROM THE STEEL ON ITS QUALITY*, The 4 th

- Internațional Conference on Manufacturing, Engineering, Quality and Production System, Barcelona, Spain, pp. 139-146, ISBN 978-1-61804-031-2, ISI Proceedings.
4. Todorut Adela, Hepuț Teodor, Socalici Ana, Flori Mihaela, Crisan Eugen - *RESEARCH ON EXPANSION OF THE STEEL BASE MATERIALS*, The 4th International Conference on MARITIME and NAVAL SCIENCE and ENGINEERING, Barcelona, Spain, pp. 112-117, ISBN 978-1-61804-032-9, ISI Proceedings.
 5. Pauca Adina, Hepuț Teodor, Socalici Ana, Josan Ana - *RESEARCH ON QUALITY OF STEEL FOR PRODUCTION OF ROLLING CYLINDERS*, The 4th International Conference on Manufacturing, Engineering, Quality and Production System, Barcelona, Spain, pp. 170-175, ISBN 978-1-61804-031-2, ISI Proceedings.
 6. Popa Erika, Hepuț Teodor, Ardelean Erika, Socalici Ana - *CONTRIBUTIONS ON THE STUDY OF INTERNAL FLAWS IN CONTINUOUS CAST SEMI-FINISHED PRODUCTS*, The 4th International Conference on Manufacturing, Engineering, Quality and Production System, Barcelona, Spain, pp. 161-164, ISBN 978-1-61804-031-2, ISI Proceedings.
 7. Strugariu Laura, Serban Sorina, Ardelean Erika, Socalici Ana, Hepuț Teodor - *RESEARCH ON THE RECOVERY OF OIL IN THE IRON AND STEEL MILL SCALE*, The 4th International Conference on Manufacturing, Engineering, Quality and Production System, Barcelona, Spain, pp. 204-207, ISBN 978-1-61804-031-2, ISI Proceedings.
 8. Crisan Eugen, Ardelean Marius, Vilceanu Lucia, Hepuț Teodor - *RESEARCHES ON THE INFLUENCE OF BINDERS WITH BASIC DATA BASE ON COMPRESSIVE STRENGTH OF PELLETS*, The 4th International Conference on Manufacturing, Engineering, Quality and Production System, Barcelona, Spain, pp. 165-169, ISBN 978-1-61804-031-2, ISI Proceedings.
 9. Putan Adriana, Hepuț Teodor, Vilceanu Lucia, Putan Vasile - *RESEARCH ON DESULPHURIZATION OF STEEL WITH CALCIUM ALUMINATE SYNTHETIC SLAG WITH ADDITION OF TITANIUM OXIDE*, The 4th International Conference on Manufacturing, Engineering, Quality and Production System, Barcelona, Spain, pp. 147-151, ISBN 978-1-61804-031-2, ISI Proceedings.
 10. Pauca Adina, Hepuț Teodor, Pinca Bretotean Camelia, Josan Ana - *A COMPARATIVE STUDY OF HEAT TRANSFER IN METALLIC MATERIALS*, International Conference on Numerical Analysis and Applied Mathematics, ICNAAM, Halkidiki, Greece, ISBN 978-0-7354-0956-9, pp. 543-546, ISI Proceedings.
 11. Popa Erika, Pauca Adina, Socalici Ana - *NUMERICAL SIMULATION OF SOLIDIFICATION PHENOMENA IN CONTINUOUS CAST SEMI-FINISHED PRODUCTS*, International Conference on Numerical Analysis and Applied Mathematics, ICNAAM, Halkidiki, Greece, ISBN 978-0-7354-0956-9, pp. 547-550, ISI Proceedings.
 12. Alic Carmen Inge, Miklos Imre Zsolt, Miklos Cristina Carmen, *FINITE ELEMENT ANALYSIS OF A LATCH PLATE AS COMPONENT OF THE SEAT BELT BUCKLE ASSEMBLY*, Annals of DAAAM for 2011 & Proceedings of the 22nd International DAAAM Symposium: "Intelligent Manufacturing & Automation: Power of Knowledge and Creativity" 23-26th November 2011, Vienna, Austria, pp. 0475 - 0476, ISBN 978-3-901509-83-4, ISSN 1726-9679, ISI Proceedings.
 13. Pinca-Bretotean Camelia, Josan A., *DETERMINATION OF THE VARIABLE TEMPERATURE FIELDS IN THE CYLINDER HEAD OF A SPARK IGNITION ENGINE*, Proceedings of the 22nd International DAAAM Symposium, Intelligent manufacturing and automation Power of knowledge and creativity Vienna, Austria, 23-26 november, 2011, pp. 606-607, ISBN 978-3-901509-83-4, ISI Proceedings.
 14. Josan Ana, Pinca Bretotean Camelia, Sorin Ratiu Aurel, *THE EFFECT OF THERMAL TENSION ON QUALITY MILL ROLLS*, 22nd International DAAAM Symposium "Intelligent manufacturing & automation: Power of knowledge and creativity", Annals of DAAAM for 2011 & Proceedings, Vienna, Austria, 23-26 nov 2011, pp. 1189-1190, ISBN 978-3-901509-83-4, ISI Proceedings.
 15. Socalici Ana, Hepuț Teodor, Ardelean Erika, Ardelean Marius, *Ferrous waste processing by pelletizing, briquetting and mechanically mixed*, INTERNATIONAL JOURNAL OF ENERGY and ENVIRONMENT, No. 5(4), pp. 532-540, ISSN 1109-9577.
 16. Ardelean Marius, Ardelean Erika, Hepuț Teodor, Socalici Ana, *Establishing the main technological parameters of induction surface hardening for shaft parts type*, Annals of the Faculty of Engineering Hunedoara - Journal of Engineering, No. IX(4), pp. 37-40, ISSN 1584-2673.

