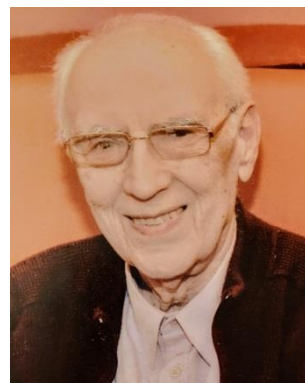


## IN MEMORIAM

### ***Prof. Kosta D. Maglić***

(1934-2018)

***Department for Thermal Engineering and Energy  
Vinča Institute of Nuclear Sciences  
Full member of the Academy of Engineering Sciences  
of Serbia***



Professor Kosta D. Maglić, an internationally distinguished researcher in the field of thermophysical properties, passed away on April 16, 2018, in Belgrade, Serbia. He is mourned by his wife Gordana, magister of technology, by his son Rastko, doctor of gynaecology and obstetrics, and by three grandchildren, along with the entire thermophysics and temperature communities.

Professor Kosta Maglić was born on June 6, 1934 in Zagreb, from mother Vera and father Dimitrije, pre-WW2 engineer of the Technical University of Prague. He graduated first from the Third Male High School in Belgrade and next, in 1960, from the Faculty of Mechanical Engineering in Belgrade. His research interest was shown as early as in the final years of the faculty when he performed, under the leadership of Professor Trbojević, complex friction testing on various metals and alloys. In 1959, he wrote his first article, which was later rated as the best student work of that year.

Shortly after the graduation, he and his colleagues from the faculty, Ljubomir Jovanović, Miodrag Stefanović, Simeon Oka, and Aleksandar Bratić, joined the *Boris Kidric Institute for Nuclear Sciences* in Vinca, *i. e.*, the former Laboratory for Reactor Thermotechnics and Materials. They started various research in the field of thermal science related to nuclear power generation, which was a part of a huge federal scientific programme of the former Yugoslavia.

The first scope of prof. Maglić's research was thermal contact resistance between nuclear fuel and metal clad. It was a very important problem because the uranium fuel melted at a relatively low temperature limiting the maximum allowed temperature of the fuel in contact with the clad. However, solving the thermal contact problem implied, among others, a precise knowledge of thermophysical properties of the materials used, and, at that time, these properties were very little known in the world. Hence, prof. Maglić initiated research in that area and, in 1964, Laboratory director Miša Novaković sent him to visit two European laboratories, LNE in Paris and NPL in London. In addition to the acquired knowledge in the field of thermophysical properties measurement, prof. Maglić taught for the first time about the techniques of primary temperature measurement, which he would use later to introduce this field in the scope of his laboratory. Both of these areas, thermophysical properties and temperature measurement, were simultaneously developed in the *Vinca* Institute under his leadership.

Following the establishment of a thermophysical laboratory when his team designed and developed the first apparatus for thermal conductivity measurements of solid materials, prof. Maglić went to postgraduate studies at the University of Cardiff, Cardiff, UK, where he received a master's degree in 1968 on the topic of high temperature properties of semiconduc-

tor materials. Upon his return from Cardiff, he expanded his research area to measure enthalpy and specific heat of solid materials at high temperatures.

At the end of the 1960s and early 1970s, succeeding the advancement of technology and entry into the digital age, prof. Maglić and his associates started developing non-stationary methods for measuring thermophysical properties. He designed and built an apparatus for thermal diffusivity measurement by the laser flash method up to 1500 °C for which he and his associates received an annual award of the Yugoslav Association for Electronics, Telecommunication, Automatics and Nuclear Technics (ETAN) in Split in 1971. At that time, the laser method was used only in a few thermophysical laboratories in the world, so thanks to this achievement Maglić's laboratory gained the first international reputation. Later on, another non-stationary experimental technique was added to the laboratory's scope, the pulse calorimetric method for the measurements of specific heat, specific electrical resistance and total hemispheric and spectral normal emissivity of metals and alloys up to over 2000 °C.

Along with his research in the field of thermophysical properties, in 1970s prof. Maglić began work on establishing the standard methods of temperature measurements used in thermophysical characterization, as well as on improving the system of temperature metrology in Serbia. The latter work turned into the field of primary temperature metrology, where in co-operation with Gordana Danković from the Federal Institute for Measures and Precious Metals and associates from his laboratory developed the first national standards for temperature. Primary and fixed temperature points made in prof. Maglić's laboratory, such as that of the triple point of water, have long been used as the reference standards in former Yugoslavia.

