DELLA MARIE MARTIN ROY, professor emerita of materials science at the Pennsylvania State University, died March 27, 2021, at age 94. Throughout her career she combined a keen intellect with unruffled grace while managing a large research program and working on important problems in cement strength, hydroxyapatite formation, nuclear waste disposal, and reuse of industrial byproducts such as fly ash.

She was born to Harry L. and Anna Martin on November 3, 1926, in Merrill, Oregon. After graduating from high school at age 16, she enrolled at the University of Oregon, where she graduated Phi Beta Kappa with a bachelor’s degree in chemistry in 1947. She then crossed the country to Pennsylvania State University for her graduate studies, receiving her MS degree in mineralogy in 1949, under Elburt F. Osborn (NAE 1968), future director of the US Bureau of Mines.

During her graduate work, she shared an office and lab with another graduate student, Rustum Roy (NAE 1973), who later became a significant figure in materials research as a founding member of the university’s Materials Research Laboratory. Their relationship grew and they married in June 1948, a marriage that spanned 62 years until Rustum’s death in 2010.

The following year the couple moved briefly to India, where he had grown up, but returned to Penn State in 1950; Rustum
joined the faculty and Della pursued a PhD in mineralogy, which she received in 1952. She then joined her husband on the Penn State faculty, where she rose to the rank of full professor in 1975. In her 50-year research and teaching career at the university she mentored dozens of graduate students, as MS or PhD advisor, as well as postdoctoral fellows. After “retirement” from Penn State, she remained active in research there and at Arizona State University, where she was a research professor.

She became renowned as a leader in the world of cement and concrete, known especially for her work in advanced concrete materials for pavements, chemically bonded cements, ancient cement-based building materials, and high-temperature cements for geothermal wells. Her other areas of research included chemically bonded ceramics, crystal growth and crystal chemistry, and phase equilibria. Her patents range from porous biomaterials for bone repair to methods for radioactive storage.

In 1971 she founded the journal *Cement and Concrete Research*, the first in the field, and served as its editor until 2005. She was also the author or coauthor of more than 400 publications; among the most important of these papers are:

- “Hydroxyapatite Formed from Coral Skeletal Carbonate by Hydrothermal Exchange”
- “Effect of Silica Fume, Metakaolin, and Low-Calcium Fly Ash on Chemical Resistance of Concrete”
- “New Strong Cement Materials: Chemically Bonded Ceramics”
- “Tissue Ingrowth of Replamineform Implants”

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Della was active in the broader community and well recognized by her peers for her contributions. She was a distinguished life member, fellow, and trustee (1992–95) of the American Ceramic Society (ACerS) and received its John Jeppson Award (1982), Copeland Award (1987), and Bleininger Award (2004). The ACerS Della Roy Lecturer Award was established in her honor in 2000.

In 1987 she became the first female materials scientist and the first Penn State woman elected to the National Academy of Engineering, and she and Rustum were the first couple to be thus honored. Also that year she was named an honorary member of the Institute for Concrete Technology. In 1991 she was elected to the World Academy of Ceramics as its first female member, and in 2012 she was one of the recipients of the first annual Golden Goose Award, which is given by Congress to honor federally funded research leading to major breakthroughs in scientific, technological, medical, public health, and other fields of benefit to the public.

In addition, in 1965 the mineral dellaite was named after her—one of only 112 women to have one of the nearly 5500 minerals named after them (as of May 2019).


The Roys made their home in State College a central meeting location where they hosted a variety of luminaries, including governors of California, the president of India, and Nobel Laureate Linus Pauling.
Della is survived by sons Ronnen Andrew Roy (wife Sinaly) and Jeremy Roy (wife Lydia), and two grandchildren. Son Neill Rathan Roy predeceased her in 2018.