17. Hepuț Teodor, Socalici Ana, Ardelean Erika, Ardelean Marius, *Research on the diameter electrodes in electric arc furnaces*, Annals of the Faculty of Engineering Hunedoara - Journal of Engineering, No. IX(3), pp. 263-265, ISSN 1584-2673.
18. Todoruț Adela, Strugariu Laura, Hepuț Teodor, Socalici Ana, Ardelean Erika, *Research to improving the micropelleting process on agglomerated technological flow*, Annals of the Faculty of Engineering Hunedoara - Journal of Engineering, No. IX(3), pp.203-207, ISSN 1584-2673.
19. Socalici Ana, Hepuț Teodor, Ardelean Erika, Ardelean Marius, *Research on drug specific electrodes type EBT electric arc furnace*, Annals of the Faculty of Engineering Hunedoara - Journal of Engineering, No. IX(3), pp.123-126, ISSN 1584-2673.
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21. Popa Erika, Kiss Imre, *Assessment of surface defects in the continuously cast steel*, Acta Technica Corviniensis Bulletin of Engineering, No. IV(4), pp. 109-115, ISSN 2067-3809.
22. Alic Carmen Inge, Miklos Cristina Carmen, Miklos Imre Zsolt, *Finite element analysis of a seat belt buckle device*, Annals of Faculty Engineering Hunedoara - International Journal of Engineering, Tome IX, (Year 2011), Fascicule 4 (Extra), pp.135-140, ISSN 1584-2673.
23. Miklos Imre Zsolt, Alic Carmen Inge, Miklos Cristina Carmen, *Experimental tests on indexing device with spherical elements (balls)*, Annals of Faculty Engineering Hunedoara - International Journal of Engineering, Tome IX, (Year 2011), Fascicule 4 (Extra), pp. 167-170, ISSN 1584-2673.
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25. Pinca-Bretotean Camelia, *The finite element analysis of a cylinder head of a spark ignition engine*, Annals of the Faculty of Engineering Hunedoara - Journal of Engineering, Tome IX, Extra Fascicule, pp. 239-242, ISSN 1584-2673.
26. Pinca-Bretotean Camelia, Tirian G.O., *Considerations on thermal fatigue internal combustion engines*, Annals of the Faculty of Engineering Hunedoara - Journal of Engineering, Tome IX, Extra Fascicule, pp. 195-198, ISSN 1584-2673.
27. M. Flori, B. Gruzza, L. Bideux, G. Monier, C. Robert-Goumet, J.-P. Cherré, D. Miloștean, *Influence of microstructure defects on the properties of 42CrMo4 nitrided steel*, Annals of Faculty Engineering Hunedoara – International Journal of Engineering, Tom IX, Fascicula 1, pp. 141-146, ISSN 1584-2673.
28. Simion JITIAN, *Optical Constants of Polystyrene Films from IR Reflection-Absorption Spectra*, Analele Universității "Eftimie Murgu" Reșița, No. XVIII(1), pp. 41-48, ISSN 1453-7397.
29. Simion JITIAN, *The Determination of Thickness and Optical Constants for PbSe Film from IR Reflectance Spectra*, Analele Universității "Eftimie Murgu" Reșița, No. XVIII(1), pp. 153-156, ISSN 1453-7397.
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32. SERBAN Sorina, STRUGARIU L., *Educational software "ChimUniv" for Chemical bonds*, Annals of Faculty Engineering Hunedoara – International Journal of Engineering, Tome IX, Fascicule 3, pp. 485-488, ISSN 1584-2673.
33. SERBAN Sorina, SAVII George, *About an Educational Software used in the Chemistry for Determining the Chemical Composition and Molecular Weight Chemicals*, Annals of Faculty Engineering Hunedoara – International Journal of Engineering, Tome IX, Fascicule 3, pp. 191-194, ISSN 1584-2673.
34. Vasile PUȚAN, *Heat loss fluxes from steel melt to different boundary regions of a ladle*, Annals of Faculty Engineering Hunedoara – International Journal of Engineering, Tome IX, Extra Fascicule, pp. 239-242, ISSN 1584-2673.
35. Lucia VÎLCEANU, *The influence of the local compression effect about the working life of the component wires in a wire-rope*, Annals of Faculty Engineering Hunedoara – International Journal of Engineering, Tome IX, Extra Fascicule, pp. 141-144, ISSN 1584-2673.

