

**PREFACE – DEDICATED TO PROF. ING. PAVEL ÉLESZTŐS, CSc.
AND PROF. ING. STANISLAV ŽIARAN, CSc. ON
THE OCCASION OF THEIR 70TH BIRTHDAY**

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Abstract:

The article deals with the contribution of **Prof. Ing. Pavol Élesztős, CSc.** in the field of engineering. He was born in 1948, studied and subsequently remained at the Faculty of Engineering at the Slovak University of Technology in Bratislava since 1968. Under his leadership 6 dissertation theses were defended in the study program of Applied Mechanics. He is the author of 1 monograph, co-author of 2 monographs, author of 30 reviewed scientific articles in journals, and over 250 original scientific papers published in domestic and foreign conference proceedings. Professor Élesztős is currently a Professor Emeritus and is known as a talented teacher.

This article is a celebration of **prof. Ing. Stanislav Žiaran's, CSc.** contribution to the field of engineering. Born in 1948, since 1966 he studied and subsequently continued his academic career at the Faculty of Mechanical Engineering, Slovak University of Technology in Bratislava. He has supervised 2 dissertation and 42 diploma theses, which were successfully defended in the study programs Applied mechanics and Mechatronics. Prof. Žiaran is the author to 5 monographs, 9 textbooks, 13 university textbooks, 6 manuals for the engineering industry and more than 290 original scientific papers published in domestic as well as international journals and conference proceedings. He has translated of 111 ISO and EN standards, 107 research reports for practice and he is the editor of 20 peer-reviewed scientific proceedings Noise and Vibration in Practice. He also presented 16 requested lectures at world congresses abroad. Prof. Žiaran is a gifted teacher of mechanics and his students appreciate his enthusiasm and knowledge he is sharing with them.

Prof. Ing. Pavol Élesztős, CSc.



Prof. Ing. Pavel Élesztős, CSc. (1948) was born in Kližská Nemá. After studying engineering between 1972 and 1976 in the field of Manufacturing Machines and Equipment, he became an internal aspirant at the Faculty of Engineering at the Slovak Technical College in Bratislava (today Slovak University of Technology in Bratislava), where he received the CSc. degree in the field of Manufacturing Machines and Equipment.

The pedagogical work of Prof. Ing. Pavel Élesztős, CSc. began in 1976, when academician Prof. Dr. Ing. O. Puchner, DrSc. employed him at the Department of Elasticity and Strength of Materials in the capacity of an assistant. In 1987, he completed his studies of higher education in pedagogy at the Department of Pedagogy Slovak Technical College in Bratislava (today Slovak University of Technology in Bratislava). From the beginning of his career he devoted himself to experimental methods and later computer mechanics at the Department of Elasticity and Strength of Materials

At the Faculty of Mechanical Engineering he participated in the introduction of the first teaching aid, the Fortran program for numerical solution of linear problems of elasticity and strength. He is the co-author of two published textbooks of Continuum Mechanics and Solved examples of Elasticity and Strength of Materials. He has taught 16 subjects and has introduced or participated in 7 others. (Mechanics of Continuum, Mechanics of Power Machines, Elasticity and Strength of Materials, Applied Elasticity and Strength of Materials, Finite Element Methods in Transport Engineering, Elasticity and strength of Air Structures, Elasticity and strength in Mechatronics.

In recent years he has supervised 1 subject in the bachelor study program, 7 subjects in the field of engineering and 3 subjects in the PhD study program. He is the author and co-author of two experimental stations. Two of his students, who graduated from engineering, were runner ups for the minister's prize and another 12 graduated with honors. In 2006, one of his students was awarded a prize for the best diploma thesis in the field of Applied Mechanics in Slovakia, declared by SPP a.s.. professor Elesztos was the Slovak coordinator of the CEEPUS project between the Slovak Universities of Technology in Bratislava, Transilvania University of Brasov and Budapest University of Technology and Economics, as well as the Slovak coordinator of the EU-US ATLANTIS project. His PhD students A. Garai, L. Écsi, V. Voštiar, J. Kosnáč, P. Popelka and D. Kaločany have become important experts both at home and abroad.

Until he left the Faculty of Engineering of the Slovak University of Technology in Bratislava, he was the supervisor of the Bachelor's and Engineering program of Applied Mechanics and Mechatronics, of the Ph.D. program in Applied Mechanics, as well as the supervisor of the Habilitation and Inaugural Procedure for Professors in Applied Mechanics. As a professor he trained two substitutes for himself, Assoc. prof. Écsi and prof. Jančo, currently a professor and a supervisor in Applied Mechanics.

