Leopoldina
Nationale Akademie
der Wissenschaften

Curriculum Vitae Professor Dr Roald Hoffmann

Name: **Roald Hoffmann**
Date of birth: **18 July 1937**

Research Priorities: electronic structure of molecules, molecular orbitals, theory of shapes, spectra and reactions of molecules, organic, inorganic and extended structures, behaviour of matter under high pressure, chemistry teaching, literature

Roald Hoffmann is a US chemist and author. For his research on chemical reactions he received the Nobel Prize in Chemistry in 1981, together with Kenichi Fukui from Japan. He has also written poetry and non-fiction books on the connections between chemistry, philosophy and poetry.

Academic career

1996	Professor of Humane Letters, Cornell University, Ithaca, USA
1974	Professor of Physical Science, Cornell University, Ithaca, USA
1968	Professor of Chemistry, Cornell University, Ithaca, USA
1965	Associate Professor, Cornell University, Ithaca, USA
1962 - 1965	Junior Fellow, Harvard University, Cambridge, USA
1962	Doctorate, Harvard University, Cambridge, USA
1960 - 1961	Visiting Student, University of Moscow, Moscow, USSR
1958	BA in Chemistry, Columbia University, New York City, USA
1955 - 1958	Degree in Chemistry, Columbia University, New York City, USA

Functions in Scientific Societies and Committees

1987 - 1990	Member, Council, National Academy of Sciences (NAS), Washington D.C., USA

1970 - 1974	Member, Advisory Panel, Chemistry, National Science Foundation (NFS), Washington D.C., USA
	Member, Board of Overseers, Chemical Heritage Foundation, Philadelphia, USA

Honours and Memberships

2017	Primo Levi Prize, German Chemical Society (GDCh) and Societa Chimica Italiana (SCI), Rome, Italy
2011	Otto Warburg Lecture, Otto Warburg Chemistry Foundation, University of Bayreuth, Bayreuth, Germany
2011	Lomonosov Gold Medal, Russian Academy of Sciences (RAS), Russia
2009	James T. Grady-James H. Stack Award for Interpreting Chemistry for the Public, Washington D.C., USA
2008	Lichtenberg Medal, The Göttingen Academy of Sciences and Humanities in Lower Saxony, Göttingen, Germany
2006	Gold Medal, American Institute of Chemists (AIC), Philadelphia, USA
since 2002	Honorary Member, Chemical Society of Japan, Japan
since 2000	Member, German National Academy of Sciences Leopoldina, Germany
since 1999	Honorary Member, GDCh
since 1998	Corresponding Member, North Rhine-Westphalian Academy of Sciences, Düsseldorf, Germany
1996	Pimentel Award in Chemical Education, American Chemical Society (ACS), USA
1994	Centennial Medal of the Graduate School of Arts and Sciences, Harvard University, Cambridge, USA
1990	Priestley Medal, ACS, USA
since 1989	Honorary Member, The Royal Institution, London, USA
since 1988	Foreign Member, Finnish Academy of Science and Letters, Finland
since 1988	Foreign Member, Academy of Sciences of the Soviet Union, USSR
1986 - 1987	Tage Erlander Professor, Swedish Research Council, Stockholm, Sweden
1986	Joseph Priestley Award, Dickinson College, Carlisle, USA
1986	Sciences Award in the Chemical Sciences, National Academy of Sciences, USA
since 1985	Foreign Member, Royal Swedish Academy of Sciences, Sweden
since 1984	Foreign Member, Royal Society, UK

since 1984	Member, American Philosophical Society, USA
1983	National Medal of Science for Chemistry, Presidential Committee on the National Medal of Science, USA
1982	Prize in Inorganic Chemistry, ACS, USA
1981	William H. Nichols Medal, New York Section, ACS, USA
1981	Nobel Prize in Chemistry (shared with Kenichi Fukui), Royal Swedish Academy of Sciences, Sweden
1978	Guggenheim Fellowship, John Simon Guggenheim Memorial Foundation, New York City, USA
since 1978	Member, International Academy of Quantum Molecular Sciences (IAQMS)
1973	Arthur C. Cope Award in Organic Chemistry (shared with R.B. Woodward), ACS, USA
since 1972	Member, National Academy of Sciences, USA
since 1971	Member, American Academy of Arts and Sciences, USA
1970	Prize, IAQMS
1969	Award in Pure Chemistry, ACS, USA
	Roald Hoffmann has been awarded more than 30 Honorary Doctorates.

Research Priorities

Roald Hoffmann is a US chemist and author. For his research on chemical reactions he received the Nobel Prize in Chemistry in 1981, together with Kenichi Fukui from Japan. He has also written poetry and non-fiction books on the connections between chemistry, philosophy and poetry.

Roald Hoffmann's research is focused on applied theoretical chemistry, developing mathematical or computer-simulated methods for calculating simple orbital-based explanations from electron structures which can be applied to all fields of chemistry. Together with US Chemist Robert B. Woodward, Hoffmann developed the "Woodward-Hoffmann rules", a set of quantum mechanical rules that can be used to predict the simplicity or difficulty of certain chemical reactions. The "Woodward-Hoffmann rules" were developed based on the total synthesis of vitamin B12 carried out by Woodward. Unusual ring closure reactions that were observed experimentally led Woodward and Hoffmann to the so-called rules of symmetry. These rules are an important way of predicting suitable conditions for certain organic reactions (pericyclic reactions) and the stereochemistry (three-dimensional structure of atoms) of their products.

Throughout his scientific career, Roald Hoffmann has always considered himself to be a teacher and pedagogical considerations are of particular importance to him in his research. Thus, he asks how chemistry is "made" and what function it has in culture and society. These reflections have led to

numerous essays and books on the philosophy of science and ethics. As an author he also publishes poetry, essays, books and plays, thereby building a bridge between science, philosophy and poetry.