

Richard E. Smalley (1943–2005)

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Richard E. Smalley in New York City, 2003 (photograph by I. Hargittai)

Richard E. Smalley was a pioneer of nanoscience and an acknowledged intellectual leader of chemical research. He was awarded the Nobel Prize for Chemistry in 1996 together with Robert F. Curl and Harold W. Kroto “for their discovery of fullerenes.” Here is how Curl compared them and how he

characterized Smalley in 1998 [1]: “Harry [Kroto] and I are very intelligent people, but Rick [Smalley] is a genius. He’s so creative. Following his career I was always amazed; he would come up with a new idea for a new instrument. He would imagine a new kind of experiment and he would invent the instrument to do the experiment.”

Rick Smalley started his undergraduate studies at Hope College in Holland, Michigan, received his B.S. degree from the University of Michigan at Ann Arbor in 1965. Between 1965 and 1969, he worked as Research Chemist at the Shell Chemical Company. He received his M.A. and Ph.D. degrees from Princeton University in 1971 and 1973, respectively. E. R. Bernstein was his graduate advisor. Between 1973 and 1976, he did postdoctoral work with D. H. Levy at the University of Chicago. He joined Rice University in 1976, where he served as professor at both the Chemistry and Physics Departments and directed the Rice Center for Nanoscale Science and Technology. His most prestigious awards prior to the Nobel Prize included the Irving Langmuir Prize of the American Physical Society (1991); the Ernest O. Lawrence Memorial Award of the U.S. Department of Energy (1992); the International Prize for New Materials from the American Physical Society (shared with Kroto and Curl, 1992); the Welch Award in Chemistry (1992); the Hewlett-Packard Europhysics Prize (shared with D. R. Huffman, Kroto, and W. Krätschmer, 1994); and the Franklin Medal (1996). He was a member of the National Academy of Sciences of the U.S.A. and many other learned societies.

He classified himself as follows [2]: “I have long wanted to understand chemistry as though it were a problem in physics, and be able to manipulate chemistry as though it were a problem of engineering.”

Smalley was a gracious person. When he expressed his joy of getting the Nobel award at the beginning of his Nobel

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lecture, he also expressed his sadness because not everybody could be included in the award from among those who participated in the discovery [3]. Just about a year before, I asked him whether the anticipation of the Nobel Prize influenced his work and his life. He said that “It makes me, and the people around me, a little nervous every year around the middle of October. This gets to be a little bit less of a problem as the years go by and in time it will pass.” Fortunately, he did not have to wait long before getting the call from Stockholm.

At the end of his autobiography, Smalley described how they dismantled the original “AP2” apparatus in which they first identified C_{60} in their laser vaporization cluster beam instrument. There is some sadness and maybe even nostalgia when he notes that “there are no supersonic beam machines

of any type in the laboratory.” He adds that “Times change.” He ends with the phrase, “But life and science go on.” [4] Reflecting upon Richard Smalley’s passing away, we must say the same, stressing that he contributed much to making them richer and more exciting.

References

1. Hargittai I (2000) *Candid Science: Conversations with Famous Chemists*. Imperial College Press, London, p 384
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3. Smalley RE (1997) “Discovering the Fullerenes.” *Les Prix Nobel*, Almqvist & Wiksell International, Stockholm, p 241
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