Prof. Élesztős is focused on the problems of temperature fields and subsequent thermal stresses of particulate matter during their technological (thermal) processing and other

technologies such as extrusion. He also dealt with the problem of thermal stresses of welded structures.

He is the author of 1 and the co-author of two monographs and 30 major scientific articles published in peer-reviewed journals, 10 of which were published in foreign journals. The domestic publications are focused on the stress-strain state of welded structures and the safety and lifetime of pressure equipment, mainly for the chemical and oil industry. His foreign publications are mainly focused on the investigation of temperature fields and the temperature fields of various technologies accompanied by heat transfer. There are 48 citations in journals or monographs, most of them published outside Slovakia.

As the head of research projects, he successfully completed 4 projects of the grant agency of VEGA, one project by the Ministry of Economy of Slovak Republic and the Slovak Coordinator of the CEEPUS project, as well as the Slovak coordinator of the EU-US ATLANTIS PROGRAM P116J0800. The extremely rich activity Prof. Élesztős is to imbed the results of scientific research into industrial projects, ensuring the safety and reliability of nuclear power facilities, chemical and petrochemical industries. He was requested to lecture both in Slovakia and abroad; holding three lectures abroad and 10 in Slovakia.

Lending his expertise, he reviewed and evaluated 17 technology projects including some focusing on industrial incidents. He also evaluated 9 VEGA grant projects. He produced 20 reviews of qualifications, articles published in scientific and professional journals. Further, in his scientific research, he dealt with numerical analysis of welding processes and problems of optimization of welding technologies by combining the finite element method and genetic algorithms.

Significant results have also been achieved in solving the non-standard problems of nuclear power and the chemical industry, which are internationally accepted by the International Institute of Welding.

He is a member of the Slovak Technical Standardization Commission no. 68 Boilers and Pressure Vessels, a member of the Slovak Engineers' Association, a member of the Slovak Society for Mechanics and a member of the Scientific Institute at the Hungarian Academy of Sciences, as well as a member of the Central European Associations for Computational Mechanics.

During his time at the Faculty of Mechanical Engineering Slovak University of Technology in Bratislava he has achieved significant results in pedagogical and scientific-research activities in Applied Mechanics. He is a recognized and respected professor and scientist both in Slovakia and abroad.

He built up a well-respected and demanding academic career at the Slovak University of Technology in Bratislava. He is a professor Emeritus at the Faculty of Engineering at the Slovak University of Technology in Bratislava

Prof. Ing. Stanislav Žiaran, CSc.



Prof. Ing. Stanislav Žiaran, CSc. (1948) was born in Jakubovany located at the roots of the Western Tatras. After finishing his study at High School in Liptovský Mikuláš, in 1966 he was enrolled at the Faculty of Mechanical Engineering, Slovak University of Technology (SUT) in Bratislava where he graduated in 1971 specializing in Instrumentation, Control and Automation Technology. After the graduation he continued in an academic career at the Department of Technical Mechanics as an assistant. During the period from 1973 to 1976 he was an internal aspirant on this department. In 1978 he defended his thesis at the Faculty of Mechanical Engineering, SUT in Bratislava. His work was focused on the noise control of combustion engines, within the field: "Mechanics of solid and deformable bodies". In 1988 he habilitated to the position of associated professor. In 1983-84 he followed a one-semester graduate study at the University of Southampton – Institute Sound and Vibration Research in UK.

Prof. Žiaran became a professor in the field of applied mechanics in 2014 with the inauguration lecture „ Low Frequency Sound and its Impact on the Environment“.

Prof. Žiaran has been teaching the following subjects: Static, Dynamics, Machine Dynamics, Experimental Methods in Mechanics, Reliability and Fault Detection. Furthermore he has established and has been giving lectures in the subjects: Noise and Vibration Control, Technical Diagnostics and Human Protection against Noise and Vibration, also in English language.

Prof. Žiaran participated in the development of Student Scientific and Professional Activity (ŠVOČ) as an organizer as well as in a role of a supervisor from 1968-1989. For a long time he was the chair of the ŠVOČ commission in Slovakia and the vice-chair in Czechoslovakia. In this field he wrote 16 original professional works and he is the author of the publication “Students and scientific and technological development”, released in 1986. He has also worked for eight years at the Academic Senate of the Mechanical Engineering Faculty.

