

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 rotative 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 semigroups 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 modeling 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:

- solving research topics in the field of materials
- 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 microhydro 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
- Modelling, simulation and automation of processes in the sintering plants by Fuzzy logic
- Researches concerning modelling 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 semigroups of linear operators; Markov semigroups 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
- Research on fluid motions with sliding phenomena on plane surfaces in the first-order approximation.
- Processing of experimental data by mathematic modeling with truncate probability laws.
- Theory of operators, study of stability and dichotomy of a solution of differential equations.
- Machines and hydro-pneumatic actuations.
- 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; power quality; 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; 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 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; 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; 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.

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;
- Mathematical modeling and simulation of the dynamic behavior of the resistance structures.
- Physical and mechanical characteristics and technological properties of materials used for mechanical systems and structures;
- Eco-design of mechanical systems and structures;
- 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 of the dynamic behavior of the catenary suspension-pantograph structure and analysis of the energy transfer parameters. Static analysis and modal analysis.
- Theoretical and experimental research on the possibilities of improving the quality of the energy transfer between the catenary suspension and the pantograph.
- 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 obtained 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
- Hidraulique 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.

- Indefinite rolling mills rolls quality assurance – approaches and studies
- Bimetallic rolling rolls manufacturing - approaches, studies and technological reports
- Nodular cast iron rolls between the quality assurance and optimization of the technological processes
- Applied Management and Human Resources in the Companies practices
- The determination of the optical constants of solid materials by reflectance spectra recorded at two incidence angles
- 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 methodes 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 stage (post-doctoral studies): Mars – August 2010: Institute of Applied Mathematics of Chinese Academy of Sciences, China (Ludovic Dan Lemle)
- Research stage: september 2010: Blaise Pascal University of Clermont-Ferrand, France (Ludovic Dan Lemle)
- Research stage: October 2010: Institute of Mathematics Simion Stoilow of the Romanian Academy, Bucuresti (Ludovic Dan Lemle)

- WSEAS International Multiconference Corfu 23-25 July 2010 participation
- To determine the quality parameters of the power supply, we performed laboratory tests in three different situations, as follows: in traction station, on the locomotive under motor short-circuit, and on the locomotive under normal operating. The measurements were made with a power quality analyzer of CA 8334 type.

RESEARCH PROJECTS

1. Project no. 71-044/2007: *Advanced technology direction of pieces case-hardening industrial process in induced current*, Program PN2 – Consortium-Partner P2. Responsible: Assoc. Prof. dr. eng. Socalici Ana. Total value of the contract: RON 1.449.550 (Partner P2-RON 3.428).
2. Project no 31-098/2007: *Prevention and fighting pollution in the steel making, energetic and mining industrial areas through the recycling of small-size and powdering wastes*, Program PN2 – Consortium – CO. Responsible: Prof. dr. eng. Teodor Heput. Total value of the contract RON 1.980.000 RON (CO- RON 150.259).
3. *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-0304-02-0910/2009-2010 and CII-RS-0304-03-1011/ 2010/2011-Transnational inter-university research and cooperation network/11 European partners, in the frame of Central European Exchange Program for University, CEEPUS II.
4. *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 Partenariat Leonardo da Vinci, Total value 95.000 Euro; partener UPT/ FIH 25.000 Euro.
5. *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/ UBP - Faculty of Engineering Hunedoara/UPT.
6. *Unité et propriété de Liouville pour le système dynamique de Glauber*, Laboratoire Européen Associé C.N.R.S. franco-roumain Math-Mode-finalizat in 2010 (Ludovic Dan Lemle)
7. *Developing and Upholding of Multi-Disciplines Postdoctoral Programms in Technical Domains of Research-Develop-Innovation National Strategy 4D-POSTDOC*, POSDRU/89/1.5/S/52603, Technical University Cluj-Napoca-beneficiary, Politehnica University Timisoara – partner, Popa Gabriel Nicolae – member in research group.

