
***ANNALS of FACULTY ENGINEERING HUNEDOARA
– JOURNAL of ENGINEERING”***



since 2003

■ **DEAR COLLEAGUES,**

“ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING” is an international and interdisciplinary journal which reports on scientific and technical contributions.

Scientists and engineers with an interest in the respective interfaces of engineering fields, technology and materials, information processes, research in various industrial applications are invited to publish in our journal. “ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING” publishes articles of interest to researchers and engineers and to other scientists involved with materials phenomena and computational modeling.

■ **ABOUT THE “ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING”**

The “ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING” (ISSN 1584 – 2665, for printed version, ISSN 1584 – 2673, for electronic format) has been published since 2003, in English, replacing the “ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING” (ISSN 1454 – 6531), that appeared regularly since 1999, in Romanian. The “ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING” has been issued on a regular basis since 2003, twice a year in printed form (FASCICULE 1 and FASCICULE 2) and once a year in electronic format (FASCICULE 3). We mention that our intention is to include the “ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING” in the international databases, and this is the main reason we are trying to advertise it in ROMANIA and abroad. In the name of the FACULTY OF ENGINEERING HUNEDOARA, the entire professor’s collective, and, of course, in my personal name, we thank you for the attention. We are looking forward to a fruitful collaboration and we welcome you to publish in our “ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING”. This JOURNAL is a good opportunity for the researchers to exchange information and to present the results of their research activity. We hope that it will be possible to initiate future research themes and projects in the frame of bilateral or multilateral basis, including participation in EUROPEAN UNION programs.

Every year, in three issues, "ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING" publishes a series of reviews covering the most exciting and developing areas of engineering. The result is a journal that gives the scientists and engineers the opportunity to keep informed of all the current developments in their own, and related, areas of research, ensuring the new ideas across an increasingly the interdisciplinary field.

"ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING" encourages the submission of comments on papers published particularly in our journal. The journal publishes articles focused on topics of current interest within the scope of the journal and coordinated by invited guest editors. Interested authors are invited to contact one of the Editors for further details.

■ **ABOUT THE FACULTY OF ENGINEERING HUNEDOARA**

The INSTITUTE OF TECHNOLOGICAL ENGINEERING OF HUNEDOARA was founded in 1970, pursuant of the Decision of the Council of Ministers. 1271/1970. In the beginning, this institute functioned with day and evening courses in two profiles: Metallurgy, with special training in Blast Furnaces and Steelworks and Thermal Deformations and Treatments, respectively Electromechanics, with special training in Technological Electromechanics. Along the years, we also had special training in Carbon-chemical Technologies and Civil, Industrial and Agricultural Constructions in the profile Constructions. Students used to be trained in day courses (3 years) and evening courses (4 years). Until 1974, The INSTITUTE OF TECHNOLOGICAL ENGINEERING OF HUNEDOARA was subordinated to the Mining Institute of Petroșani.

Starting university year 1974 – 1975, once the network of Institutes and Faculties belonging to the Ministry of Education and Schooling was approved through the Decree of the State Council no. 147/1974, The INSTITUTE OF TECHNOLOGICAL ENGINEERING OF HUNEDOARA was subordinated to the POLYTECHNIC INSTITUTE "TRAIAN VUIA" OF TIMIȘOARA.

The DEPARTMENT OF METALLURGY appeared in 1974, and was originally the DEPARTMENT OF TECHNOLOGY, created in 1971 one year after the INSTITUTE OF HIGHER EDUCATION was founded. The department ensures the education of the students of the FACULTY OF ENGINEERING OF HUNEDOARA in the field of metallurgical processes, plastic working and thermal treatments, ferrous and non-ferrous alloy casting, metallurgical equipment and aggregates, economical engineering in the field of mechanics, the chemical and material industry. The department coordinates the education in the fields of Engineering of Metallurgical Processes (Plastic Working and Thermal Treatments, Metal Casting), Economical Engineering in the Chemical and Material Industry and the Optimization of Metallurgical Processes and Master, being in charge with the drawing up of the curricula and the coordination of the professional instruction in these fields. Starting university year 1985 – 1986, the DEPARTMENT OF CASTING was added to the already existent profiles.

The FACULTY OF ENGINEERING OF HUNEDOARA started its activity in university year 1990 – 1991, when the INSTITUTE OF TECHNOLOGICAL ENGINEERING was restructured by Order of the Ministry of Education no. 7751/1990, which approved of the long term (5 years) higher education courses at the FACULTY OF ENGINEERING OF HUNEDOARA. The evening courses for technological engineers were maintained in parallel with the engineering day courses until all the students that had started studies before 1990 graduated.

The DEPARTMENT OF MECHANICS was founded in 1995, by splitting the DEPARTMENT OF ELECTRO-MECHANICS. The teaching staff of the department covers both the fundamental objects (Linear Algebra, Analytical and Differential Geometry, Mathematical Analysis, Special Mathematics, Numerical Analysis, Physical Education) and the technical objects in the field of study, according to the respective curricula: Electrical Engineering, Economical Engineering, Industrial Engineering, Mechanical Engineering, The Engineering of Transportation, Applied Sciences, and the Engineering of Materials. The DEPARTMENT has been coordinating from its foundation the specialization in "Equipment for Hot Processing" then, since university year 2001-2002, the specialization in "Economical Engineering in the Field of Mechanics" and finally, since university year 2003-2004, the specialization in "Automotive Vehicles", being particularly interested in the contents of the curricula and the corresponding analytical programs, as well as in the carrying out of the didactical and

practical activities. For university year 2004-2005 we made the proper diligences meant to found and start the activity of a new post-university - Master course: "Advanced Methods and Means of Designing Mechanical Systems".