Prof. Žiaran is the author and co-author of 22 textbooks and 5 monographs from the field of theoretical mechanics, acoustics and vibration. He was a member of the international team

preparing the Encyclopaedia of Life Support System developed under the auspices of the UNESCO, EOLSS Publishers, Oxford, UK. Furthermore, he is the author and co-author of more than 290 scientific and technical articles published in indexed and other journals and proceedings of international and national congresses and conferences. He stands behind 111 standards from the areas of mechanical vibration, acoustics and engineering mechanics. He has presented 16 requested lectures at world congresses abroad, 11 invited lectures at InterNoise (Canada, Portugal, Japan, three time in USA, Austria, twice in Australia, Germany, Hong Kong), one at EuroNoise (The Netherlands), where he organized and chaired one section, he presented two plenary lectures on NOISE CONTROL (Poland), one at the IFToMM Congress (Taiwan) and twice at the ICSV (UK, Japan) Congress. He also gave lectures at ICSV congresses in Australia, InterNoise in China, COMPDYN in Greece and ICME in South Africa.

Extremely rich is the activity of prof. Žiaran in the field of a transformation of the results from the scientific research into industrial applications, focusing on noise and vibration reduction of machines, machinery and production plants as well as in ensuring the safety and reliability of machinery and equipment in the industry. Prof. Žiaran has solved more than 120 technical and scientific problems for practice and within the framework of science-research activity at the university. As the responsible investigator, he has successfully solved over 100 projects for practice, e.g. for the Liptovské strojárne (1994), St. Nicolas L. Mikuláš (1994), Chirana-Prema Stará Turá (1995), ISTROENERGO Levice (1995), IZOMAT Nová Baňa (1995-1996), KONSTRUKTA Industry Trenčín (1999), VOLKSWAGEN (2001–2003), KOMEKO Stará Ľubovňa and C-bau Bratislava and MOVET Piešťany and ENERGOPLYN Bratislava (2000-2012), CNIM BABCOCK Bratislava (2002), SES Tlmače (2004), SIROCCO Austria (2005), PSL P. Bystrica (2005), WITZENMANN Slovakia (2006), Nitrasklo (2006), EMERSON Nové Mesto nad Váhom (2006, 2016, 2017)), Inergy Automotive System, Lozorno (2007), TRANSPETROL (2008, 2011), DOLVAP Varín (2007-2009), EUSTREAM Bratislava (2008), ŽSR Bratislava (2008), CEMMAC Horné Srnie (2009-2010), KINEX Bytča (2015), Industrial Risk Consulting Bratislava (2015), VEOLIA Bratislava (2016), GE POWER Brno (2016, 2018), SLOVAKIA RING AGENCY (2018).

Prof. Žiaran used his expertise in a preparation of 10 assessments of grant projects, application of EU directives and has evaluated 12 grant projects of APVV, VEGA and GAČR. He reviewed more than 90 monographs, textbooks, patents, inaugural proceedings, habilitation and dissertation theses, scientific articles in well-recognized indexed journals.

For a long time Prof. Žiaran was a chair of the Technical Committee of Acoustics and Mechanical Vibration at the Slovak Institution for Standardization, and he is a chair of the NC IFToMM MO Slovakia, chair of the Noise and Vibration Control sub-branch at the Slovak Acoustic Society, chair of Noise and Vibration sub-branch at the Slovak Society of Environmental Technology, chair and editor of the proceedings of the annual conference Noise and Vibration in Practice (23 conferences organized). He is an assessor of the Slovak National Accreditation Service, branch Sound and Vibration. The pedagogical, scientific and managerial activities of prof. Žiaran have been acknowledged by many important honours.

The most notable are: silver medal (2008), gold medal (2013) and plaque (2018) ZSVTS for Science and Technology Development, and he is the "Propagator of Science and Technology" award holder for 2014, he holds the award of assoc. prof. Ján Valenta for his long years of work in area of Ventilation and Air conditioning, and the award of prof. Pekarovič for his work in the field of Heating. He has the highest awards of the SZM for the development, promotion and organization of student scientific and professional activity in Czechoslovakia. He is a member of the international organizations of EAA, I-INCE and IFToMM.

At the present time prof. Žiaran dedicates his professional work to the problems of noise and vibration control, the transmission of vibro-acoustic energy through the environment and its effects on human beings, low frequency noise and vibration and echoes of seismic wave constructions, the vibro-diagnostics of machines, determination of the quality of machines and their parts, and solving problems from other areas of applied mechanics and acoustics.

Prof. Žiaran is a gifted teacher and supervisor. He has always provided his students the utmost support, shared his valuable knowledge and his enthusiasm inspires them. To be his student was a great honour and a reward. To celebrate Professor Žiaran's 70th birthday, we dedicate this special issue of the AMS to him. There are a number articles in this issue which have been contributed by his former students, colleagues, and friends. We are grateful to all authors who have endeavoured to bring about a refreshing novelty in this special issue.