PREFACE

1. IN REMEMBRANCE OF PROFESSOR JÓZSEF FARKAS – A PROFESSIONAL LIFE DEDICATED TO STRUCTURAL OPTIMIZATION (15 DECEMBER 1927 – 15 SEPTEMBER 2016)

Professor Farkas graduated as a civil engineer from the Technical University of Budapest in 1950 and began teaching at the University of Miskolc. Between 1950-59 he taught at the Department of Mechanics and from 1959 at the Department of Materials Handling, now Department of Materials Handling and Logistics. In the past more than six decades, he developed courses on Metal Structures, Welded Structures and achieved an international reputation. The international novelty of these courses is that they are devoted to the design of structural components of machines and load-carrying structures. They consider dynamic effects, stiffness and vibration damping. These features made them suitable for the modular academic system of the Faculty of Mechanical Engineering and Informatics. The most important features of these courses consist in the application of mathematics, mechanics, optimization methods and applicability in the engineering practice. Optimum design provides a wide horizon, which is necessary for engineers. Based on Professor Farkas's work, the students of the faculty can obtain a comprehensive overview of the design of metal and welded structures.

Professor Farkas was one of the first who realized the importance of the application of computers in structural optimization. It must be pointed out that economic aspects are also considered in optimization by means of self-developed cost functions.

The theoretical calculations are complemented in most cases by experimental measurements carried out in laboratories, or in the field.

His complex approach resulting from the structural synthesis has had a great effect not only on his students, but also on his colleagues at the university and the engineers practicing in the industry.

In 1996 he retired and since 1998 he has been working as Professor emeritus, continuing his previous work unrelentingly. He gave lectures week by week, offered the students advice on their design assignments and guidance on writing theses. Related

to his tutorial activity he published a university textbook entitled *Metal Structures* in 1974. The second and revised edition came out in 1983. In 2016 a new textbook was published with Károly Jármai, entitled *Innovative Design of Metal Structures*.

About his teaching activity he was involved in the programs of welding engineers as well as in those offered to foreign students in English since beginnings. He joined the PhD training at the beginning and was the scientific advisor of several PhD students.

His scientific activity was continuous and undiminished for decades. He obtained his Ph.D. degree in 1966. His thesis was devoted to the design of stiffened plates. He obtained the title doctor of the Hungarian Academy of Sciences, i.e., the DSc degree, which is equivalent to the German habilitation, for a thesis on the optimum design of metal structures in 1978. After being revised and supplemented, his DSc thesis was published under the title *Optimum Design of Metal Structures* by Ellis Horwood, Chichester, UK and the Hungarian Publishing House Akadémiai Kiadó, Budapest in 1984. The book won a Hungarian Academy award.

His other books *Analysis and Optimum Design of Metal Structures*, and *Economic Design of Metal Structures*, were published by Balkema, and Millpress Science Publishers in Rotterdam, in 1997 and 2003, respectively. Later, two other books have been published: *Design and Optimization of Metal Structures*, by Horwood Publishers in 2008 and *Optimum Design of Steel Structures*, by Springer Verlag in 2013. His coauthor was one of his former students, Károly Jármai. Beside the books he has published about 250 papers and studies. Half of them were written in a foreign language, mainly in English. He read articles in five languages: English, German, Russian, Slovak, Polish. He held lectures also in English, German and Slovak languages.

His expertise was utilized by the industry as well. His main research areas are as follows: optimum design of metal structures, residual welding distortions and stresses, tubular structures, stiffened plates, sandwich structures, vibration damping and stability problems of steel structures.

His nearly seven-decade-long activity in the field of structural optimization should be especially highlighted. His optimum design methods can be used in other disciplines as well. He covered the application of design methods for various materials handling machines and equipment: cranes, crane runways, silos, bunkers, conveyor galleries, frames, cellular plates, tubular structures. In the field of machine tools, he also worked out a course for welded structures, mainly press frames.

His main external activities were in the Welding Division of the Scientific Society of Mechanical Engineers (GTE), the International Institute of Welding (IIW) and the International Society for Structural and Multidisciplinary Optimization (ISSMO). The Scientific Society of Mechanical Engineers awarded him the Pattantyús Medal. He was also awarded the Apáczai Csere János Award and the Memorial Medal of the 45-year-old Technical University of Kosice. He became Dr. Honoris Causa of the University of Miskolc in 2002.

He attended the Annual Assemblies of IIW and the symposia on Tubular Structures, organized by the Subcommission IIW XV-E for several years.

His international co-operation ranged from Japan to Canada. He established connections with professors from all over the world, as illustrated by the list of participants of the international conferences we have organized in the last 20 years.

His role in the Department of Materials Handling and Logistics was crucial. He was the head of the Division of Metal Structures. He was the scientific supervisor of several specialists in engineering optimization: Dr. habil. Imre Tímár, Prof. Károly Jármái, Ferenc Orbán, Sándor Rácz, László Szabó, Ferenc Szabó, György Kovács. He gave the first initiative for the research work of some professors, including the member of the Hungarian Academy of Sciences István Páczelt, Dr. habil. Mátyás Matolcsy and József Cselényi.

He was an excellent lecturer. He had the gift to present highly complicated ideas, relationships, lines of thoughts in an elegant and simple manner and to make his audience understand what at first seems to be difficult.

His personal hobby was listening to and playing classical music. He played baroque and classical music on the electronic organ. He published three books about baroque music and composers. He made four music CD-s, playing himself on a synthesizer.

All his former colleagues, students and co-workers remember Professor Farkas and keep him in their minds.

Miskolc, August 24, 2017

Károly Jármái

2. IN REMEMBRANCE OF PROFESSOR IMRE KOZÁK – A PROFESSIONAL LIFE DEDICATED TO MECHANICS OF SOLID BODIES (21 AUGUST 1930 - 17 NOVEMBER 2016)

Professor Kozák graduated from the University of Miskolc in 1954, was working for the university since then till his death. He chaired the Department of Mechanics from 1971 till 1993 and had a very significant influence on the scientific activity of the department in various ways: as a scientific leader of promising young PhD students and by starting a separate track in applied mechanics. He was a founder of JCAM and supported the journal in every possible way, which included reviewing a number of papers devoted to various problems in mechanics of solid bodies and he also did his best to find financial support so that we could come out as an open access journal. Volume 10, Number 2 in 2015 is dedicated to two excellent scientists: one of them is Professor Imre Kozák, who was 85 years old in that year. The Preface to that issue is a summary of his scientific carrier – we kindly refer our readers to that issue in which a detailed scientific biography can be found:

(<http://www.mech.uni-miskolc.hu/jcam/>).

Miskolc, September 21, 2017

György Szeidl