JEAN-MARIE LEHN

Université de Strasbourg, France

Born in France, in 1987 Jean Marie Lehn shared the Nobel Prize for Chemistry with Charles J. Pedersen and Donald J. Cram, for his studies on the chemical basis of “molecular recognition” (i.e., the way in which molecules recognize and selectively bind to each other), which also plays a fundamental role in biological processes. Over the years his work led him to the definition of a new field of chemistry, for which he has proposed the term “supramolecular chemistry” as it deals with the complex entities formed by the association of two or more chemical species held together by non-covalent intermolecular forces. Subsequently, the area developed into the chemistry of “self-organization” processes and more recently towards “adaptive chemistry”, dynamic networks and complex systems.

Career and recognitions

Lehn studied chemistry at the University of Strasbourg, earning his PhD in 1963. He then spent a year in Robert Burns Woodward's laboratory at Harvard University, where he was part of the team working on the total synthesis of vitamin B12. He also took a course in quantum mechanics and began carrying out his first calculations with Roald Hoffmann. In 1964 he witnessed the first steps in what would later be known as the Woodward–Hoffmann rules.

In 1966 he became a lecturer at the University of Strasbourg and set up his own laboratory, where he focused his work on the physical chemistry of organic compounds, putting the experience gained in organic chemistry, quantum theory and physical methods into practice. In 1970 he was appointed Professor of Organic Chemistry at the Louis Pasteur University of Strasbourg and from 1979 to 2010 he was Professor at the Collège de France in Paris. He is presently Professor at the University of Strasbourg Institute for Advanced Study (USIAS). His later research combined the recognition, transport and catalytic properties of supramolecular species with their characteristics during their organised phase, with the aim of designing molecular devices that could, in the future, process signals and information at a molecular level.

Lehn is a member of many academies and scientific institutions and has won many international awards and prizes, including the Humboldt Prize (1983), the Royal Society's Davy Medal (1997) and the ISA Medal for Science (2006). He received the Order of Merit of the Federal Republic of Germany in 2009 and was named Grand Officer of the French Legion of Honour in 2014, among other accolades.