It is not easy to write about someone who is not with us any more, especially when it is someone who left an important imprint on many people’s lives. In this case it is about Prof. Marija Kosec, or Marička, as almost everyone addressed her, who passed away on December 23, 2012.

She was born on September 5, 1947, as the older daughter in a family with three brothers, in a small village called Šinkov Turn, near Vodice. She would often recall how she enjoyed helping her father and brothers in the woods or how she picked blueberries during summer holidays to earn money for school books. She won a bicycle at a competition at elementary school; I wouldn’t be surprised if it was related to natural sciences, probably mathematics. After finishing chemistry secondary school she decided to study chemical technology at the Faculty of Natural Sciences and Technology, University of Ljubljana. She financed herself with a scholarship from the company Iskra and by giving lessons in chemistry and mathematics. During her studies she met Aljoša, who was later to become her husband. Together they were involved in a serious accident during research related to her bachelor’s thesis when the valve of a cylinder of chlorine gas simply fell off while she was trying to open it, presumably due to corrosion, resulting in the release of chlorine gas into the laboratory. Fortunately, someone’s rapid intervention and a rush to the local hospital prevented a tragedy.

After finishing her undergraduate studies in chemical technology in 1970 she obtained a position as a research assistant at the Ceramics Department of the Jožef Stefan Institute (JSI), led at that time by Prof. Drago Kolar. As a former recipient of a scholarship from Iskra, she was involved in development work related to the company, and her early research involved technical porcelain and resulted in a new composition for the low-alkaline porcelain used for insulating elements, which was subsequently introduced into production at the company’s Iskra Keramika (Iskra Ceramics).

In 1975 she finished her master’s studies in chemical technology at the University of Ljubljana with a thesis on the processing and properties of piezoceramics based on $(K_{0.5}Na_{0.5})NbO_3$ (KNN). She published her first paper (Mater. Res. Bull., 1975), which more than 25 years later was to become a seminal, highly cited paper on sintering of this lead-free piezoceramic, an environment-friendly alternative to the commercially dominant, lead-based piezoceramics, such as lead zirconate titanate (PZT).

Her PhD thesis (1982) at the University of Ljubljana was on phase relations in the CaO–UO₃–UO₂ system. She performed a part of her research at the Institut für Gesteinshüttenkunde der Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen, Germany (October 1978 – April 1980). During this period she used thermal analysis to follow phase relations in the studied oxide system. She used to tell how she kept commuting from the institute in Aachen to the (present) Forschungszentrum Juelich to perform her experiments, and finally how she came back with a carload of books and memories of a fruitful period filled with discussions on science and life in general.

In the mid-1980s she became responsible for a project for the Yugoslav Military Technical Institute in Belgrade, as part of which she developed the processing of optically transparent lead lanthanum zirconate titanate (PLZT) ceramics and the fabrication of prototypes for electro-optical shutters in collaboration with physicist colleagues from the Condensed Matter Physics Department, JSI. The process of two-step sintering of ceramic elements (final diameter 75 mm) with an almost theoretical density lasted about a week, and much later she would tell how difficult it was to wait over the weekend to see if an element survived the hot-pressing cycle without cracks or not. It may be that it was in this period that she discovered her talent for ceramics processing; a talent that could perhaps be described as a mixture of the ability to precisely observe and to understand the chemical and physical background of processes occurring in the materials.

Her experience in the processing of lead-based piezoelectric ceramics, such as PZT, and also early work on its lead-free alternative KNN, led to the participation of her group in the first European Framework Project (6FP) on lead-free piezoelectrics. Furt-
and institutes. She was also an Adjunct Professor at Xi’an Jiaotong University, China. She was an inspiring advisor to many PhD students at the University of Ljubljana, the Jožef Stefan International Postgraduate School and the University of Oulu, Finland.

She served as a member or chair of many scientific societies, committees or advisory bodies, both in Slovenia and abroad. She was the only female member of the Academy of Engineering Sciences of Slovenia since its establishment in 1995, and in 2005–06 acted as its president. Since 2001 she was a member of the Ferroelectronics Committee at the IEEE.

She was the author or co-author of more than 300 scientific papers in international journals and about 15 chapters in books. She gave more than 150 invited talks at international conferences and at different research institutions, including Max Planck Institute, MIT, Tokyo Institute of Technology, and at important Japanese producers of electronic components, including Murata, TDK, Panasonic and Toshiba. In 2000 she chaired the Electroceramics Conference, in 2003 the European conference “Processing of Electroceramics” and in 2006 the 4th European Microelectronics and Packaging Symposium. As a strong supporter and also the President (1996–2005) of the Society for Microelectronics, Electronic Components and Materials (MIDEM) she chaired the 48th International Conference on Microelectronics, Devices and Materials with the Workshop on Ceramic Microsystems (MIDEM) in September 2012, however, due to her rapidly progressing illness she was not able to take an active part in the event.

In recognition of her achievements she was awarded the title Ambassador of Science of the Republic of Slovenia (2003). She was the recipient of the Zois Award, the highest national science award in 2006. In 2009 she received a Puh Recognition for the implementation of her research results in industry. In 2010 she received the Ferroelectrics Recognition Award, IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society for her significant contributions to processing science and the technology of ferroelectric powders, bulk ceramics, thin and thick films.

Above all, she enjoyed life. In addition to numerous professional duties and achievements, which required her full commitment and, clearly, a lot of time and energy, she enjoyed many outdoor activities. As a young woman she collected medals at skiing competitions at the JSI. She spent her holidays hiking and mountaineering with her husband and friends. They discovered the wilderness of the Andes, Kilimanjaro and Siberia, to name just a few. Her knowledge of mushrooms was extensive. Once during an excursion of the whole department to Pokljuka she had an improvised lecture on mushrooms and without further ado picked enough for everyone to taste. At home, she loved her flower and vegetable garden and took great care of it.

The world of science has lost not only a great scientist, but also a woman who was able to accept challenges and solve them with optimism and a positive approach. She is greatly missed by her colleagues and friends, both at home and abroad.

In this special issue of Acta Chimica Slovenica, dedicated to the late Prof. Marija Kosec, you will find fifteen articles written by colleagues and friends from Slovenia, and from some friends from abroad who worked for some time in her group, covering the topics of materials science and chemistry of materials.

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