In 1970, prof. Maglić was elected secretary general of the Yugoslav Society of Thermal Engineers and the next year he became the executive secretary of the International Centre for Heat and Mass Transfer established in 1968. By performing these two functions, prof. Maglić made significant contacts with people who led the development of thermal science in country and abroad, which resulted in scientific and technical co-operation with many renowned national and international laboratories and institutions.

As a participant of the European Conference on Thermophysical Properties (ECTP), the largest international conference on thermophysical properties of materials, from its beginning in 1968, prof. Maglić organized the same conference in 1978 in Dubrovnik. Following this organization, prof. Maglić became a member of the International Organizational Committee of the ECTP and gave regularly support to its further work. After the successful organization of the European Conference in Dubrovnik, prof. Maglić in 1979 was awarded as a fellow of the International Conference on Thermal Conductivity in Chicago as a distinguished thermophysicists. At that time, he initiated an international project aiming to synthesize knowledge in the field of experimental thermophysics and standardize the methods used in leading laboratories all over the world. He co-ordinated this project together with Dr. Ared Cezairliyan from the US National Bureau of Standards and Dr. Vladislav Peletsky from the Institute of High Temperatures of the Russian Academy of Sciences where they co-operated with a total of 29 leading world scientists in various fields of thermophysical characterization. The project resulted in the publication by Plenum Press of the first volume of the Compendium of Thermophysical Property Measurement Methods in 1984 and of the second volume in 1992. In the same year when the first book of the Compendium came out, prof. Maglić defended her Ph. D. at the Faculty of Mechanical Engineering in Belgrade on the topic of a critical analysis of methods and data on the thermal properties of materials.

During the 1980s, prof. Maglić conducted intensive scientific co-operation with the Purdue University of Indiana, Indianapolis, Ind., USA, the National Bureau of Standards in

Colorado, the French National Aviation Laboratory and the German research center KFA in Juelich, as well as with the International Atomic Energy Agency in Vienna related to research of thermophysical properties of materials for water reactors. During the 1990s, he started co-operation with the National Institute for Applied Sciences in Lyon, France.

Throughout his career, prof. Maglić conducted numerous projects for the characterization of high-temperature standard reference materials and results of many of them were published in leading international journals. In the area of temperature metrology with the Federal Institute for Measures and Precious Metals, he conducted the implementation of new fixed temperature points in accordance with the new international temperature scale, ITS-90. In 1995, he was elected as a full professor at the Faculty of Physics in Belgrade and, in the following year, he and his associates, Gordana Danković, Ljubiša Zeković, Nenad Perović, and Andrej Stanimirović, received the October Award of the City of Belgrade for their monograph *Primary thermometry*.

At the beginning of the new millennium, prof. Maglić was elected as a full member of the Academy of Engineering Sciences of Serbia. As a crown of his career work and commitment to science, for his outstanding contribution to the research in the field of thermophysical properties and devotion to the dissemination of knowledge in this field he received in 2002 at the 16<sup>th</sup> European Conference on the Thermophysical Properties of Materials in London the European Thermophysics Award. This award was given by an international committee consisted of eminent scientists from universities and national institutes from Austria, France, Germany, Great Britain, Greece, Italy, Japan, Portugal, Russia, Slovakia, and USA.

After retirement, for many years, prof. Maglić remained active and dedicated to research for the rest of his life, participating in the work of the Academy, carrying out numerous reviews for international and national journals and strongly supporting associates of his laboratory. As one of his closest associates, I had a great privilege and pleasure to work and co-operate with prof. Maglić. I learned many valuable lessons from his teachings, not only about actual research, but also about how projects are run, how to write scientific papers, speak at scientific conferences, and conduct negotiations on new projects. My strongest memory on his attitude is that work and a continuous desire for personal development are the most important things in one's career. In addition to his dedication to science, he was endowed with universal human virtues – honesty and integrity, as well as with readiness to transfer his knowledge and experience to others.

At the end, I would like to emphasize that prof. Kosta Maglić always spread optimism and kindness to his associates and friends. He gave all his strength to develop a reputable laboratory and to build strong relations in the thermophysics and thermometry communities. Many friends and colleagues of these communities are offering sincere condolences to his family.

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