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IN MEMORIAM

1933 - 2004

On the 12th June 2004 died our colleague, friend and prominent scientist Prof. Ivan Daskalov. Prof. Ivan Daskalov was born in 1933. He graduated from the Faculty of Electrical Engineering at the Technical University of Sofia in 1957. His Ph.D. thesis (1972) was on complex electrical stimulation for physiological research, and his D.Sc. work (1975) was on screening analysis of vital signs. He was professor of Biomedical Engineering at the Medical Academy since 1976, as well as Director of the Institute of Medical Engineering there. Since 1994 he has been Director of the Centre of Biomedical Engineering of the Bulgarian Academy of Sciences.

Prof. Daskalov's research, both theoretical and applied, is in mainly in the field of biomedical signal analysis, electrical stimulation, ultrasound diagnostics, and instrumentation for physiological research. An immense number of diagnostic and therapeutic devices have been designed by teams led by him, and manufactured in Bulgaria and abroad.

A radically new concept for ECG signal acquisition, pre-processing, analysis and visualization was developed for the first time under Prof. Daskalov's guidance during the period 1984-1992. This unique method includes compact amplifier structures for synchronous recording of the standard 12 leads, digital procedure for total elimination of power-line interference without affecting the ECG spectrum components, and suppression of the base-line drift. Prof. Daskalov's instrumentation lab was among the pioneers who used microprocessor-based automatic ECG interpretation in clinical electrocardiographs, and implemented microdot thermal printers as output devices, providing for economical presentation of optimally aligned non-disturbed multichannel traces with added alphanumerical data. Nowadays, the majority of these techniques is widely implemented in almost all ECG instruments and PC-aided systems.

The latest front-line contributions of Prof. Daskalov included shape optimisation of the defibrillation pulses and modelling the current distribution under the defibrillation electrodes. This helped minimize the energy and led to improved reliability of heart's activity restoration.

On another front, Prof. Daskalov recently proposed and tested short bursts of biphasic pulses combined with drugs in electrotherapy of malignant skin tumours. This method proved to be both more efficient and better tolerated in a number of patients.

Prof. Daskalov is the author or co-author of over 150 publications, a lot of them in prestigious international journals, and 45 national patents, 5 of which were also registered in France and the USA.

He has been Member-Founder, Vice-President (7 years), President (11 years) and Honorary President (since 1996) of the National Society of Biomedical Physics & Engineering. Recently, he was elected a Fellow of the International Academy of Medical and Biological Engineering.

Prof. Daskalov spent plenty of time on educational activities. He has been Visiting Prof. in the University of Patras, at the Interuniversity Centre for Education on Medical Radiation Physics and Engineering in Plovdiv, and at the Technical University of Sofia. He has been the respected and beloved tutor of a number of Ph.D. students, nationally and internationally.

Prof. Daskalov has been invited very often to serve as a as reviewer with several national and international peer-reviewed journals on Biomedical Engineering. He has been on the National Scientific Boards of Electronics and Computer Science (President since 1999), as well as of Automation and Control Systems, member of the National Accreditation Commission, and member of the Medical Science Fund. By the time of his death Prof. Daskalov was Editorial Board member of the journals "Achievements of Medical Physics" –Warsaw, "Electrical & Electronic Engineering – Sofia" and "Biomedical EngineeringOnline".

Prof. Daskalov is widely considered the founder of the Bulgarian School of Biomedical Engineering, the doyen who contributed to the professional growth of many scientists in this field. We lost with his decease a part of ourselves. Peace to his ashes. Let his soul rest in peace. The best manner to express our tribute to him is to continue his professional course.