

## Former Ruzicka Prize Awardees

1957	Georg Büchi, MIT Cambridge	1991	Alois Renn, ETH Zurich
1958	Albert Eschenmoser, ETH Zurich	1992	Beat H. Meier, ETH Zurich
1959	Robert Schwyzler, University Zurich	1993	Renato Zenobi, EPFL
1960	Heinrich Zollinger, ETH Zurich	1994	Peter Wipf, University of Pittsburgh
1961	Duilio Arigoni, ETH Zurich	1995	Heinz Moser, Ciba Basel
1962	André Dreiding, University Zurich	1996	Aleksander Rebane, ETH Zurich
1963	Max Thürkauf, University Basel	1997	Yves Rubin, UCLA
1964	Henri Isliker, University Lausanne	1998	Alan E. Mark, ETH Zurich
1965	Karl Heusler, Woodward Institute Basel	1999	Ingo Fischer, ETH Zurich
1966	Charles Weissmann, New York University	2000	Ursula Röthlisberger, ETH Zurich
1967	Günther Ohloff, Firmenich SA Genf	2001	Wolfgang Meier, University Basel
1968	Kurt Schaffner, ETH Zurich	2002	Michael Hippler, ETH Zurich
1969	Richard R. Ernst, ETH Zurich	2002	Detlef Günther, ETH Zurich
1970	Gerhard Geier, ETH Zurich	2003	Matthias Ernst, ETH Zurich
1971	Rolf Scheffold, University Fribourg	2004	Marco Tomaselli, ETH Zurich
1972	Hansuli Wehrli, ETH Zurich	2007	J. Wendelin Stark, ETH Zurich
1973	Hans Dutler, ETH Zurich	2008	Philippe H. Hünenberger, ETH Zurich
1974	Hans Gerlach, ETH Zurich	2009	Karl Gademann, EPFL
1975	John Ammeter, ETH Zurich	2010	Stefan Willitsch, University Basel
1976	Camille Ganter, ETH Zurich	2011	Ryan Gilmour, ETH Zurich
1977	Valentin Rautenstrauch, Firmenich SA Genf	2012	Hans Jakob Wörner, ETH Zurich
1978	Werner Hug, University Fribourg	2013	Maksym Kovalenko, ETH Zurich/EMPA
1979	Urs-Peter Fringeli, ETH Zurich	2014	Cristina Müller, ETH Zurich/PSI
1980	Ferdinand Näf, Firmenich SA Genf	2015	Henning Jessen, University Zurich
1981	Richard Cherry, ETH Zurich	2016	Bill Morandi, MPI für Kohleforschung
1982	Roland M. Wenger, Sandoz AG Basel	2017	Maria Ibáñez, ETH Zurich
1983	Harold Baumann, ETH Zurich	2017	Chih-Jen Shih, ETH Zurich
1984	Alexander Wokaun, ETH Zurich	2018	Christof Sparr, University Basel
1985	Ulrich Müller-Herold, ETH Zurich	2019	Dmitry Katayev, ETH Zurich
1986	Hubert E. van den Bergh, EPFL	2020	Patrick Hemberger, PSI Villigen
1987	Alfons Baiker, ETH Zurich	2021	Fabian von Rohr, University Zurich
1988	Thomas Laube, ETH Zurich	2022	Athina Anastasaki, ETH Zurich
1989	Samuel Leutwyler, University Bern	2023	Victor Mougél, ETH Zurich
1990	Charles Fehr, Firmenich SA Genf		



# Ruzicka-Prize 2023

Prof. Dr. Victor Mougél

## Mimicking Nature's Electric Wires: Redox Properties and Catalytic Applications of Synthetic Iron-Sulfur Clusters

November 23, 2023, 5–6 pm  
HCI, G3, Hönggerberg

Prof. Dr. Erick M. Carreira – Welcome  
Prof. Dr. Christoph Copéret – Laudatio  
Prof. Dr. Victor Mougél – Lecture  
Prof. Dr. Christian Wolfrum – Ceremony



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# The Ruzicka Prize

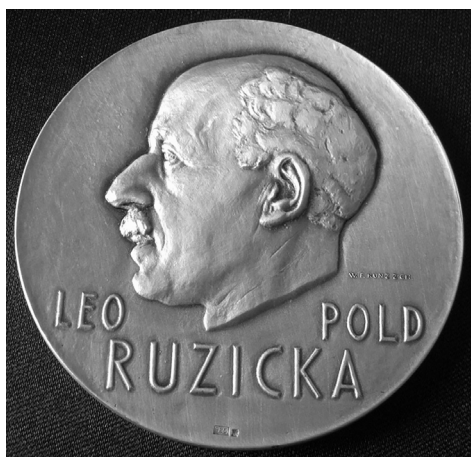
The annually awarded Ruzicka Prize, named after ETH professor and Nobel laureate Leopold Ruzicka, is considered one of the most important awards for the promotion of young scientists in the field of chemistry in Switzerland.

