

benefited significantly from the fundamental understanding of coupling across grain boundaries.

Praveen published over 160 papers and held over 36 patents. He was elected a member of the U.S. National Academy of Sciences and the National Academy of Engineering, as well as a Fellow of the American Academy of Arts and Sciences and of the American Physical Society.

As important as his direct scientific contributions were, his impact on the science and technology infrastructure and achievements of IBM research laboratories, including those at Yorktown Heights, Almaden, and Zürich, during his tenure as Director, then Vice-President, Science, was even greater. During this time, IBM scientists in Zürich received two Nobel prizes in physics in consecutive years (1987 and 1988).

In addition to the National Medal of Technology, Praveen received several other prestigious awards, including the Institute of Electrical and Electronics Engineers (IEEE) Morris N. Liebmann Memorial Award (1992) for “the discovery of amorphous magnetic films in magneto-optic data storage systems”; the Massachusetts Institute of Technology Harry C. Gatos Distinguished Lecture and Prize (1994) in the field of electronic materials research; and the *Acta Materialia* J. Herbert Hollomon Award, presented at the 2006 Materials Research Society Fall Meeting, in recog-

nition of his outstanding contributions to interactions between society and materials science and technology, as well as for his contributions to materials technology that have had a major impact on society. Praveen was also the recipient of the George E. Pake Prize of the American Physical Society for his personal contributions to science and science management.

He retired from IBM in March 2003 and served as the director of Brookhaven National Laboratory until April 2006, enabling the implementation of the laboratory’s new vision and growth. He joined the Applied Physics and Mathematics Department at Columbia University as an adjunct faculty member in 2006, while continuing part-time scientific work at Brookhaven. He also began a collaboration with IBM scientists on new materials for photovoltaic applications and conducted his own experiments in his old laboratory at the Thomas J. Watson Research Center until shortly before his passing. Praveen always had a remarkable ability to combine his outstanding success as a scientist contributing in an extraordinary number of areas, with an equally outstanding career as a scientific director and executive.

Praveen was active in many committees nationwide and internationally, including the Physics Policy Committee of the American Physical Society, the Governing Board of the New York Academy of Sciences, as chair of the Advisory Board

of the Mathematical and Physical Sciences of the National Science Foundation, and of the Scientific Advisory Council of the International Center for Theoretical Physics in Trieste, Italy.

He co-chaired the National Research Council Study on Materials Science and Engineering, with Merton C. Flemings of MIT. This study was the basis of a Presidential initiative in advanced materials and processing programs announced by the White House on January 30, 1992.

Praveen played an active role in the Materials Research Society. Among other contributions, he served as Guest Editor of *MRS Bulletin* with Mildred Dresselhaus (published in November 2005), highlighting the many fields that emerged from the work of Arthur von Hippel, for whom MRS has named its highest award. He also contributed an article to the *MRS Bulletin* feature on 21st Century Materials Challenges (published in July 2000; www.mrs.org/bulletin).

Praveen Chaudhari is remembered with great fondness and appreciation by all who knew or worked with him. With his passing, the materials research community has lost a distinguished colleague, great leader, and wise counselor.

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Ulrich M. Gösele passed away unexpectedly on November 8, 2009 in Halle, Germany. He was born in 1949 in Stuttgart, and studied physics at the University of Stuttgart where he also received his PhD degree in conjunc-

tion with the Max-Planck Institute for Metals Research, Stuttgart. He started as a theoretician, and in 1975 became interested in defects in silicon. Soon Gösele became one of the leading authorities in the field of defects and diffusion in semiconductors. In 1977 he was awarded the Otto-Hahn Medal of the Max-Planck Society (MPG) for outstanding scientific achievements. He worked in a number of research institutions worldwide (MPI Stuttgart; Physical Metallurgy Division of the Atomic Energy Board in South Africa; IBM Watson Research Laboratories in Yorktown Heights, USA; Siemens Corporation in Munich, Germany) before moving to Duke University, North Carolina, USA, as a full Professor of Materials Science. In 1991, he

accepted the position as one of the two founding directors for the newly established Max-Planck-Institute of Microstructure Physics, Halle, and made sure that the former Bethge Institute maintained and extended its strong international position.

As a scientist Ulrich made lasting contributions. The science and technology of wafer bonding cannot be pictured without his work, and his book *Semiconductor Wafer Bonding: Science and Technology* (John Wiley & Sons, 1999)—co-authored with Q.-Y. Tong—is the standard reference in this field. Diffusion and defects in semiconductors remained one of Ulrich’s passions, and he not only developed an understanding of new diffusion mechanisms in Si but also in III–V compounds. The new diffusion models he pioneered have now become textbook topics. He invoked quantum effects in microporous Si; his papers triggered thousands of papers in the general area of porous semiconductors and porous alumina. In his later years, he started working on nanowires, nanotubes, and nanodots, again with almost instantaneous international recognition. Ulrich stimulated

his whole department: the enthusiasm for doing science, the supreme motivation, the team spirit and the way working together and having fun together was unique. Ulrich Gösele was a supreme motivator and mentor—and a good listener; he was the driving force for innovations.

His work was recognized by many honors and awards, and at the time of his death he was on the short list for more. Ulrich was a much sought-after lecturer and keynote speaker with inspiring presentations. He co-chaired the 2002 MRS Spring Meeting. He was often approached for advice or asked to serve on committees charged with difficult tasks. Prof. Dr. Ulrich Gösele has made lasting contributions to science and enriched the professional and private lives of many people. He died unexpectedly and far too early. He will be missed and remembered as an outstanding scientist and a caring friend.

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