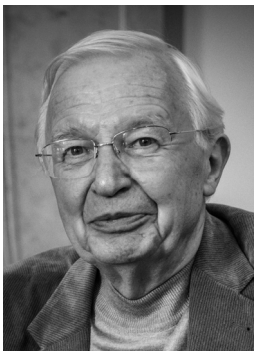
Leopoldina
Nationale Akademie
der Wissenschaften

Curriculum Vitae Professor Dr Jean-Marie Lehn



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Name: **Jean-Marie Lehn**
Date of Birth: **30 September 1939**

Research Priorities: Supramolecular chemistry, cryptands, cage molecules, ion confinement, self-organisation of matter, adaptive chemistry, artificial photosynthesis

Jean-Marie Lehn is a French chemist. He is one of the pioneers of “supramolecular chemistry” and described the substance class of cryptands for the first time. In 1987 he and the two US-American chemists Donald Cram and Charles Pedersen were jointly awarded the Nobel Prize in Chemistry for the “development and use of molecules with structure-specific interactions of high selectivity”. The scientists provided essential insights into the transport of ions through cell membranes.

Academic and Professional Career

	Director, Institut de Science et d'Ingénierie Supramoléculaires (ISIS), University of Strasbourg, Strasbourg, France
	Director, Laboratory of Supramolecular Chemistry, ISIS, Louis Pasteur University, Strasbourg, France
	Director, Chemistry Laboratory of Molecular Interactions, Collège de France, Paris, France
2005	Adjunct Professor, Asian Institute of Technology, Bangkok, Thailand
2000 - 2004	Director, ISIS, University of Strasbourg, Strasbourg, France
1999 - 2000	Newton Abraham Professor, Lincoln College, University of Oxford, Oxford, UK
since 1998	Director, Nanotechnology Institute, University of Karlsruhe (since 2009: Karlsruher Institut für Technologie KIT), Karlsruhe, Germany
1997, 2000	Robert Burns Woodward Visiting Professor, Harvard University, Cambridge, USA

1989	Heinrich Hertz Visiting Professor, University of Karlsruhe (since 2009: KIT), Karlsruhe, Germany
1985 - 1986	Rolf Sammet Visiting Professor, Goethe University Frankfurt, Frankfurt am Main, Germany
1985	Visiting Professor, University of Barcelona, Barcelona, Spain
1984	Alexander Todd Visiting Professor of Chemistry, University of Cambridge, Cambridge, UK
since 1979	Professor of Molecular Interactions, Collège de France, Paris, France
1977	Visiting Professor of Chemistry, Eidgenössische Technische Hochschule (ETH) Zürich, Zürich, Switzerland
1974 -1980, 1972	Visiting Professor of Chemistry, Harvard University, Cambridge, USA
1970 - 1979	Professor of Chemistry, Louis Pasteur University, Strasbourg, France
1966 - 1969	Assistant Professor of Chemistry, Louis Pasteur University, Strasbourg, France
1966	Member, French National Centre for Scientific Research (CNRS), France
1963 - 1964	Post-Doctoral Research Fellow, Harvard University, Cambridge, USA
1963	PhD, University of Strasbourg, Strasbourg, France
1960 - 1963	Study of Conformational Studies of Triperpenes, University of Strasbourg, Strasbourg, France
1960	Bachelor of Science, University of Strasbourg, Strasbourg, France

Functions in Scientific Societies and Committees

since 2017	Patron, Prix Forcheurs Jean-Marie Lehn, French Embassy, Berlin, Germany
2010 - 2011	Member, Board of Directors, Sanofi-Aventis, Paris, France
until 2009	Member, Board of Directors, Ciba Specialty Chemicals, Basel, Switzerland
1997 - 1999	Member, Supervisory Board, Hoechst AG, Frankfurt am Main, Germany
until 1996	Member, Board of Directors, Ciba-Geigy, Basel, Switzerland
1992	Chairperson, Science Council, Rhône-Poulenc, Lyons, France
	Co-founder of various companies
	Member, Kuratorium, Aventis Foundation, Frankfurt am Main, Germany
	Member, Advisory Board, Reliance Innovation Council, Mumbai, India