36. KISS Imre, Vasile George CIOATĂ, Vasile ALEXA, Sorin Aurel RAȚIU, *Technological behavior & interpretations in some multidisciplinary approaches*, Annals of Faculty Engineering Hunedoara – International Journal of Engineering, Tome IX, Fascicule 4, pp. 203-206, ISSN 1584-2673.
37. KISS Imre, Vasile ALEXA, *Statistical mathematic analysis and technological investigations in the area of the rolling mill rolls quality, machine design – the annual publication of faculty of technical sciences*, Issues 2, pp. 79-84, ISSN 1821-1259.
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OTHER ACHIEVEMENTS IN R&D – INNOVATION ACTIVITIES

ALIC, C. I., ALEXA, V., MIKLOS, C.C., MIKLOS, I. Zs., Rațiu, S.A., *"Borne Ressources Interactive en Soudage - BRIS"* Type:

Computerized database, exploited through a "touchless 3D" interface. Short description : Interactive teaching resources in Arc Welding domain. Final product of the European project 2009-1-FR1-LEO04-073141 « Création de ressources pédagogiques interactives organisées en base de données pour des apprentissages en soudage, du niveau opérateur au niveau ingénieur ». Partners AFPA Lyon - Franta, UPT /FIH – Romania, Le FOREM Bruxelles - Belgia, Institut de Soudure Paris - Franta

DOCTORAL THESIS

MIKLOS, C. C., *Studiul ansamblului suspensie catenară - pantograf în tracțiunea electrică feroviară, în vederea îmbunătățirii transferului de energie/Study upon the catenary suspension - pantograph assembly in electric railway traction, in order to improve the energy transfer*, Electrical Engineering, University of Petrosani – nov.2011

