

ISQED Quality Award Recipient* (IQ-Award 2011)



Dr. R. Fabian W. Pease

William Ayer Professor (Emeritus) of Electrical Engineering
Stanford University

Citation:

For contributions to high resolution patterning and scanning electron microscopy, and for teaching and education of leaders in micro and nanoelectronics over several decades.

About R. Fabian W. Pease

Pease served as a radar officer in the Royal Air Force from 1955 to 1957, and received his B.A., M.A., and Ph.D. degrees from Cambridge University in 1960, 1962, and 1964, respectively. His Ph.D. thesis was on High Resolution Scanning Electron Microscopy. After graduating, he was an Assistant Professor of Electrical Engineering at UC Berkeley where he continued his microscopy research. In 1967, Dr. Pease joined Bell Laboratories, where he first worked on digital television and later led a group that developed the processes for electron beam lithographic mask manufacture, and demonstrated a pioneering LSI circuit built with electron beam lithography. Since 1978 he has been a Professor of Electrical Engineering at Stanford University. His group's research includes micro- and nano-fabrication and their application to electronic and magnetic devices and structures. This work has included the original demonstration of lithography with the scanning tunneling microscope, exploring the limits of resolution of deep ultraviolet lithography, the invention of the micro-channel heat sink and non-conventional electron beam technology for semiconductor manufacturing. On sabbatical in 1993 and 1994, Dr. Pease researched the synthesis of DNA microarrays at Affymetrix Corporation.

From 1996 to 1998, he was assigned to the Defense Advanced Research Projects Agency, where he initiated programs in Advanced Microelectronics and in Molecular-Level Printing. He has served as a consultant to IBM, Xerox, Etec Systems, and Lawrence Livermore Labs and is several Technical Advisory Boards.

Dr. Pease was appointed the William E. Ayer Professor of Electrical Engineering in March 2001. He is a Fellow of the IEEE, and a member of the National Academy of Engineering. With his student, David Tuckerman, he received the first IEEE Paul Rappaport Award. He was also the recipient of the IEEE Cleo Brunetti Award in 2001, for advancing high resolution patterning technologies, high performance thermal management, and scanning electron microscopy for microelectronics. Other honors include the Richard P. Feynman Prize for Microfabrication, which he shared with student, Tom Newman, for writing a page of text in a 6 micron square with 25nm linewidths; and a Title A Fellowship from Trinity College, Cambridge.

*The IQ-Award ceremony will be held during luncheon on Tuesday March 15