

# Egyptian chemist Zewail, Nobel prize-winner, dies at 70

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This undated photo provided by courtesy of Caltech shows Ahmed Zewail, the Linus Pauling professor of chemistry, professor of physics, and director of the Physical Biology Center for Ultrafast Science and Technology at Caltech, in Pasadena, Calif. Zewail, a science adviser to President Obama who won the 1999 Nobel Prize for his work on the study of chemical reactions over immensely short time scales, died on Tuesday, Aug. 2, 2016. He was 70. (Chris Sabanpan/Courtesy Caltech via AP)

Ahmed Zewail, a science adviser to President Obama who won the 1999 Nobel Prize for his work

on the study of chemical reactions over immensely short time scales has died at age 70.

Zewail's death on Tuesday was announced by the California Institute of Technology in Pasadena, Calif., where he was Linus Pauling professor of chemistry and director of the Physical Biology Center for Ultrafast Science and Technology.

Zewail was born in Egypt and lived in San Marino, a wealthy suburb of Los Angeles. Caltech had no information on cause of death or where he died. Egyptian media reported that it was in the United States.

Over nearly 40 years at Caltech, Zewail and his students pioneered the field of femtochemistry, the use of lasers to monitor chemical reactions at a scale of a femtosecond, or a millionth of a billionth of a second.

Using Zewail's techniques, scientists can observe the bonding and busting of molecules in real time. The research could lead to new ways of manipulating chemical or biological reactions as well as faster electronics and ultra-precise machinery.

"If you can understand the landscape of a chemical change or a biological change, you might be able to alter the landscape," Zewail said after winning the Nobel Prize in chemistry.



- In this Feb. 4, 2002 file photo, Egyptian-American Nobel chemistry laureate Ahmed Zewail gestures to reporters in Cairo. Zewail, a science adviser to President Obama who won the 1999 Nobel Prize for his work on the study of chemical reactions over immensely short time scales, died Tuesday, Aug. 2, 2016. He was 70. Zewail's death was announced by the California Institute of Technology in Pasadena, Calif., where he was Linus Pauling professor of chemistry and director of the Physical Biology Center for Ultrafast Science and Technology. (AP Photo/Mahmoud Nour Eddin, File)

In this, Aug. 14, 2015 file photo, Egyptian-American Nobel chemistry laureate Ahmed Zewail speaks to a group of journalists at his home in Cairo, Egypt. Zewail, a science adviser to President Obama who won the 1999 Nobel Prize for his work on the study of chemical reactions over immensely short time scales, died Tuesday, Aug. 2, 2016. He was 70. Zewail's death was announced by the California Institute of Technology in Pasadena, Calif., where he was Linus Pauling professor of chemistry and director of the Physical Biology Center for Ultrafast Science and Technology. (AP Photo/Amr Nabil, File)

Zewail helped develop four-dimensional electron microscopy, which can capture a real-time series of images of such fleeting processes that can be assembled into a sort of digital movie.

In 2009, the president named Zewail, a naturalized citizen, to the Council of Advisors on Science and Technology and later that year made him the first U.S. science envoy to the Middle East.

Zewail was born in Damanhur, Egypt. He joined Caltech in 1976.

He joined the United Nations Scientific Advisory Board in 2013.

"I never ever believed that one day I would get a call from Sweden as a boy," he said after receiving the Nobel. "I had passion about science. My mother said I was going to burn the house (with chemistry experiments)."

In 2014, Zewail wrote an opinion piece for the Los Angeles Times that urged the U.S. to avoid cutting aid to Egypt after a military coup that ousted the elected president and replaced him.

Zewail authored some 600 scientific articles and 16 books and was showered with honors from around the world, including France's highest honor, the Legion d'Honneur, and Egypt's Order of the Grand Collar of the Nile.

Zewail argued that constructive engagement and use of U.S. "soft power" such as trade agreements were important in keeping Egypt as a partner in the war on terrorism and other U.S. interests.



In this Dec. 10, 1999 file photo, Professor Ahmed H. Zewail, left, receives the Nobel Prize in chemistry from Swedish King Carl XVI Gustaf, right, at the Concert Hall in Stockholm, Sweden. Egyptian-born Ahmed Zewail, a science adviser to President Obama who won the 1999 Nobel Prize for his work on the study of chemical reactions over immensely short time scales, died Tuesday, Aug. 2, 2016. He was 70. Zewail's death was announced by the California Institute of Technology in Pasadena, Calif., where he was Linus Pauling professor of chemistry and director of the Physical Biology Center for Ultrafast Science and Technology. (AP Photo/Tobias Rostlund, Pool, File)

In a statement, the CEO of the American Chemical Society, Thomas Connelly Jr., described Zewail as "an exemplar scholar and statesman who will be greatly missed."

Egyptian President Abdel-Fattah al-Sissi expressed his condolences over the death, saying the country had lost a son and role model.

Egyptian media reported that Zewail's body would be flown to that country for burial.

Zewail is survived by his wife, Dema Faham, and four children.

This undated handout file photo, shows Ahmed Zewail, who won the Nobel Prize for Chemistry, Tuesday, Oct. 12, 1999. Egyptian-born Zewail, a science adviser to President Obama who won the 1999 Nobel Prize for his work on the study of chemical reactions over immensely short time scales, died Tuesday, Aug. 2, 2016. He was 70. Zewail's death was announced by the California Institute of Technology in Pasadena, Calif., where he was Linus Pauling professor of chemistry and director of the Physical Biology Center for Ultrafast Science and Technology. (AP Photo, File)

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