PERSPECTIVES, INTERESTS, STRATEGIC PRIORITIES

- The assimilation into manufacturing of some new technologies of elaboration and casting of carbon and allied steels
- Perfecting the technologies of elaboration and casting of carbon and allied steels in the way of improving the physical, mechanical and technological characteristics
- The reduction of the electric and thermic energy consumption, raw and auxiliary materials, refractory materials, specific metal consumption
- Reintroducing into the economic circuit of some metallic scraps with iron content, came from different industrial branches (siderurgical industry, energetical industry, mining industry, mechanical engineering, chemical industry, etc.)
- Reducing the degree of pollution in the siderurgic, energetic and mining industry
- Improving the parameters of the continuous casting technology of the steels and the extension of the continuous casting to a various range of tipodimensions of semi-finished products
- The management of the process of secondary cooling for steel continuous casting
- Analysis of steel surface contamination in air exposure (oxidation).
- Surface steel nitriding in laboratory conditions with a glow-discharge source.
- Analysis of the defects existing in the bulk material (segregation bands) on the structure and properties of industrial plasma nitrided steel samples.
- The numerical simulation of the heat transfer in combustion chamber of an internal combustion engine;
- The numerical simulation of the dynamic transfer concerning the intake air trough air filters in Internal Combustion Engine.
- The improvement of the performances in exploitation the entities.
- The numerical simulation of the hot rolling process for analyze the durability in exploitation of the mill rolls.
- The numerical simulation of the casting pieces.
- Experimental researches on the semisolid state rheoforging of steel in the presence of mechanical vibration of small frequencies.
- The optical constants of solid materials by reflectance spectra recorded at two angles of incidence.
- Solutions for Breed the Reliability
- Symetrical and asymetrical rolling of materials
- Indefinite rolling mills cast-iron rolls quality assurance
- Analyse of the thermal regime of the automotive engines used numerical method of calcul.
- State of stress, deformations and vibrations analysis on deformation mechanics systems constrained on static and dynamic strain;
- Mechanics systems computational analysis with applications in automotive engineering;
- Advanced control and pollution reduction systems produced from automotives in urban traffic;
- Urban transport, noises and vibrations ecology;
- Vibro-acoustic phenomena analysis in tire-railroad contact in traffic;
- Kinematic-dynamic behavior modeling and simulation in complex mechanisms with articulated bars used in electric railway traction;
- Applied Management and Human Resources in the Companies practices
- Development of applications with programmable logic controllers used in industry
- Establish the electrical performances of plate-type electrostatic precipitators, inverter power supplies and fluorescent lamps with electronic ballast
- Improving power factor in electrical installations with non-linearity and un-balanced loads
- Research concerning harmonic distortion produced by induction hardening equipment
- Development of some mathematical models 2D and 3D based on FMD, and of some simulating programs, able to allow numerical control of induction heating for pieces with complex shape
- The expansion of the NetLogo models, used at the implementation of the asynchronous techniques to allow the agents to operate with multiple variables

- The introduction of the new problems for the analysis of the asynchronous techniques, problems which are called “binary random problems”, which allow the more exact study of the asynchronous techniques behavior
- The implementation a new solver for distributed constraint programming: DisCSP-NetLogo.
- Automation of industrial installation using neuro-fuzzy systems
- Command systems about the reduction of the harmonic regime and the compensation of the power factor
- Power commutation devices
- Industrial proces simulation tehniques
- Modelling and control of industrial processes using Fuzzy logic
- The management of the process of secondary cooling for steel continuous casting
- Simulation and data acquisition using the LABView software
- Development of applications on produced electrical energy with variable speed
- Establish the electrical performances of static frequency converter for use in microhydro and eolian power plant
- Improvement of performances of electric drives of hybrid electric vehicles
- Intelligent system for geometry theorem proving
- Chaos control of industrial processes
- Researches upon the hierarchical control of a conveyor belt system from the sintering plants
- Identification, control and optimization of metallurgical processes
- My research interests are in bringing contributions in reducing the effects of the generated non-sinusoidal regime
- Automation of industrial installation using neuro-fuzzy systems with application in continuous casting
- Research concerning harmonic distortion produced by induction hardening equipment
- Development of some mathematical models 2D and 3D based on FMD, and of some simulating programs, able to allow numerical control of induction heating for pieces with complex shape
- To begin romanian-chinese bilateral project Uniqueness of pre-generators
- Development of numerical methods and algorithms for hydrodynamic stability studies using computer simulations of steady flows and swirling flows
- Adobe technology, workflow and data processing on integrated system SAP
- Research concerning Data Agregation algorithms for a Wireless Sensor Network
- Studies on optimising the specific absorption rate (SAR) in the magnetic hyperthermia, with superparamagnetic nanoparticles

- Development of some mathematical models for electric arc based on fuzzy techniques for simulating the electric installation of the EAF in order to control de process and to reduce the electromagnetic pollution and power consumption