Leopold Ruzicka was born in Vukovar, Croatia, on September 13, 1887. He studied chemistry at the Technical University in Karlsruhe from 1906 to 1910, and was an assistant at ETH Zurich from 1912 to 1916. Subsequently, he worked for the chemical industry and was a private lecturer. From 1923 Ruzicka was a titular professor at ETH Zurich. In 1927, he was appointed professor of organic chemistry at the University of Utrecht. In 1929 he returned to ETH Zurich as a professor, succeeding Richard Kuhn, and remained there until his retirement in 1957.

In 1939, his work in the field of polymethylenes and higher terpene compounds was awarded the Nobel Prize in Chemistry. After his death on September 26, 1976, in Mammern (Switzerland), a foundation and fund were established with the aim of annually awarding

a young researcher for an outstanding publication in the field of chemistry.

As an instrument for promoting young researchers, the Ruzicka Prize has been extraordinarily successful: since it was first awarded in 1957, the board of trustees has discovered several talented researchers. Many of those who were private lecturers, group leaders or assistant professors when they received the prize now have leading positions in well-known research institutions or industry. Several have been appointed as professors, quite a few are active at ETH Zurich and other Swiss universities.

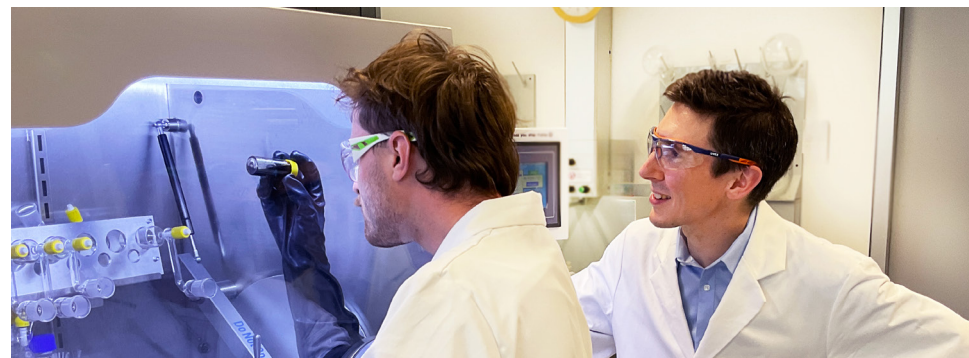


Prof. Dr. Erick M. Carreira  
Head of the Department of Chemistry and  
Applied Biosciences at ETH Zurich

# The Awardee

*«Nature outperforms even the most skilled chemists in transforming unreactive small molecules, and it does this using solely abundant elements.*

*That is an amazing source of inspiration.»*



Prof. Dr. Victor Mougel has been awarded the Ruzicka Prize 2023 for his work on redox properties and catalytic applications of synthetic Iron-Sulfur Clusters.

Waste molecules such as CO<sub>2</sub>, NO<sub>x</sub>, and nitrates represent some of the most significant threats to maintaining a habitable Earth today. Paradoxically, these same molecules are also crucial for sustaining life on Earth, serving as the fundamental building blocks of life. Mougel's group aims at finding – just like nature does – valorization and recycling strategies for these waste molecules by studying and mimicking the catalysts of nature: enzymes. These waste molecules are highly oxidized and need to be reduced to be valorized. In enzymes, the electrons necessary for these reductions are transported by small entities called iron-sulfur clusters. Victor Mougel and his team try to replicate these entities and utilize them for catalytic purposes. They synthesized the first complete series of iron-sulfur cubane redox clusters across all oxidation states, revealing how their environment affects redox potential and reactivity. Furthermore, they

demonstrated the clusters' effectiveness in developing highly efficient CO<sub>2</sub> reduction catalysts and are continuing to deepen their fundamental understanding of these clusters' properties and their applications in catalysis.

Victor Mougel (\*1985) comes from Pesmes, France, and studied at the Ecole Normale Supérieure de Lyon. In 2009, he joined Prof. Marinella Mazzanti's lab in CEA-Grenoble for his PhD to research the synthesis, reactivity and magnetic properties of polynuclear uranium complexes. After being awarded the best PhD thesis prize of the University of Grenoble, he moved to ETH Zürich as an ETH fellow to investigate Surface Organometallic Chemistry and develop new well-defined alkene metathesis catalysts in the group of Prof. Christophe Copéret. After a three-year research interlude as a CNRS research scientist at the College de France in the Laboratory of Chemistry of Biological Processes, Mougel returned to ETH Zurich in 2018 as tenure-track Assistant Professor of Inorganic Chemistry.