Member, Advisory Board, Novartis Venture Fund, Basel, Switzerland

Honours and Awarded Memberships

2014	Grand Officier de l'Ordre de la Légion d'Honneur, France
since 2005	Honorary Member, Société Française de Chimie, France
2004	Médaille d'Or, Fondation de la Maison de la Chimie, Paris, France
2004	Grand Officer, Order of Cultural Merit of Romania, Romania
since 2003	Honorary Member, World Innovation Foundation
2003	Gold Medal Giulio Natta, Italian Chemical Society, Italy
since 2002	Honorary Member, Chemical Society of Japan (CSJ), Japan
2001	Austrian Cross of Honour for Science and Art, First Class, Austria
1997	Lavoisier-Médaille, Société Française de Chimie, France
since 1997	Honorary Member, German Chemical Society (GDCh), Germany
1997	The Davy Medal, Royal Society, UK
1996	Commandeur de l'Ordre de la Légion d'Honneur, France
since 1996	Foreign Member, Third World Academy of Sciences
1995	Golden Commemorative Medal, Faculty of Natural Sciences, Charles University, Prague, Czech Republic
1995	Gold Medal, Comenius University, Bratislava, Slovakia
1995	Médaille d'Or, Société Académique Arts-Sciences-Lettres, France
1994	Ettore Majorana-Erice Science for Peace Prize, Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Italy
1993	Officier dans l'Ordre National du Mérite, France
since 1993	Foreign Member, Royal Society, UK
since 1990	Member, Orden Pour le Mérite for Sciences and Arts, German President
since 1990	Member, Göttingen Academy of Sciences and Humanities, Göttingen, Germany
since 1990	Associate Member, Royal Flemish Academy of Belgium for Sciences and the Arts, Belgium
1989	Karl Ziegler Prize, GDCh, Germany
1989	Médaille d'Or, Société d'Encouragement au Progrès, France
1989	Minnie Rosen Award, Ross University School of Medicine, Bridgetown, Barbados

1989	Chevalier dans l'Ordre des Palmes Académiques, France
1988	Officier de l'Ordre de la Légion d'Honneur, France
1987	Nobel Prize for Chemistry, together with Donald Cram and Charles Pedersen, Nobel Foundation, Stockholm, Sweden
since 1987	Foreign Member, American Philosophical Society, USA
1987	George Kenner Prize, University of Liverpool, Liverpool, UK
1986	Alsace Foundation Prize, Strasbourg, France
since 1985	Member, German National Academy of Sciences Leopoldina, Germany
1983	Foreign Member, Royal Netherlands Academy of Arts and Sciences, the Netherlands
1983	Humboldt Research Award, Alexander von Humboldt Foundation, Bonn, Germany
1983	Chevalier de l'Ordre de la Légion d'Honneur, France
1981	Pierre Bruylants Medal, University of Leuven, Leuven, Belgium
1981	Gold Medal, CNRS, France
1981	Gold Medal, Pontifical Academy of Sciences, Vatican
since 1980	Foreign Member, National Academy of Sciences, USA
since 1980	Foreign Honorary Member, American Academy of Arts and Sciences, USA
1978	Raymond Berr Prize, Chemical Society of France, France
1976	Chevalier dans l'Ordre National du Mérite, France
1972	Silver Medal, CNRS, France
1968	Prix Adrian, Société Chimique de France, France
1963	Bronze Medal, CNRS, France
	Jean-Marie Lehn holds numerous honorary doctorates and is an honorary member of other scientific associations and academies of science worldwide.

Research priorities

Jean-Marie Lehn is one of the pioneers of “supramolecular chemistry” and described the substance class of cryptands for the first time. In 1987 he and the two US-American chemists Donald Cram and Charles Pedersen were jointly awarded the Nobel Prize in Chemistry for the “development and use of molecules with structure-specific interactions of high selectivity”. The scientists provided essential insights into the transport of ions through cell membranes.

Supramolecular chemistry explores the self-organisation of matter. It concerns intermolecular

bonds and the new properties that result from these bonds. Two or more chemical species arrange themselves into a supermolecule through intermolecular interactions. Naturally occurring molecules can take up sodium or potassium ions for example and channel them through biological membranes. The ion inclusion gives the molecule other properties. The field of research is also referred to as host-guest chemistry because it relates to molecular constructions which host molecular guests.

The cryptands developed by Jean-Marie Lehn, organic cage molecules, can form two or more rings and store cations in these cavities. The complexes are readily soluble in water and polar solvents and almost insoluble in non-polar organic solvents. In the chemical industry the compounds are used as transport vehicles and ion exchangers.

In his further career, Jean-Marie Lehn researched the self-organisation and self-recognition of molecular systems at the interface between chemistry and biology, and also the path towards adaptive chemistry. He worked on artificial photosynthesis and the conversion of light into chemical or electrical energy and the storage of solar energy.