PUBLICATIONS

BOOKS

1. Stoica Diana, Bistriean Diana, Maksay Ștefan, *Matematici Asistate. Calcul simbolic*, Ed. Politehnica, ISBN 978-606-554-076-7, 172 pp., 2010.
2. Stela Rusu-Anghel, Caius Pănoiu, Manuela Pănoiu, *Protecția liniei de contact și a echipamentelor conexe din transportul electric feroviar, utilizând logica fuzzy*, Editura MIRTON Timișoara, 2010, 249 pp., ISBN 978-973-52-0878-3.
3. Stela Rusu-Anghel, *Aplicații fuzzy în transportul electric feroviar*, Editura MIRTON Timișoara, 2010, 114 pp., ISBN 978-973-52-0877-6.
4. Baciu Ioan, Cuntan Corina Daniela, *Circuite integrate analogice*, Editura Politehnica Timisoara, 2010.
5. Diniș Corina Maria, *Matlab - Modelling, Programming and Simulations, Chapter 15 Modelling and simulation of processes from an iron ore sintering plants*, pp. 301-327, Published by Sciyo, ISBN 978-953-307-125-1, 2010.
6. L.D. Lemle, *Lectii de Analiza Matematica pentru ingineri*, Editura Politehnica, Timisoara, 2010.
7. L.D. Lemle, *Autour de la Formule de Lie-Trotter*, Editions Universitaires Europeennes, 2010.
8. Iordan Anca, Pănoiu Manuela, *Data Structures and Algorithms*, Editura Politehnica Timisoara, 2010, ISBN 978-606-554-069-9.
9. Pănoiu Caius, Pănoiu Manuela, *Modeling, Simulation and optimisation- Chapter: Using adaptive filters in controlling of electrical resistance furnace temperature based on a real time identification method*, ISBN 978-953-7619-47-4, IN-TECH, Viena, 2010.
10. Pănoiu Manuela, Pănoiu Caius, *Modeling, Simulation and optimisation- Chapter: Using Simulation to optimizing te power quality of*

- nonlinear distorting loads*, IN-TECH, Viena, ISBN 978-953-7619-47-3.
11. Hepuț Teodor, Socalici Ana, Ardelean Erika, Ardelean Marius, Constantin Nicolae, Buzduga Miron, *Valorificarea deșeurilor feroase mărunte și pulverulente*, Politehnica Timișoara, ISBN 978-606-554-245-7, 340 pp., 2010.
 12. Rațiu Sorin, *Internal Combustion Engine-Drive Mechanism – construction and account*, Ed. Mirton, Timișoara, 2010, ISBN 978-973-52-089-4.
 13. Cioată Vasile George, *Desen tehnic industrial. Elemente teoretice și aplicații*, Ed. PIM Iași, 2010, ISBN 978-606-13-0135-5, 309 pp.
 14. Pinca B. C., *Fabricarea și asamblarea autovehiculelor rutiere*, vol.II, “Mirton”, Timișoara, ISBN general 978-973-667-346-7, ISBN 978-606-554-IIO-8, 217 pp., 2010
 15. Vasile Putan, *Bazele elaborării și turnării aliajelor neferoase*, Ed. Politehnica, Timișoara, 2010, ISBN 978-606-554-108-5.
 16. Benea Calin Marius, *Bazele marketingului*, Ed. Mirton, Timișoara, 2010, ISBN 978-973-52-0859-2.