The DEPARTMENT OF ELECTROTECHNICS functions within the FACULTY OF ENGINEERING OF HUNEDOARA since 1995 as a result of the splitting of the Department of Electromechanics, namely: the teaching staff specialized in electricity, which at present constitutes most of the DEPARTMENT OF ELECTROTECHNICS and the teaching staff specialized in mechanics, belonging now to the DEPARTMENT OF MECHANICS. Within the DEPARTMENT OF ELECTROTECHNICS, besides the teachers specialized in electricity, also work the teachers of foreign languages, English and French and also the titular of the subject Physics. Until 2001 to this department also belonged the teaching staff of economic subjects, at present belonging to the DEPARTMENT OF METALLURGY. This department is also in charge with the TECHNICAL UNIVERSITY COLLEGE, which offers the following specializations: Technical Computer Science, Electronics, IT and Applied Electronics.

Starting university year 1993 – 1994, The TECHNICAL UNIVERSITY COLLEGE was founded, using the same human and material resources as the FACULTY OF ENGINEERING OF HUNEDOARA. Didactically and administratively, the TECHNICAL UNIVERSITY COLLEGE is subordinated to the FACULTY OF ENGINEERING. University year 2000 – 2001 meant for the FACULTY OF ENGINEERING OF HUNEDOARA the opening of the DEPARTMENT FOR LIFE LONG EDUCATION whose target is post-university professional reconversion of higher education graduates.

The research activity of the teaching staff is recognized by the NATIONAL COUNCIL OF SCIENTIFIC RESEARCH IN HIGHER EDUCATION INSTITUTIONS, which approved of the opening within the FACULTY OF ENGINEERING OF HUNEDOARA of a RESEARCH CENTER on "OPTIMIZATIONS IN THE INDUSTRY OF MATERIALS". The CENTER is involved in activities of material obtaining, automation, computer-controlled processes in material industry, endurance and safety in exploitation of materials. Since the founding of the higher education institution in HUNEDOARA, the research activity, alongside with the didactical one have been carried out starting from the needs of the industrial zone and the needs of self endowment of the departments. The DEPARTMENT OF ELECTRO-TECHNIQUES is endowed with laboratories specialized in the functioning of electric rotary machines and transformers, electric installations, electric and electronic circuits, data acquisition and processing systems, the analysis of the quality of electric energy for several consumers, the study of electromagnetic compatibility, the analysis and synthesis of automatic regulation systems for industrial processes using both classical regulation methods and methods based on the fuzzy logic, neuronal networks and experts systems.

In the laboratories of the DEPARTMENT OF METALLURGY research can be made in the field of chemistry, plastic deformations, studies related to the elaboration of ferrous and non-ferrous materials and thermal treatments.

The material resources and the infrastructure of the DEPARTMENT OF MECHANICS offer the possibility to perform mechanical trials at room and low temperatures, researches on the behavior of some machine parts in function (belts, bearings, springs, etc.) and the tribological analysis of the lubricants and various pairs of materials.

The buildings where the FACULTY OF ENGINEERING OF HUNEDOARA carries out its activity are all next to one another and they are: four buildings meant for didactical activities, one administrative building, two buildings meant for production and maintenance. Besides, the Faculty has one hostel with 38 rooms, 114 places and a canteen. Between 1973 – 1974, The IRON AND STEEL INTEGRATED PLANT OF HUNEDOARA donated the necessary funds for constructing three-storey building B, and the technological shed, having a total area of 1100 sq.m. Between 1977 – 1978, using funds offered by the Ministry of Education, we constructed in the same area three-storey building C, having a surface of 990 sq.m. and a gym hall with a surface of 600 sq.m. In the six amphitheatres, one auditorium, fourteen seminar rooms, one gym hall and thirty laboratories, we can grant the teaching process, five days a week, 4-8 hours a day. The FACULTY OF ENGINEERING OF HUNEDOARA has a library with a surface of 262 sq.m., and the book depot, with a surface of 130 sq.m. has over 95,000 volumes in store, respectively more than 42,000 titles.

Starting 1999, our Faculty has been organizing sessions of scientific communications to which participate teaching staff and researchers from numerous countries. The scientific papers presented

on these occasions are published in the "ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING", ISSN 1454 – 6531. The results of the research activities that are made public on these occasions lead to an increase of the prestige which the FACULTY OF ENGINEERING OF HUNEDOARA enjoys. The DEPARTMENT OF LIFE LONG EDUCATION of the FACULTY OF ENGINEERING OF HUNEDOARA was founded in the spring of 2000 as a result of the need to create a center in this area, capable of offering the possibility of initial or continuous professional formation, or for the re-conversion of the workforce laid off, to top fields of activity or domains that offer a sure perspective in the near future.

■ **INVITATION**

Now, when you know us, in this way, you are invited to present your activity covering the full spectrum of engineering. "ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL of ENGINEERING" is an international and interdisciplinary journal which reports on scientific and technical contributions. Thank you in advance for selecting us.

THE EDITORIAL BOARD

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