

## Anthony Selected as First David Turnbull Lecturer

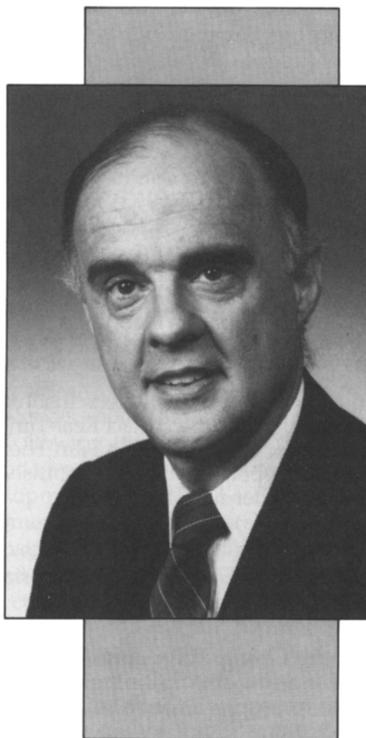
Thomas R. Anthony, of the General Electric Research and Development Center, has been selected as the first recipient of the David Turnbull Lectureship, for "outstanding contributions to the understanding of diffusion, thermomigration, and the synthesis of diamond." The David Turnbull Lectureship recognizes the career of a scientist who has made outstanding contributions to understanding materials phenomena and properties through research, writing, and lecturing, as exemplified by David Turnbull.

Anthony is a world leader in the synthesis of unique forms of diamond, specializing in diamond synthesis using low-pressure chemical vapor deposition (CVD) techniques. He was a key contributor to the first practical process that can produce gem-quality diamonds of any isotopic concentration, limited only by the purity of the methane gas used as the starting material. Anthony and his colleagues have produced carbon-12 diamond, which is the best conductor of heat.

While the concept of isotopically-enriched materials leading to increased capacity to conduct heat has long been predicted, Anthony and his colleagues were the first to devise a practical way to bring the vision to reality. Anthony is a prolific inventor, with 119 U.S. patents. He was one of Industrial Research Magazine's "100 outstanding innovators of the year," earning its IR-100 Award for the silicon devices he helped to develop.

Anthony has shown an uncanny ability to identify the key physics of feasibility questions, to analyze them properly, and to come up with extremely creative (but often, in retrospect, quite simple) inventions or engineering solutions. For example, in his early diamond work, he used a conventional microwave oven to generate a plasma. He is a careful and clever experimenter and is able to bring scientific theory and principles to bear on practical problems. He determined the rate of growth of very small diamond nuclei and related these rates to surface diffusion processes. He also was the first to point out the importance of gas phase carbon solubility in understanding the CVD of diamond.

In addition to his research work, Anthony has also been extremely active in education and in graduate training in the field of materials science. He has presented short courses on CVD diamond and



diamond-like films, through MRS meetings and at other events in countries throughout the world, including France, Germany, and Switzerland. Anthony shares his intuitions candidly and is always willing to act as a mentor to those with less experience. He gives questions careful consideration regardless of how basic they are.

Anthony joined General Electric in 1967 after graduating from Harvard, where he earned his PhD degree in physics as one of David Turnbull's first students. In 1978 he won a Coolidge Fellowship, the highest form of recognition offered by the GE R&D Center. In 1990, Anthony was elected to membership in the National Academy of Engineering, and was that same year awarded the U.S. Patent and Trademark Association Medal. This year he will be presented with the Thornton Memorial Award, sponsored by the American Vacuum Society.

Thomas R. Anthony will accept the Turnbull Award and present his lecture, "Understanding Materials with Elemental Physical Models and Simple Experiments," on Tuesday, December 1, at 12:00 noon in Salon E, Boston Marriott Hotel. □

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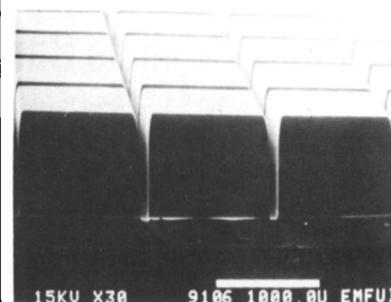


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Please visit Booth No. 904 at the MRS Equipment Exhibit/ Table Top Displays in Boston, December 1-3, 1992.