PUBLICATIONS

1. Socalici Ana, Hepuț Teodor, Ardelean Marius, Ardelean Erika, Puțan Vasile, *Researches regarding practical application of deferrised steelshop slags in agriculture*, Journal of Environmental Protection and Ecology, No.1, Bulgaria, pp. 227-237, ISI Journal.
2. Ardelean Erika, Ardelean Marius, Hepuț Teodor, Socalici Ana, *Possibilities of recycling the lime-dolomite plant dust*, Journal of Environmental Protection and Ecology, No.1, Bulgaria, pp. 217-226, ISI Journal.
3. Socalici Ana, Hepuț Teodor, Ardelean Erika, Ardelean Marius, *Research regarding using the wastes with carbon content in siderurgical industry*, Journal of Environmental Protection and Ecology, No.2, Bulgaria, pp. 465-470, ISI Journal.
4. Ardelean Marius, Socalici Ana, Hepuț Teodor, Ardelean Erika, *Research on obtaining lubricating powder from various types of wastes*, Journal of Environmental Protection and Ecology, No.2, Bulgaria, pp. 593-600, ISI Journal.
5. Ardelean Erika, Ardelean Marius, Socalici Ana, Hepuț Teodor, *Recycling of slag from the aluminium industry to steel refining*, Journal of Environmental Protection and Ecology, No.2, Bulgaria, pp. 635-642, ISI Journal.
6. Hepuț Teodor, Ardelean Erika, Socalici Ana, Osaci Mihaela, Ardelean Marius, *Steel deoxidation with syntetic slag*, Metalurgia International, No. 15(5), pp. 22-28, ISI Journal.
7. Andronache Constantin, Socalici Ana, Maksay Stefan, Hepuț Teodor, *Reserch regarding the quality of the steel used for making rolling stok components*, Annals of the Faculty of Engineering Hunedoara - Journal of Engineering, No. VIII(3), pp. 415-421, CNCSIS B+.
8. Ardelean Erika, Ardelean Marius, Heput Teodor, Socalici Ana, Benea Laura, *Research concerning to the possibility of use the sideritic residue for production of clinker*, Annals of the Faculty of Engineering Hunedoara- Journal of Engineering, No. VIII(3), pp. 86-91, CNCSIS B+.
9. Andronache Constantin, Socalici Ana, Hepuț Teodor, *Consideration regarding the quality of the steel used for making rolling stock components*, The 11th International Symposium Interdisciplinary Regional Research, Szeged, Ungaria, 13-15 octombrie, 2010, ISBN 978-963-508-600-9, T 194.
10. Socalici Ana, Hepuț Teodor, Ardelean Erika, Ardelean Marius, *Valorization of powdery ferrous wastes in the context of sustainable development*, The 6th WSEAS International Conference on Energy, Environment, Ecosystems and Sustainable Development (EEESD'10), Timisoara, 21-23 octombrie, 2010, ISBN 978-960-474-237-0, pp.153-157, ISI Proceedings.
11. Socalici Ana, Hepuț Teodor, Ardelean Erika, Ardelean Marius, *Researches regarding the obtaining of active slag by using reactive admixtures produced from ferrous and basic scrap*, The 6th WSEAS International Conference on Energy, Environment, Ecosystems and Sustainable Development (EEESD'10), Timisoara, 21-23 octombrie, 2010, ISBN 978-960-474-237-0, pp. 158-163, ISI Proceedings.
12. Drăgoi Florin, Ardelean Erika, *Study on increasing to remove continuously cast steel for the productions of pipes*, Annals of the Faculty of Engineering Hunedoara - Journal of Engineering, No. VIII(3), pp. 195-200, CNCSIS B+.
13. Drăgoi Florin, Ardelean Erika, Hepuț Teodor, *Impact study of technological parameters used in lf plants in the efficiency of hydrogen removal*, The 11th International Symposium Interdisciplinary Regional Research, Szeged, Ungaria, 13-15 octombrie, 2010, ISBN 978-963-508-600-9, T 197.

