

## CURRICULUM VITAE

### Giorgio Baccarani



Giorgio Baccarani received the Electrical Engineering degree in 1967 and the Physics degree in 1969 from the University of Bologna. Associate Professor in Quantum Electronics since 1972 and full Professor in Electronics since 1980, he is currently in charge of two courses on Digital System Design and Digital Signal Processing.

His scientific activity has been devoted to the physics and modeling of electron devices, with special emphasis on transport models in semiconductors and numerical-analysis techniques. He devised the generalized scaling theory, which has been leading the evolution of microelectronics in the last two decades; devised new simulation techniques of electron devices in two and three dimensions and contributed to the development of the hydrodynamic model and to the deterministic solution of the Boltzmann transport equation based on the expansion of the distribution function in spherical harmonics. These numerical methods prompted a better understanding of the mechanisms underlying energy-threshold effects, such as impact ionization and hot-electron injection into the gate oxide.

G.B. is currently involved in the study of quantum-confined devices, such as silicon nanowires, carbon nanotubes and graphene nanoribbons, which represent possible candidates for future generations of the nanoelectronic technology. He is author or co-author of about 200 published papers and of four volumes; participated in twelve European projects as partner leader and coordinated two of them as project leader. He has been visiting on a one-year assignment a few international research laboratories, such as the Bell Labs in Murray-Hill NJ, and the IBM Watson Research Center in Yorktown NY.

G.B. is Director of the Advanced Research Center on Electronic Systems (ARCES) and is a member of the Scientific Advisory Board of the Institute of Microelectronics (IME) in Singapore, of the French Nanoelectronics Foundation, and of the Academy of Science in Bologna. In the past, he has been chairman of the Scientific Committee of the Institute for Microelectronics and Microsystems of the National Council of Research (CNR-IMM) and of the ESSDERC/ESSCIRC steering committee. Also, he has been a member of the Technology council of ST-Microelectronics and of the scientific committees of MEDEA<sup>+</sup> and of the ITC-IRST Institute in Trento, Italy.

Since 1999 he is a Fellow of the IEEE and is currently a member of the EDS Administrative Committee and of the EDS Fellows Committee. He has been Editor of the IEEE Transactions on Electron Devices in the years 1999-2000 and a member of the “Jack Morton” and “Andy Grove” Award committees.

In 2004 he was awarded the medal of honor by the President of the Italian Republic for “contributions to the science, culture and art”.