RESEARCH TEAMS

1. Implementation of programmable logic controllers in industrial applications

- Lect.dr.eng. Gabriel Nicolae Popa
- Assoc. Prof.dr.eng. Sorin Ioan Deaconu
- Assoc. Prof.dr.eng. Iosif Popa
- Lect.dr.eng. Angela Iagar
- Lect.dr.eng. Corina Maria Dinis

2. EMI tests

- Lect. dr. eng. Angela Iagăr
- Lect. dr. eng. Popa Gabriel
- Assoc. prof. dr. eng. Caius Pănoiu
- Assoc. prof. dr. eng. Sorin Deaconu
- Assist. drd. eng. Cristian Abrudean
- Lect. dr. eng. Diniş Corina
- Lect. dr. eng. Cuñan Corina
- Assist. drd. eng. Baciu Ioan

3.Numerical modeling and control of the induction heating electro-technology

- Lect. dr. eng. Angela Iagăr
- Assoc. prof. dr. eng. Caius Pănoiu
- Assoc. prof. dr. eng. Sorin Deaconu
- Lect. dr. eng. Popa Gabriel
- Assist. drd. eng. Cristian Abrudean

4. Implementation and evaluation of the asynchronous search techniques in NetLogo

- Lect. dr. Muscalagiu Ionel
- Lect. dr. Popa Horia Emil
- Assoc. prof. dr. eng. Manuela Pănoiu
- Assist. eng. Cristian Abrudean
- Lect. Dr. Osaci Mihaela.

5.Control of industrial processes, neuro-fuzzy expert systems, modeling, simulation and control of processes

- Lect.dr.eng. Stela Rusu-Anghel
- Assist.eng. Gelu Ovidiu Tirian
- Assoc. prof. dr. eng. Caius Panoiu
- Assoc. prof. dr. eng. Manuela Panoiu
- Assist. eng. Marcel Topor
- Lect. dr.eng. Maria Corina Diniş

6. Chaos control, sincronization and anticontrol

- Lect.dr.eng. Stela Rusu-Anghel
- Assist.eng. Marcel Topor
- Assist.eng. Petre Lucian Gherman

7. Analysis of a PM axial synchronous machine for electric and hybrid vehicle

- Assoc. prof. dr. eng. Sorin Deaconu
- Assoc. prof. dr. eng. Lucian Nicolae Tutelea
- Lect. dr.eng. Gabriel Nicolae Popa
- Lect. dr.eng. Maria Corina Diniş

8. Analysis of wound induction generators

- Assoc. prof. dr. eng. Sorin Deaconu
- Assoc. prof. dr. ing. Lucian Nicolae Tutelea
- Lect. dr. eng. Gabriel Nicolae Popa
- Lect. dr. eng. Maria Corina Diniş

9. Optimal design of electric machines

- Assoc. prof. dr. eng. Sorin Deaconu
- Lect. dr. eng. Gabriel Nicolae Popa
- Assoc. prof. dr. ing. Lucian Nicolae Tutelea
- Lect. dr. eng. Angela Iağăr

10. Numerical modeling of multidimensional data in variate problems and algorithms development in computer fluid dynamics.

- Prof. dr. Ştefan Maksay
- Lect. dr. Dan L. Lemle
- Assist. math. Diana A. Bistran
- Assist. math. Diana M. Stoica

11. Algorithms development in non-linear hydrodynamic problems and numerical modeling of multidimensional data in variate problems

- Prof. dr. Ştefan Maksay
- Assist. drd. Diana A. Bistran

12. Operator theory and stochastic analysis

- dr. Ludovic Dan Lemle, Politehnica University of Timişoara, Engineering Faculty of Hunedoara
- dr. Flavius Pater, Politehnica University of Timisoara, Department of Mathematics
- dr. Tudor Binzar, Politehnica University of Timisoara, Department of Mathematics
- Diana Monica Stoica, Politehnica University of Timisoara, Engineering Faculty of Hunedoara
- dr. Liming WU, Blaise Pascal University of Clermont-Ferrand, Department of Mathematics