14. Ghita, E., Vilceanu, L., *An Analysis of the Railway Vehicle Suspensions*, Annals of Faculty of Engineering Hunedoara, Tome VIII (2010), Fascicule 3, ISSN 1584-2673, 5 pp. (144-148)
15. Vilceanu, L., *The influence of the local compression effect about the working life of the component wires in a wire rope*, International Symposium on Advanced Engineering & Applied Management – 40th Anniversary in Higher Education, 4-5 November, 2010, Hunedoara, Romania, pp. 135-139.
16. Rațiu Sorin, Popa Gabriel, Josan Ana, Alexa Vasile, *Simulation software for transient, multidimensional heat conduction*, 4th WSEAS International Conference on Computational Intelligence CI 10, Bucharest, April 20-22, 2010, ISBN 978-960-474-179-3, ISSN 1790-5117.
17. Rațiu Sorin, Alexa Vasile, Kiss Imre, Cioată Vasile, *Numerical simulation of thermal transfer in flame heated ovens*, 11th International Symposium of Interdisciplinary Regional Research, Hungary-Romania-Yugoslavia, Szeged, 13-15 oct. 2010.
18. Cioata Vasile George, Kiss Imre, *Computer aided design of the connecting rod*, Machine Design 2010 - Monograph of FTS, Vol. 1, 83, 4 pp., ISSN 1821-1259.
19. Cioata Vasile George, Kiss Imre, *The machining error due to contact deformation of work piece-fixture system*, Výrobné Inžinierstvo-Journal Manufacturing Engineering, Vol. 1, 25, 3 pp., ISSN 1335-7972.
20. Cioata Vasile George, Kiss Imre, *Simulation of solidification process of the pieces obtained through die forging in semi-solid state*, International Symposium On Advanced Engineering & Applied Management – 40th Anniversary in Higher Education (1970-2010, Hunedoara, 4-5 Nov., on CD, 255, 6 pp., ISBN 978-973-0-09340-7.
21. Cioata Vasile George, Kiss Imre, *Determining the contact forces between the workpiece and fixture using the finite element method*, International Symposium On Advanced Engineering & Applied Management – 40th Anniversary in Higher Education (1970-2010, Hunedoara, 4-5 Nov., 261, 4 pp., ISBN 978-973-0-09340-7.
22. Dascal Amalia Ana, *Metallographic aspects of the elements making up a steam boiler*, Annals of Faculty Engineering Hunedoara/ International Journal of Engineering, Tome VIII, Fascicule 3, pp. 24-27, ISSN 1584-2673.
23. Dascal Amalia Ana, *Study Mechanical Behavior of Heat Resistant Steels in Thermal Power Lines*, 14th International Research/ Expert Conference “Trends in the Development of Machinery and Associated Technology”, TMT 2010, 11-18 September 2010, Mediterranean Cruise, pp. 149-152, ISSN 1840-4944.
24. Dascal Amalia Ana, *Optimize the Chemical Composition of Steel to Improve the Mechanical Characteristics of Strength and Rigidity*, 14th International Research/ Expert Conference “Trends in the Development of Machinery and Associated Technology”, TMT 2010, 11-18 September 2010, Mediterranean Cruise, pp. 153-156, ISSN 1840-4944.
25. Dascal Amalia Ana, *Influence of Temperature on the Mechanical Characteristics of Strength and Rigidity For Heat Resistant Steel*, 14th International Research/Expert Conference “Trends in the Development of Machinery and Associated Technology”, TMT 2010, 11-18 September 2010, Mediterranean Cruise, pp. 157-160, ISSN 1840-4944.
26. Dascal Amalia Ana, Caraleanu Daniel, *Wheels auto modeling using finite element method*, International Symposium On Advanced Engineering & Applied Management – 40th Anniversary In Higher Education, pp. 17-22, ISSN 1584-2673.
27. Dascal Amalia Ana, Budiul Berghian Adina, *For measuring an amendment urometer Brinell hardness at hot*, International Symposium On Advanced Engineering & Applied Management – 40th Anniversary in Higher Education, pp. 67-72, ISSN 1584-2673.
28. Budiul Bergian Adina, Teodor VasIU, Amalia Ana Dascal, *Kinetic and static analysis at loaded running of mechanisms of parallel gang shears' type assigned for cutting the metallurgical products*, International Symposium On Advanced Engineering & Applied Management – 40th Anniversary in Higher Education, pp. 169-172, ISSN 1584-2673.
29. Miklos, I. Zs., Alic, C.I., Miklos, C.C., *Analysis of seat positioning mechanism in road vehicles*, Acta Technica Corvinensis, Bulletin of Engineering, Fascicule 3, July – September 2010, Facultatea de Inginerie Hunedoara, e-ISSN 2067-3809, pp. 27-30.
30. Miklos, I. Zs., Miklos, C.C., Alic, C.I., *Experimental determination of the ringing springs stiffness*, Annals of the Faculty of Engineering Hunedoara – Journal of Engineering, TOME VIII (year 2010) Fascicule 3, ISSN 1584-2673 (CD Edition), pp. 241-244.
31. Miklos, I. Zs., Miklos, C.C., Alic, C.I., *Computer aided design possibilities of bolted*

