

## The 90<sup>th</sup> anniversary of Professor Evaldas Pacauskas

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On 16 August 2006 Evaldas Pacauskas, one of the most eminent Lithuanian chemists celebrated his 90<sup>th</sup> birthday.

Born in 1916, he graduated from the Polish Adomas Mickevičius Kaunas gymnasium in 1933 and studied chemistry at Kaunas University. In 1945, invited by Prof. J. Janickis, he began working for Physical Chemistry Department as a laboratory assistant and remained there after graduating from the University in 1947. He worked as an assistant, then as an associate Professor. His acquaintance with Professor of physical chemistry J. Janickis who later became his research supervisor induced E. Pacauskas' interest in inorganic chemistry and electrochemistry of sulfur, selenium and tellurium compounds. In 1952 E. Pacauskas defended his Ph. D. work "Hydrolysis of sulfur dichloride" devoted to polythionic compounds and in 1957 he became a docent. Thus, at the beginning E. Pacauskas' research was focused on polythionates and selenopolythionates. Theoretically, these compounds are interesting as large-molecule compounds, their molecules being based on chains of sulfur or sulfur–selenium atoms, and are intermediate products of certain redox reactions of chalcogens. Their chemistry is related to the technology of cellulose and the problem of removing sulfur compounds from industrial gases, turning them into useful chemical substances, such as ammonia sulfate and elemental sulfur, as well as to some problems of selenium technology.

The first stage of this work mainly concentrated on stating the mechanism of polythionic and selenopolythionic acid formation (co-authors J. Janickis and V. Zelionkaitė). It resulted in polythionic acids as crystalline salts with over six sulfur atoms in a molecule.

Having worked out the techniques for analysing complex mixtures of sulfur and selenium compounds (together with J. Janickis and V. Zelionkaitė in 1957) the scientists were able to increase the scope of their investigations in the field of selenopolythionates. The results of these findings were summed up in J. Janickis's article "Some Aspects of the Chemistry of Polythionates and Selenopolythionates" published in the USA journal "Accounts of Chemical Research" in 1969.

During the late 1950s Docent E. Pacauskas, jointly with Prof. J. Janickis, turned their attention to electrochemistry of selenium compounds. The first experiments were related to electrolytic oxidation of selenothionates. Then the experiments acquired a more practical bias and developed into a more practical contemporary scientific school characteristic of the Department of Physical Chemistry until approximately 1990. Special polarographic met-



Professor Evaldas Pacauskas (about 1965)

hods were worked out to determine the presence of selenium and its compounds in concentrated sulphuric acid as well as the ways of eliminating them from acids by means of electrolysis without diluting them (co-authors: J. Janickis, G. Buinevičienė, E. Rinkevičienė).

Heavy metal selenides possess a number of valuable properties: they are used as semiconductors, electrographic substances. Thin layers of them are obtained by condensation in vacuum, i.e. by evaporating them on particular bases in vacuum. J. Janickis, E. Pacauskas et al. attempted to obtain selenides of some metals by means of electrolysis. By depositing selenium alongside other metals on the cathode, selenides of various metals were obtained and investigated. The conditions essential for obtaining thin layers of selenides as well as selenium alloys with copper, zinc, silver, cadmium, antimony, lead, manganese, bismuth were determined (co-authors: V. Pilkauskienė, A. Saudargaitė, I. Lasavičienė, D. Mickevičius, S. Ryselis, R. Čepelienė). The majority of the substances obtained possess perfect semiconductor properties. The method of electrolysis surpasses the thermal one in many respects, since it does not require complex equipment and allows desired changes in the composition of an alloy. Authorship was granted for the production methods proposed. Prof. J. Janickis delivered reports on this problem both at republican and international conferences and at Karlmarxstadt (GDR) Higher Technical School in 1973.

Thus, E. Pacauskas continued his doctoral studies in the area of selenium electrochemistry and in 1973

maintained the thesis “Electrochemistry of some selenium compounds”, which resulted in a doctor’s scientific degree (now it would be a habilitation work).

In 1968, he and some of his colleagues (Prof. J. Janickis, Prof. V. Zelionkaitė, Prof. B. Stulpinas and Doc. J. Valančiūnas) were awarded the Lithuanian State Prize for achievements in sulfur, selenium and manganese chemistry and electrochemistry, and in 1979 E. Pacauskas was awarded the title of Merited Scientist of Lithuania.

In 1977 Prof. E. Pacauskas was elected Head of the Department of Physical Chemistry. He stayed in this post until 1987, then working as a Professor.

During his long teaching career Professor E. Pacauskas delivered various courses of lectures on chemistry, such as: physical and colloid chemistry (1950–1953), chemical thermodynamics (1951–1952), colloid chemistry (1951–1981), physical chemistry of silicates (since 1954), technology of glass (1959–1962); since 1977 he delivered the main course of physical chemistry for the students of chemical technology. He is author and co-author of a number of teaching books (Laboratory Experiments in Colloid Chemistry, 1963 and 1988; Laboratory Experiments in Physical Chemistry, 1961 and 1965; Laboratory Experiments in Physical-Chemical Analysis, 1965; Physical Chemistry, 1988; Laboratory Experiments in Silicate Chemistry, 1999).

He (together with colleagues at the Department of Silicate Technology) published the manual “Chemistry of Silicates” in 2000. This manual is popular among students of chemical engineering and other related specialties.

In 1959, the Department of Physical Chemistry began to specialize in training engineers of inorganic substances and fertilizers. Several generations of chemical engineers working throughout the country regard him as their teacher. Professor E. Pacauskas supervised diploma papers, he is a true patriot of chemical industry in Lithuania, the Kėdainiai and Jonava plants in particular, and did a lot to man these plants with competent specialists.

Professor E. Pacauskas’ and his followers’ scientific achievements have never lacked local and international attention. Some of their findings have been incorporated into manuals and scientific monographs. Professor deli-



Council of the Faculty of Chemical Technology, 1986. From the left, first row: Assoc. Prof. J. Zdanavičius, Prof. J. Janickis, Assoc. Prof. L. Ivaškevičienė, Prof. K. Sasnauskas, Prof. V. Zelionkaitė, Prof. A. Novodvorskis; the second row: Assoc. Prof. R. Kavoliūnas, Prof. A. Paulauskas, Prof. J. Degutis, Prof. E. Pacauskas, Prof. B. Stulpinas, Prof. J. Bernatonis, Prof. R. Baltrušis, Assoc. Prof. J. Vitkus

vered reports at numerous local and international scientific conferences. He published over 100 scientific publications. Ten theses for doctor’s degree were maintained under his supervision. Prof. E. Pacauskas paid particular attention to scientific activities of students and, encouraged by him, some of them became winners of republican as well as international competitions, later developing into well known scientists.

Professor E. Pacauskas’ main concern was scientific progress and training of both creative scientific personnel and skilled engineers-technologists for our economy.

Professor E. Pacauskas is an exceptional personality of outstanding erudition, intelligence and inner culture. His colleagues and disciples are always impressed by his diligence and responsibility. Students admired his democratic views, willingness to understand their problems, readiness to offer help.

After retirement Prof. E. Pacauskas remains an active consultant of Ph.D. students and coworkers at the departments of Physical Chemistry, Inorganic Chemistry and Silicate Technology of Kaunas University of Technology.

Congratulating Prof. E. Pacauskas on his 90<sup>th</sup> birthday, we wish him further success in all areas of his activities.

*Prof. Vitalijus Janickis*