

IN MEMORIAM



OJARS NEILANDS

(April 8, 1932 – October 27, 2003)

On October 27, Ojars Neilands passed away after a serious illness. He was an outstanding teacher, a leading Latvian organic chemist, a full member of the Latvian Academy of Sciences, Professor Emeritus of Riga Technical University, and a Doctor of Science (Dr. habil.) in Chemistry.

O. Neilands was born in Liepaja. His interest in chemistry was apparent even in elementary school, and grew under the influence of the gifted chemistry teacher Jekab Grinberg after he entered Liepaja secondary school No. 1.

In 1951, O. Neilands entered the chemistry department of Latvian State University and, while still a first-year student, began scientific research in the student science association under the guidance of Professor Gustavs Vanags and Lecturer Emilija Gudriniece. In 1956, O. Neilands defended his thesis with distinction and remained on the organic chemistry faculty, progressing from senior laboratory assistant to professor. From 1964 to 1999, he headed the organic chemistry department, and beginning in 1965 he was scientific director of the G. Vanags diketone laboratory of Riga Polytechnical Institute (Riga Technical University since 1991). For 35 years, several generations of Latvian chemists studied organic chemistry from his excellent lectures and

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textbooks. In 1977, his textbook on organic chemistry was published (O. Neilands, *Organic Chemistry* [in Latvian], Zvaigzne, Riga (1977), 798 pp.), which is used even today by students at Latvian institutions of higher education. In 1990, a revised edition of this textbook (O. J. Neilands, *Organic Chemistry* [in Russian], Vysshaya Shkola, Moscow (1990), 751 pp.) was published in Russian and recommended for chemistry students at institutions of higher education in the USSR.

In 1973, O. Neilands achieved the title of Professor; in 1989, he was elected as a Corresponding Member and in 1992 as a Full Member of the Latvian Academy of Sciences. He completed his Candidacy dissertation "Iodonium derivatives of β -diketones" under the guidance of Professor G. Vanags, and in 1961 he defended his dissertation in Moscow. Studies of the reactions of iodonium betaines opened up new routes for synthesis of betaines of 1,3-dicarbonyl compounds containing an onium residue of a heterocycle, and also new methods for introducing an arylodonium group into heterocyclic compounds. O. Neilands showed that introducing an arylodonium group into an organic molecule followed by cleavage provided new options for synthesis of compounds that were difficult to obtain by other routes. The iodonium method was extended, studied in more detail, and generalized in O. Neilands' doctoral dissertation (1971).

As the student and successor of Professor G. Vanags, O. Neilands continued the traditional studies in the field of the chemistry of β -dicarbonyl compounds. But under his guidance, many new scientific directions were developed: synthesis of monomers for heat-stable polymer materials (together with S. Trusov), development of new methods for synthesis of strong electron donors (tetrachalcogenotetracenes, tetrathiafulvalenes) and electron acceptors, use of the latter to synthesize charge-transfer complexes and radical ion salts with the goal of creating new photoconductors, semiconductors, and superconductors, organic "metals", synthesis of components for obtaining Langmuir–Blodgett films for studies in the field of molecular electronics, study of intramolecular and intermolecular charge-transfer phenomena (together with V. Kampars), investigation of new materials for the diazotype process and electrophotography. For more than 35 years, O. Neilands successfully collaborated with the outstanding Latvian physicist Academician Edgars Silinsh (1927-1998) and his successor *Dr. habil. phys.* Inta Muzikante. In the physics and molecular electronics of organic solids laboratory at the Physical and Energetics Institute of the Latvian Academy of Sciences, the electrophysical properties of compounds synthesized under the guidance of Professor O. Neilands were studied.

For many years, O. Neilands' scientific interests were focused on synthesis of novel organic compounds having unusual physical properties (semiconducting, superconducting, nonlinear optical effects), potential materials for electronics, photoelectronics, and nanoelectronics. This included derivatives of tetrathiafulvalene condensed with dioxypyrimidines and aminooxypyrimidines, capable of forming intermolecular hydrogen bonds, derivatives of [60]fullerene and pyridinium betaines of 1,3-indandione. O. Neilands was deeply satisfied by the fact that this scientific direction has been rapidly developed worldwide in recent years. He exerted considerable effort organizing international cooperation in this field with physicists and chemists in European countries and in Israel. In the week before his death, O. Neilands participated in an international conference in Moscow, made plans for the future, and prepared for a working visit to Israel and France.

Professor O. Neilands was awarded the G. Vanags Prize (1978) and Medal (1991), the State Prize of the Latvian SSR (1980), the S. Hiller Medal (1992), and the P. Valden Medal (2000). He was given the title of Honored Scientist of the Latvian SSR (1982). For his service in educating highly trained organic chemists and his important contribution to theoretical organic chemistry, in 2000 O. Neilands was given the Grindex Award by the Latvian Academy of Sciences and the Grindex Public Joint Stock Company.

The students of O. Neilands form a large group: 27 Candidates and 2 Doctors of the sciences. All in all, he published more than 700 scientific works, including one monograph (O. J. Neilands, J. P. Stradins, E. A. Silinsh et al., *Structure and Tautomeric Conversions of β -Dicarbonyl Compounds* [in Russian], Zinatne, Riga (1977), 448 pp.) and two textbooks; he held 70 Inventor's Certificates and international patents.

Professor O. Neilands was always very demanding of himself and his colleagues. At the same time, he was always very friendly toward his coworkers.

Students and colleagues will always keep a bright memory of Professor Ojars Neilands as a man who over his entire creative life was completely dedicated to organic chemistry, his students, and his coworkers.

R. Valters, E. Gudriniece, V. Kampars, and A. Strakovs