13. Modeling and simulation in nanomagnetism

- Lect. dr. Osaci Mihaela
- Assoc. prof. dr. eng. Panoiu Manuela
- Lect. dr. Muscalagiu Ionel
- Assist. eng. Abrudean Cristian
- Assist. eng. Berdie Adela Diana

14. Software architectures on integrated software systems

- Lect. dr. Osaci Mihaela
- Assist. eng. Berdie Adela Diana

15. Using fuzzy techniques for modelling electric arc

- Assoc. prof. dr. eng. Manuela Pănoiu
- Assoc. prof. dr. eng. Caius Pănoiu
- Lect. dr. Mihaela Osaci

- Assist. eng. Raluca Rob
- Assist. dr. Anca Iordan

16. The reduction of the electromagnetic pollution at the high frequency electrothermal equipments

- Assoc. prof. dr. eng. Caius Pănoiu
- Assoc. prof. dr. eng. Manuela Pănoiu
- Assist. eng. Abrudean Cristian
- Assist. eng. Raluca Rob
- Assist. dr. Anca Iordan

17. Researches regarding power quality in electric railway and improving solutions

- Assist. dr. eng. Baciu Ioan
- Assoc. prof. dr. eng. Caius Pănoiu
- Assoc. prof. dr. eng. Deaconu Sorin
- Lect. dr. Cuntan Corina Daniela
- Lect. dr. Popa Gabriel Nicolae

18. Optimization of the thermal regime of steel on the direction of furnace-secondary treatment unit – continuous casting installation

- Lect. Dr. eng. Erika Ardelean
- Lect. Dr. eng. Ana Socalici
- Lect. Dr. eng. Marius Ardelean
- Lect. Dr. eng. Corina Cunţan
- Assist. Eng. Erika Popa
- Assist. Eng. Cristian Abrudean

19. Refractories with complex functions used in the steel industry, made by modern technologies

- Prof. dr. eng. Teodor Hepuţ
- Lect. dr. eng. Erika Ardelean
- Lect. dr. eng. Ana Socalici
- Lect. dr. eng. Marius Ardelean
- Lect. dr. eng. Laura Benea
- Lect. Dr. eng. Ana Josan
- Prof. dr. Ştefan Maksay
- Assist. Adrian Bleoca

20. Integrated technology used to obtain some non-conventional energy technological sources, used as raw materials for steel making

- Prof. dr. eng. Teodor Hepuţ
- Lect. dr. eng. Erika Ardelean
- Lect. dr. eng. Ana Socalici
- Lect. dr. eng. Marius Ardelean
- Lect. dr. eng. Caius Pănoiu
- Asist. dr. eng. Adrian Găvănescu
- Lect. dr. eng. Mihaela Osaci
- Lect. dr. eng. Vasile Puţan

21. Advanced technology direction of pieces case-hardening industrial process in induced current

- Prof. dr. eng. Teodor Hepuţ
- Lect. dr. eng. Erika Ardelean
- Lect. dr. eng. Ana Socalici
- Lect. dr. eng. Marius Ardelean
- Assoc. prof. dr. eng. Caius Pănoiu
- Assoc. prof. dr. eng. Manuela Pănoiu

- Lect. dr. eng. Vasile Puțan
- Lect. dr. eng. Gabriela Mihuț
- Lect. dr. eng. Doina Petre

22. Assimilating, making, casting of iron, steel and non-ferrous alloys

- Lect. dr. eng. Virginia Socalici
- Lect. dr. eng. Erika Ardelean
- Lect. dr. eng. Marius Ardelean
- Lect.dr.eng. Camelia Pinca-Bretotean
- Assist. eng. Erika Popa

23. Prevention and fighting pollution in the steel making, energetic and mining industrial areas through the recycling of small-size and powdering wastes

- Prof.dr.eng. Teodor Hepuț
- Lect. dr. eng. Erika Ardelean
- Lect. dr. eng. Ana Socalici
- Lect. dr. eng. Marius Ardelean
- Assoc.prof.dr.eng. Caius Pănoiu
- Assoc.prof.dr.eng. Manuela Pănoiu
- Lect. dr. eng. Vasile Puțan
- Lect. dr. eng. Ana Josan

24. Surface analysis of plasma nitrided steels.

- Asist.dr.eng. Mihaela Flori
- Prof.dr. Bernard Gruzza
- Asist.dr.eng. Daniela Milostean
- Drd.eng. Florin Dragoi.

