

From the Guest Editor

On the occasion of the 50th anniversary of the Faculty of Mechanical Engineering in Niš

Faculty of Mechanical Engineering in Niš was founded in 1961 as the Department of Mechanical Engineering of the Technical Faculty of the University of Niš. In 1971 Department evolved in Faculty of Mechanical Engineering and became an independent part of the University of Niš.

The Faculty of Mechanical Engineering in Niš is today a reputed educational and scientific institution, whose basic activity is high education at all levels of teaching, as well as basic and applied research in mathematical, natural, and engineering sciences, followed by development of modern technologies. Presently, around 100 teachers and associates are engaged at the Faculty. Large number of Ph. D. candidates and students, supported through the Ministry of Education, Science and Technological Development scholarships, are involved in the teaching process and realization of the research projects.

The Faculty of Mechanical Engineering has 9 departments within which the academic staff, professors and associates, conduct their teaching and research activities: energy and process engineering; mechatronics and control; development, design and engineering of mechanical constructions; production and information technologies and management; traffic and transport engineering and logistics of the mechanical constructions; applied mechanics and mathematics. Teaching is conducted at all levels of high education: undergraduate, M. Sc., and Ph. D. studies. Students can choose one out of 5 study programs, accredited by the Ministry of Education, Science and Technological Development.

Practical training and experimental research are carried out in 19 laboratories, primarily intended for teaching students and research activities of the academic staff and Ph. D. students. Some of these laboratories are also accredited for the examination and testing of various products, and to provide services to the industry.

Over the last 50 years of the Faculty of Mechanical Engineering in Niš, a reliable basis for teaching and research has been formed, with a substantial amount of experimental facilities and measurement equipment being installed at the Faculty. This equipment offers numerous possibilities for successful scientific, developmental and experimental research necessary for higher education and industry.

On the occasion of the 50th anniversary, to honor this jubilee, the Faculty of Mechanical Engineering prepared a special edition of the journal *Thermal Science*, highly placed journal on the list of the internationally renowned journals covering the basic processes in the modern topics of thermal engineering, thermoenergetics, process engineering, and energy efficiency.

Publication of the scientific results in the journal *Thermal Science* presents a challenge to researchers in Serbia and even abroad, especially for young researchers, who are just entering the global scientific stage. By publishing results of their work in this journal, young researchers can enter the world of science, which will in turn offer them a possibility to see

evaluation and critics of the results of their research, and to compare their results with results obtained in other countries. This way, they can receive appropriate acknowledgement for their work, as well as useful comments and suggestions for their future research, improvement, and development.

This special edition of the journal *Thermal Science* collects 29 papers presenting results of the investigations carried on by the academic staff of the Faculty, professors, lecturers, and Ph. D. students. A lot of papers present results of the joint research projects realized in co-operation with researchers from many other faculties in Serbia, which have had a long and fruitful co-operation with the Faculty. The papers presented in this special edition of the journal *Thermal Science* resulted mostly from the projects funded by the Ministry of Education, Science and Technological Development, international projects, and Ph. D. thesis with thermal processes as research basis.

The papers presented in this issue encompass a wide spectrum of fields (fluid mechanics, thermal engineering, thermoenergetics, energy efficiency in building construction, welding, mechanical constructions, hydraulic engineering, engines *etc.*) and deal with current, modern problems within various scientific disciplines. The papers offer the most significant scientific and expert results in specific areas, obtained recently by the researchers of the Faculty. All of the papers, regardless of the scientific field to which they belong, have one common characteristic, and that is – the focus on thermal processes. Results presented in the most of papers evidently show that thermal processes are significant, and often most critical, in all areas of research within different branches of mechanical engineering. All of the papers were reviewed in line with the high standards of the journal *Thermal Science*, the same ones which are internationally accepted for scientific journals.

In my name, and in the name of my colleagues, co-editors Prof. Dr. Dragica Milenkovic and Prof. Dr. Gradimir Ilic, I would like to express our gratitude to our distinguished professors and scientists, Prof. Dr. Simeon Oka, editor-in-chief of the journal *Thermal Science*, and Prof. Dr. Milan Radovanović, president of the Society of Thermal Engineers of Serbia, for being full of understanding, despite all their obligations, and willing to accept the initiative to publish this special edition of the journal *Thermal Science* on the occasion of the 50th anniversary of the Faculty of Mechanical Engineering in Niš. They selflessly and fully offer help during realization of this issue, which was of utmost importance for the Faculty.

We would also like to express our gratitude to professor Dr. Vlastimir Nikolić, Dean of the Faculty of Mechanical Engineering in Niš, on starting the initiative to publish the special issue of the journal *Thermal Science* on the occasion of the 50th anniversary, as well as on the support and understanding he expressed during the realization of this special, significant edition.

Finally, we would like to take this opportunity to thank all those who have contributed to the publication of this special issue, particularly our young colleague Dr. Miroslav Mijajlović, who helped and contributed to the realization of this issue through his hard work and dedication, both in the organizational and technical sense, and Miloš Tasić, English language instructor at the Faculty of Mechanical Engineering in Niš on careful proofreading and help provided to the authors during the final preparation of the text.

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Guest editor of this special issue

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