Former Ruzicka Prize Awardees

1957	Georg Büchi, MIT Cambridge
1958	Albert Eschenmoser, ETH Zurich
1959	Robert Schwyzer, University Zurich
1960	Heinrich Zollinger, ETH Zurich
1961	Duilio Arigoni, ETH Zurich
1962	André Dreiding, University Zurich
1963	Max Thürkauf, University Basel
1964	Henri Isliker, University Lausanne
1965	Karl Heusler, Woodward Institute Basel
1966	Charles Weissmann, New York University
1967	Günther Ohloff, Firmenich SA Genf
1968	Kurt Schaffner, ETH Zurich
1969	Richard R. Ernst, ETH Zurich
1970	Gerhard Geier, ETH Zurich
1971	Rolf Scheffold, University Fribourg
1972	Hansuli Wehrli, ETH Zurich
1973	Hans Dutler, ETH Zurich
1974	Hans Gerlach, ETH Zurich
1975	John Ammeter, ETH Zurich
1976	Camille Ganter, ETH Zurich
1977	Valentin Rautenstrauch, Firmenich SA Genf
1978	Werner Hug, University Fribourg
1979	Urs-Peter Fringeli, ETH Zurich
1980	Ferdinand Näf, Firmenich SA Genf
1981	Richard Cherry, ETH Zurich
1982	Roland M. Wenger, Sandoz AG Basel
1983	Harold Baumann, ETH Zurich
1984	Alexander Wokaun, ETH Zurich
1985	Ulrich Müller-Herold, ETH Zurich
1986	Hubert E. van den Bergh, EPFL
1987	Alfons Baiker, ETH Zurich
1988	Thomas Laube, ETH Zurich
1989	Samuel Leutwyler, University Bern
1990	Charles Fehr, Firmenich SA Genf
1991	Alois Renn, ETH Zurich
1992	Beat H. Meier, ETH Zurich
1993	Renato Zenobi, EPFL
1994	Peter Wipf, University of Pittsburgh
1995	Heinz Moser, Ciba Basel
1996	Aleksander Rebane, ETH Zurich
1997	Yves Rubin, UCLA
1998	Alan E. Mark, ETH Zurich
1999	Ingo Fischer, ETH Zurich
2000	Ursula Röthlisberger, ETH Zurich
2001	Wolfgang Meier, University Basel
2002	Michael Hippler, ETH Zurich
2002	Detlef Günther, ETH Zurich
2003	Matthias Ernst, ETH Zurich
2004	Marco Tomaselli, ETH Zurich
2007	J. Wendelin Stark, ETH Zurich
2008	Philippe H. Hünenberger, ETH Zurich
2009	Karl Gademann, EPFL
2010	Stefan Willitsch, University Basel
2011	Ryan Gilmour, ETH Zurich
2012	Hans Jakob Wörner, ETH Zurich
2013	Maksym Kovalenko, ETH Zurich/EMPA
2014	Cristina Müller, ETH Zurich/PSI
2015	Henning Jessen, University Zurich
2016	Bill Morandi, MPI für Kohleforschung
2017	Maria Ibáñez, ETH Zurich
2017	Chih-Jen Shih, ETH Zurich
2018	Christof Sparr, University Basel
2019	Dmitry Katayev, ETH Zurich
2020	Patrick Hemberger, PSI Villigen
2021	Fabian von Rohr, University Zurich
2022	Athina Anastasaki, ETH Zurich
2023	Victor Mougel, ETH Zurich
2024	Murielle Delley, University Basel

ETH zürich

Department of Chemistry and Applied Biosciences

Ruzicka-Prize 2024

Prof. Dr. Murielle Delley

Towards Sustainable Catalysis: Tackling the Challenges of Site Distribution and Entangled Interfacial Effects at Catalytic Surfaces

February 14, 2025, 5–6 pm
HCI J 3, Hönggerberg

Prof. Dr. Christophe Copéret – Welcome
Prof. Dr. Christophe Copéret – Laudatio
Prof. Dr. Murielle Delley – Lecture
Prof. Dr. Christian Wolfrum – Ceremony

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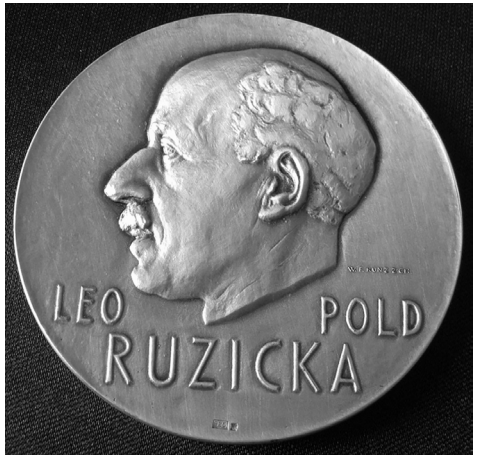
The Ruzicka Prize

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. Christophe Copéret
Head of the Departement of Chemistry and Applied Biosciences at ETH Zurich

The Awardee

*«The chemistry on the catalyst surface is complicated since many sites with different properties are involved. Understanding how this ensemble behaves and how it can be specifically created for an application is a major challenge»**

Prof. Dr. Murielle Delley has been awarded the Ruzicka Prize 2024 for her work on tackling the challenges of site distribution and entangled interfacial effects at catalytic surfaces.
Chemical production strives for efficient, cost-effective processes. Catalysts play an important role in this. However, many are not understood well and contain materials that are not sustainable.
Delley's research focuses on how catalysts function chemically, how to control their function, and how catalysts for certain processes – e.g. for electrolysis in hydrogen production – can be produced more specifically and sustainably. Although it is already possible to observe how a material behaves, huge gaps remain in our knowledge at the molecular level. Sulfur, e.g., plays a major role in transition metal phosphide-based catalysts in the field of electrocatalysis and hydrotreating, but its function was barely understood. Murielle Delley took the first major steps towards closing this gap. Together with her group she produced cobalt phosphides (CoP) and attached sulfur to its surface using molecular methods. The sulfur was quantified and analyzed. The result was a series of catalysts that could be tested for catalysis. The group could infer the thermochemical properties of sulfur at the surface, which shed light on the function of sulfur in these catalytic reactions. This opens new avenues for catalyst design. In the future, Delley would like to deepen her understanding of catalyst surfaces and also investigate the role of interfacial electric fields in catalysis.

Murielle Delley studied chemistry at ETH Zurich and completed her PhD with Prof. Christophe Copéret in 2017. For her thesis "Molecular-Level Understanding of Structure and Reactivity of Isolated Chromium Sites on Oxide Surfaces", Delley got the Prix Schlaefli 2019 in Chemistry. After a postdoc at Yale University with Prof. James M. Mayer, Delley started her career at the Department of Chemistry at the University Basel (Branco Weiss fellow, PRIMA professor of the Swiss National Science Foundation) and was appointed tenure-track assistant professor in 2023.

* Quote: Murielle Delley