25. Dynamic transfer concerning the intake air trough air filters in Internal Combustion Engine

- Lect. dr. eng. Sorin Rațiu
- Conf. dr. eng. Carmen Alic
- Conf. dr. eng. Liviu Mihon
- Stud. Corneliu Birtok-Băneasă

26. The availability of entities

- Assoc.prof.D.Sc.Eng Teodor Vasiu
- Lect. D.Sc.Eng. Adina Budiul-Berghian

27. Analysis of the moulding – casting technology of the casting pieces

- Lect. dr. eng. Josan Ana
- Lect. dr. eng. Putan Vasile
- Lect. dr. eng. Petre Doina

28. Experimental researches regarding semisolid state processing of steel

- Assist. dr. eng. Daniela Miloștean
- Lect. dr. eng. Vasile Cioată
- Assist. dr. eng. Flori Mihaela
- Dr. eng. Drăgoi Florin

29. Approaches of cast-iron rolls quality assurance

- Assoc. prof. dr. eng. Kiss Imre
- Lect. dr. eng. Cioata Vasile George
- Lect. dr. eng. Ratiu Sorin

30. Analysis of the thermal fatigue of the automotive engines

- Conf. dr. eng. Vilceanu Lucia
- Lect. dr. eng. Putan Vasile
- Asist. drd. eng. Tirian Gelu Ovidiu
- Asist. drd. Bistriana Diana

31. State of stress, deformations and vibrations analysis on deformation of mechanics systems constrained on static and dynamic strain

- Assoc. prof. dr. eng. Carmen Alic
- Lecturer dr. eng. Zsolt Miklos
- Lecturer dr. eng. Vasile George Cioată
- Assist. eng. Cristina Miklos
- Prof. dr. Eng. Julien Averseng – Université Montpellier II, France
- Prof. des Universités Abdulhamid Bouchair – Université Blaise Pascal Clermont-Ferrand, France

32. Safety, stability and behavior in exploitation of the resistance structures, and the effect of environmental factors on them

- Assoc. prof. dr. eng. Carmen Alic
- Lecturer dr. eng. Zsolt Miklos
- Assist. eng. Cristina Miklos
- Prof. des Universités Abdulhamid Bouchair – Université Blaise Pascal Clermont-Ferrand, France

33. Theoretical and experimental research on the possibilities of improving the quality of the energy transfer between the catenary suspension and the pantograph

- Assoc. prof. dr. eng. Carmen Alic
- Lecturer dr. eng. Zsolt Miklos
- Assist. eng. Cristina Miklos
- Lecturer dr. Eng. Rusu-Anghel Stela
- Prof. dr. Eng. Julien Averseng – Université Montpellier II, France
- Prof. des Universités Ahmed Rachid – Université de Picardie Jules Verne, Amiens, France
- Dr. Eng. Doru Demian – CFR Romania

34. Mathematical modeling of the dynamic behavior of the catenary suspension – pantograph structure. Static analysis and modal analysis

- Assoc. prof. dr. eng. Carmen Alic
- Lecturer dr. eng. Zsolt Miklos
- Assist. eng. Cristina Miklos
- Prof. des Universités Ahmed Rachid – Université de Picardie Jules Verne, Amiens, France
- Dr. Eng. Doru Demian – CFR Romania.
- Prof. des Universités Ahmed Rachid – UPJV, UFR Sciences, Amiens France
- Maître de Conf. Habilité Dr. Mohamed Guedda – UPJV, UFR Sciences, Amiens France

35. Eco-design of mechanical systems and resistance structures

- Assoc. prof. dr. eng. Carmen Alic
- Lecturer dr. eng. Zsolt Miklos
- Assist. eng. Cristina Miklos
- Prof. des Universités Abdulhamid Bouchair – Université Blaise Pascal Clermont-Ferrand, France

