Stephanie L. Kwolek.

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Chemist

- **Born:** July 31, 1923
- **Birthplace:** New Kensington, Pennsylvania
- **Died:** June 18, 2014

Dr. Stephanie L. Kwoleck, a chemist, is best known for inventing Kevlar, a synthetic fiber.

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Kwoleck was born on July 31, 1923, in New Kingston, Pennsylvania. Her parents were John and Nellie Zajdel Kwoleck. At a local foundry, her father was a mold-maker. He died when she was ten years old.

Interested in science, Kwoleck attended Carnegie Mellon University. She obtained a bachelor of science degree from the Carnegie Institute of Technology in 1946. That same year, she began working for E. I. du Pont Nemours & Company, now known as DuPont, in Wilmington, Delaware. She started working in their laboratory to earn money to pay for medical school. She enjoyed the job, however, and ended up working for DuPont for forty years until she retired in 1986.

At DuPont, Kwoleck began in the department of textile fibers. She was working during a time when many synthetic fibers were being discovered. For example, nylon had just been discovered in 1939.

Later, Kwoleck began to specialize in using low-temperature polymerization. She worked with aromatic polymers.

Her goal was to find a polymer, a chemical that has a long molecular chain, that could be spun into a strong fiber at a low temperature.

In 1965, Kwoleck reached her goal when she invented Kevlar, a liquid crystal polyamid solution. Kevlar is an extremely stiff and strong fiber. It is stiffer than glass fiber and five times stronger than steel. Moreover, it doesn't rust. Kevlar can take on many forms including paper, pellets, pulp, and thread.

Kevlar is used for making a variety of products such as airplanes, boats, bulletproof vests, radial tires, and space vehicles. By being used in bulletproof vests, Kevlar saved the lives of about 1,300 police officers in twenty years.

Kwoleck received a patent for Kevlar in 1971. The patent was granted to her under the name S. L. Kwoleck because during that time women inventors were rare. It is US patent No. 3.671,542. Kwoleck received between seventeen and twenty-eight different patents in her lifetime.

In addition to patents, Kwoleck has been distinguished by many awards. In 1978, she received the American Society of Metals Award. In 1980, she was given the American Chemical Society Creative Invention Award as well as the American Institute of Chemists Chemical Pioneer Award.

Kwoleck was honored with a doctor of science Degree from the Worchester Polytechnic Institute in Massachusetts in 1981.

In 1985, she was entered into the Polymer Processing Hall of Fame. Kwoleck became the first woman to be accepted into the Inventors Hall of Fame in 1991.

Kwoleck never married, but she was engaged. The relationship was long distance, however, and didn't work out. In 1977, she bought a house in Delaware where she lived until her death in 2014. The one millionth Kevlar vest was sold the week that she died.

Kwoleck's Inventions Include:

• Kevlar

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By Phyllis Barkas Goldman

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Book
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