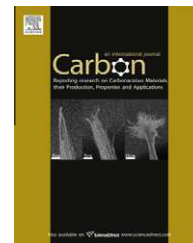


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Obituary

John E. (Jack) Fischer, June 8, 1939–June 28, 2011



John E. Fischer, 72, Professor of Materials Science and Engineering in the School of Engineering and Applied Science at the University of Pennsylvania, passed away on Tuesday, June 28th, at his home in Swarthmore, Pennsylvania, after a decades long battle with complications arising from polycystic kidney disease.

Jack Fischer was recognized as a world leader in the science and engineering of carbon-based materials and was cited as one of the world's top 15 scientists in the field of nanotechnology (>20,000 citations, ~50 citations per paper, H-index 65, ISI). He began his education as a mechanical engineer and received a BME degree from Rensselaer Polytechnic Institute (RPI) in Troy, NY in 1961 and a MSE degree from the California Institute of Technology (Cal Tech) in Pasadena, CA in 1962. After graduating with a Ph.D. degree in Nuclear Science and Engineering from RPI in 1966, he took a postdoctoral year (1966–67) in Paris at Laboratoire de Physique des Solides de l'École Normale Supérieure (learning to speak fluent French in the bargain) – the first of his many stays in France and a country that became his second home. He was then appointed Head of the Semiconductor Physics group in the Michelson Lab, China Lake (CA) before joining the Moore School of Engineering, Department of Electrical Engineering, at the University of Pennsylvania in Philadelphia as Associate Professor of Electrical Engineering in 1973. He subsequently made the Department of Materials Science and Engineering his home in 1984, serving as Professor of Materials Science and Engineering to 2009, when he became Professor Emeritus.

Of course, he did not stop working until illness forced him to stop writing in the winter of 2010.

Many things come to mind when you think of Jack Fischer – possibly the first is carbon. Beginning in the mid 1970s he became a pioneer in the science of intercalated graphite, a field where he made many seminal contributions. In 1985 a new allotrope of carbon (Buckminster fullerene) was discovered just for Jack and he led the field in discovering, understanding and exploiting the many fascinating properties of fullerenes. He pioneered research on intercalation of alkali metals into fullerenes and characterization of compressibility, electrical, thermal, and optical properties of fullerene and fulleride solids. He published extensively on this subject and organized a tutorial on fullerenes for the American Physical Society (APS) and a symposium for the Materials Research Society (MRS) in 1992. This was the time when the discovery of carbon nanotubes provided more fertile ground for Jack's innovation in the late 1990s. Jack published extensively on the structure, doping and applications of single-wall carbon nanotubes and a dozen of his nanotube papers have many hundreds of citations. Many other carbon materials such as diamond, disordered carbide-derived and activated carbons did not escape Jack's attention and his life-long contribution to the field of carbon materials science is unparalleled.

When you think of Jack Fischer you think of scholarship and accomplishment of the highest order, including 6 papers in *Nature*, 9 in *Science*, 21 in *CARBON*, and 24 in *Physical Review Letters*. When you think of Jack Fischer, you think of a caring mentor and educator who guided many students to the highest level of achievement. He supervised 37 graduate students, including 30 PhDs, and 31 post-doctoral associates. When you think of Jack Fischer you think of the excitement he had for his science and his enthusiasm for designing the perfect experiment. To track down professors usually you go to their office; not Jack, if you wanted to find him you would go to his lab, for him this job was always the thrill of actually doing the experiment.

When you think of Jack Fischer you think of collaboration, in Philadelphia at the University of Pennsylvania and Drexel University and across the world. Jack truly embodied the collaborative spirit of cutting edge interdisciplinary science through his interactions with multiple researchers around the globe. To us, one of the most telling statistic in Jack's

resume is the number of colleagues with whom he has interacted: for example he co-published with 29 staff and faculty members at the University of Pennsylvania alone and interacted with many more. He worked with the late Richard Smalley at Rice University, the Nobel Laureate who discovered fullerenes, and Jack's most widely cited paper (Crystalline Ropes of Carbon Nanotubes, *Science*, v. 273, pp. 483–487, 1996; >3300 citations, ISI) resulted from this collaboration. Jack also co-authored papers with more than one editor of CARBON – e.g., his paper with Marc Monthieux published in CARBON, v. 39, pp. 1251–1272, 2001 has already been cited more than 200 times.

When you think of Jack Fischer you think of a fighter who overcame many curve balls nature threw his way: he lived the life to the fullest, taking everything he could from every day and staying optimistic until the very end.

In addition to a career that provided him with a generous measure of foreign travel, Jack was active with the Friends of Music and Dance at Swarthmore College and an enthusiastic devotee of the Philadelphia Orchestra. While a student at RPI, he met his wife Linda (née Mammano) on a blind date arranged by mutual friends through his fraternity, Zeta Psi. They married and had their first son John, Jr., while Jack

was finishing his doctorate. Daughter Ruth and son Jason were born in China Lake. In addition to his immediate family, Jack is survived by grandsons Quinlan and Garrick Schultz, his sister June Roos of Canandaigua, NY, a niece and a nephew. He also leaves behind a multitude of friends, former students and scientific collaborators who had a special relationship with Jack. We are grateful to have had the good fortune to work with Jack Fischer, it was our privilege to have known him as a colleague, mentor and friend. He will be missed.

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