36. Interactive and collaborative learning.

Creation of interactive educational resources

- Assoc. prof. dr. eng. Carmen Alic
- Lecturer dr. eng. Sorin Ratiu
- Lecturer dr. eng. Vasile Alexa
- Lecturer dr. eng. Zsolt Miklos
- Assist. drd. eng. Cristina Miklos
- Eng. Patrick Bouvard – Institut de Soudure, Paris, France
- Eng. Philippe Leca – Institut de Soudure, Paris, France
- Eng. Eric Regnier – AFPA Lyon, France
- Eng. Jose Manuel Lopes – AFPA Lyon, France
- Eng. Jean-Pierre Lequieu – Le Forem, Bruxelles/Charleroi, Belgique
- Eng. Robert Zaniol – Le Forem, Bruxelles/Charleroi, Belgique
- Ec. Gérard Mattia – Le Forem, Bruxelles/Charleroi, Belgique
- Eng. Inf. Michel Verstrepen – Le Forem, Bruxelles/Charleroi, Belgique

37. Technical Characteristics Researching of Modern Products in Machine Industry with the Purpose of Improvement Their Market Characteristics and Better Placement on the Market (CEEPUS Team)

- DSc, PhD, MSc, Eng. Sinisa Kuzmanovic, University of Novi Sad, Serbia, Faculty of Technical Sciences, Department of Mechanism and Machine Design
- Assoc. prof. dr. eng. Carmen Alic
- Lecturer dr. eng. Sorin Ratiu
- Lecturer dr. eng. ec. Vasile Alexa
- Lecturer dr. eng. Zsolt Miklos
- Lecturer dr. eng. Vasile George Cioată
- Lecturer dr. eng. Laura Maria Benea
- Lecturer dr. ec. Marius Calin Benea
- Assist. drd. eng. Cristina Miklos
- Assist. drd. eng. Topor Marcel
- Assist. drd. mat. Bistriana Diana
- Assoc. prof. dr. eng. Imre Kiss
- Prof. PhD. Eng. Sinisa Kuzmanovic University of Novi Sad, Faculty of Technical Sciences, Department of Mechanism and Machine Design
- Prof. Dr Tihomir Latinovic, University of Banja Luka, Faculty of Mechanical Engineering, Bosnia&Herzegovina
- PhD Krasimir Tujarov, Angel Kanchev University of Rousse, Department of

Thermotechnics, Hydro- and Pneumotechnics, Bulgaria

- Dr. Gergely Dezso, College of Nyíregyháza, Engineering and Agriculture Faculty, Hungary
- Prof.Ph.D.Eng. Sava Ianici “Eftimie Murgu” University of Resita, Faculty of Engineering
- Prof., MSc., Eng., PhD. Karol Velisek, Slovak University of Technology in Bratislava, Faculty of Materials Science and Technology STU
- Technical University in Košice , Department of Environmental Engineering and Control Processing, prof. Ing. PhD. Ervin Lumnitzer

38. Theoretical and experimental researches regarding the prediction of workpiece machining error

- Lect. Dr. eng. Cioată Vasile George
- Lect. Dr. eng. Kiss Imre
- Lect. Dr. eng. Miklos Imre Zsolt

39. Theoretical and experimental researches regarding the die-forging of the metallic alloys in semisolid state

- Lect. dr. eng. Cioată Vasile George
- Prof. dr. eng. Hepuț Teodor
- Lect. dr. eng. Kiss Imre
- Lect. dr. eng. Alexa Vasile

40. Theoretical and experimental researches regarding the die-forging of the metallic alloys in semisolid state

- Lect. dr. eng. Cioată Vasile George
- Prof. dr. eng. Ilca Ioan
- Assist. dr. eng. Miloștean Daniela-Cătălina
- Lect. dr. eng. Kiss Imre

41. Analysis of heat transfer in thermal machines and automotive.

- Assoc.prof.dr.eng. Vilceanu Lucia
- Lect. dr. eng. Vasile Puțan
- Lect.dr.eng. Rațiu Sorin

42. Numerical analysis of the stress and strain state between the steel wires ropes.

- Prof.dr.eng. Weber Francisc
- Assoc.prof.dr.eng. Vilceanu Lucia
- Assoc.prof.dr.eng.Pinca-Bretotean C.
- Lect. dr. eng. Dascăl Amalia

43. Analysis of the moulding – casting technology of the casting pieces

- Lect. dr. eng. Josan Ana
- Lect. dr. eng. Putan Vasile
- Lect. dr. eng. Petre Doina

CONTACT

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