- connection, 11th International Symposium Interdisciplinary Research, ISSIR 2010, 13-15 October 2010, Szeged Hungary
32. Alic, C. I., Miklos, I. Zs., Miklos, C. C., *Using computer graphics and computer aided design methods into the conception of the bolted connections*, 11th International Symposium Interdisciplinary Research, ISSIR 2010, 13-15 October 2010, Szeged Hungary.
 33. Miklos, I. Zs., Alic, C. I., Miklos, C. C., *Indexing device with spherical elements (balls)*, International Symposium on Advanced Engineering & Applied Management – 40th Anniversary in Higher Education (1970-2010), 4-5 November, Hunedoara, Romania, ISBN 978-973-0-09340-7, pp. III-229 – III-232
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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. Cunţan 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, synchronization 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 Iagăr

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. Bistrian
- 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. Bistrian

12. Operator theory and stochastic analysis

- dr. Ludovic Dan Lemle, Politehnica University of Timișoara, 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. Baciú 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 Cuntan
- 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 Hepuț
- 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. Ștefan 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 Hepuț
- 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 Puțan

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

- 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. 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 nitrated 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 Vasii
- 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. Bistriian Diana

31. State of stress, deformations and vibrations analysis on deformation 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 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. 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, Beligues

- Eng. Robert Zaniol-Le Forem, Bruxelles/ Charleroi, Beligues
- Ec. Gérard Mattia-Le Forem, Bruxelles/ Charleroi, Beligues
- Eng. Inf. Michel Verstrepen-Le Forem, Bruxelles/ Charleroi, Beligues

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. 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. eng. PhD. Ervin Lumnitzer

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

- Assoc. prof. dr. eng. Carmen Alic
- Assoc. prof. dr. eng. Imre Miklos
- Lecturer dr. eng. Vasile George Cioată
- Lecturer dr. eng. Zsolt Miklos
- Assist. eng. Cristina Miklos

39. 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

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. Hepuț Teodor
- Lect. dr. eng. Kiss Imre
- Lect. dr. eng. Alexa Vasile

41. 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

42. 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

43. 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 Camelia
- Lect. dr. eng. Dascăl Amalia

44. 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

45. Symmetric and Asymmetric Lamination Processes

- Lect. dr. eng. Vasile Alexa
- Conf. dr. eng. Imre Kiss

46. Applied Management and Human Resources in the Companies practices

- Lect. dr. eng. Vasile Alexa
- Conf. dr. eng. Imre Kiss

47. Approaches of Rolls Quality Assurance. Modeling and Optimization in the Rolls Manufacturing

- Conf. dr. eng. Imre Kiss
- Lect. dr. eng. Vasile George Cioata
- Lect. dr. eng. Vasile Alexa
- Lect. dr. eng. Gabriela Mihut
- Lect. dr. eng. Ana Josan

48. Optical study of the solid surfaces and surface films

- Assoc. prof. dr. Jitian Simion
- Dr. Ion Bratu, INCDTIM Cluj-Napoca, Dept. Fizica Sistemelor Nanostructurale

CONTACT

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