

# NIKOLAI NIKOLAEVIC SEMENOV



Nikolai N. Semenov was born in Saratov, Russia, on April 3, 1896. He graduated from Petrograd University in 1917, and in 1920, he took charge of the electron phenomena laboratory of the Leningrad Physico-Technical Institute. He lectured at the Polytechnical Institute and was appointed Professor in 1928. In 1931, he became the Director of the Institute of Chemical Physics of the U.S.S.R. Academy of Sciences, which moved to Moscow from Leningrad in 1943. In 1944, he was appointed a Professor at the Moscow State University. After his death in 1986, the Institute was renamed the N. N. Semenov Joint Institute of Chemical Physics.

His work on the mechanism of chemical transformation included an exhaustive analysis of the application of the chain theory to varied reactions and more especially, to combustion processes. He proposed a theory of degenerate branching that led to a better understanding of the phenomena associated with the induction periods of oxidation processes. In addition, he made valuable contributions to the field of molecular physics and also investigated electron phenomena, dielectric breakdown, and the propagation of explosive waves.

In 1956, he shared the Nobel Prize with Cyril N. Hinshelwood for their researches into the mechanism of chemical reactions.

He wrote two books on chemical kinetics. The first, *Chemical Kinetics and Chain Reactions* was published in 1934 with an English edition in 1935. The second book, *Some Problems of Chemical Kinetics and Reactivity*, first published in 1954, was revised in 1958, with editions in English, German, and Chinese.

He became a Corresponding Member of the U.S.S.R. Academy of Sciences in 1929 and Academician in 1932 and was awarded five Orders of Lenin and the Order of Red Banner of Labour by the Soviet government. He was a member of the Chemical Society, London, Foreign Member of the Royal Society of London, and foreign member of the American, Indian, German, and Hungarian Academies of Sciences. He was awarded Honorary Doctorate degrees from Oxford and Brussels Universities.

He married Natalya Nikolaevna Semenova, and they had a daughter and a son. He died on September 25, 1986

## References:

[http://nobelprize.org/nobel\\_prizes/chemistry/laureates/1956/semenov-bio.html](http://nobelprize.org/nobel_prizes/chemistry/laureates/1956/semenov-bio.html)

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