



**Edith M. Flanigen**

*January 28, 1929 – January 06, 2026*

### ***Obituary***

Edith Marie Flanigen, age 96, died on January 6, 2026 in Buffalo, NY. Edith was one of the outstanding scientists of her generation. Born in Buffalo on January 28, 1929, Edith was the second of four children of Charles and Edith (O'Connor) Flanigen. She and her sisters Joan and Jane were inspired by their high school and college chemistry teachers to take up careers in science. Edith received her undergraduate degree in Chemistry from D'Youville College (1950), where she was class president and valedictorian, and a masters degree in Inorganic Physical Chemistry from Syracuse University (1952). Syracuse subsequently awarded her an honorary doctorate in 2008.

Edith joined the Linde Division of Union Carbide in Tonawanda, NY in 1952. There she worked initially on the identification, extraction, and purification of various silicone polymers. In 1956, she began work on what would become the primary focus of her professional career - the emerging technology of molecular sieves. These are crystalline microporous structures used to sort, separate and purify complex chemical mixtures based on the shape and size of their molecules. Edith's breakthroughs— in particular, her substantial contributions to the development of Zeolite Y —stand among the most significant advances in inorganic materials in the latter half of the 20<sup>th</sup> century. Zeolite Y is a molecular sieve and catalyst used to optimize the conversion of crude oil into gasoline and make oil refining cleaner and safer. Edith's work with molecular sieves also led to innovative applications in water purification and environmental cleanup, including decontaminating water at Japan's Fukushima Daiichi nuclear power plant after the 2011 tsunami. Edith co-invented a synthetic emerald, which was used mainly in masers (predecessors to lasers) as well as jewelry. She also pioneered the use of mid-infrared spectroscopy for analysing zeolite structures. In 1968, Edith was named head of Union Carbide's molecular sieve research team, at a time when it was exceedingly rare for women to hold leadership positions in industry. In 1973 she became the first woman to be named Corporate Research Fellow at Union Carbide, and Senior Corporate Research Fellow in 1982. Edith developed the pure silica form of MFI zeolite, one of the most

important and well-studied zeolites. After her success with zeolites, Edith was challenged by the Union Carbide management to develop a new generation of molecular sieve materials and catalysts. Edith and her group responded by inventing the AIPO molecular sieves, which unlike zeolites were much more compositionally diverse, incorporating many metals. The initial landmark patents included over 50 new materials; the discovery causing an explosion in the field of molecular sieve research, launching hundreds of careers. Within 10 years there were over 200 publications yearly on AIPOs. When Union Carbide merged with UOP, she established a group dedicated to designing and creating new families of materials. The innovations from this group have had a major impact on the efficient use of the world's natural energy resources, and the group remains active today. After retirement, she continued working as a consultant into her nineties.

During her lengthy career, Edith invented more than 200 different synthetic materials, authored more than three dozen publications, earned 109 patents, and received numerous professional awards. In 1992, she was the first woman to be awarded the Perkin Medal - the most distinguished honor in applied chemistry. She was elected to the National Academy of Engineering, was a Fellow of the American Academy of Arts and Sciences, and received the Garvan Olin Award from the American Chemical Society. She received the Lemelson-MIT Lifetime Achievement Award in 2004. The same year, Edith was inducted into the National Inventors Hall of Fame, an organization through which she served as an inspirational role model for youth and college innovators. In 2014, President Obama presented her with the National Medal of Technology and Innovation for her contributions to science. Also in 2014, a collaborative research center at Humboldt University in Berlin honored her by instituting the Edith Flanigen Award for exceptional female scientists in early stages of their careers.

Edith spent most of her life in White Plains, NY, having moved there when Union Carbide transferred the Linde Division to the company's Tarrytown, NY facility in the mid-1960's. After suffering a stroke in 2021, she returned to Buffalo where she spent her final years with her sister and family. She is survived by her sister, Jane, and eleven devoted nieces and nephews - Richard Griffin Jr, Mary Griffin, Annie Griffin, JR Drexelius, Daniel Drexelius, Cathy Grotz, Paul Drexelius, Annie Rubin, Mark Drexelius, Charles Flanigen II, and Patty Phillips, as well as numerous grandnieces and grandnephews whom she treasured. She is preceded in death by her siblings David Flanigen and Joan Drexelius, and nieces and nephews Joseph Drexelius, James Flanigen, Charles Griffin, Thomas Griffin, and Meaghan Grotz. In lieu of flowers, the family requests contributions to Feedmore WNY.

*(modified from <https://www.amigone.com/obituaries/Edith-M-Flanigen?obId=46963818> , accessed: 20.01.2026)*