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"*This book rightly acknowledges that more Moore, more than Moore, and beyond Moore are temporary, if not artificial, partitions. The three can neither displace nor substitute one another. Denser integration, new devices, and additional materials complement each other and emerge when the technology is ready and economics is right.*"

Prof. Chenming Hu
University of California at Berkeley, USA

"*New heterogeneous integration technologies based on all aspects of materials, devices, and nanosystems are indispensable in the era of sustainable and energy-efficient nanoelectronics and nanosystems. This book provides useful information and insights into the prospects of future technological revolution.*"

Prof. Mitsumasa Koyanagi
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National Chiao Tung University, Taiwan

This book reviews essential modules to build diversified augmented nanosystems, based on nanoelectronics and new nanofunctions. It is the fourth volume of the Jenny Stanford Series on Intelligent Nanosystems, featuring seven chapters divided in two parts. The first part discusses the sustainable and energy-efficient era; evolution of non-volatile memories from 2D to 3D for terabit-class chips; 3D vertical resistive devices for storage class memories, featuring self-rectifying and self-selecting cells; and low-power and low-losses radio-frequency and millimeter-wave SOI CMOS devices for Internet of Things. The second part discusses graphene-based nanoelectromechanical switches for single-molecule and zeptogram-resolution sensing; self-powered 3D nanosensor systems for mechanical interfacing, based on piezotronic effect and triboelectric nanogenerators; and the scaling and packaging of implantable biomedical silicon devices.

Simon Deleonibus was chief scientist with CEA-Leti, a technology research unit of French Alternative Energies and Atomic Energy Commission, where his research focused on architectures of micro- and nanoelectronic devices. He retired January 2016. Before joining CEA-Leti in 1986, he was with Thomson Semiconductors (1981–1986), where he developed advanced microelectronic devices and products. He is a visiting professor at the Tokyo Institute of Technology, Japan, since 2014; National Chiao Tung University, Taiwan, since 2015; and Chinese Academy of Sciences, China, since 2016. He is a distinguished CEA research director (2002), IEEE distinguished lecturer (2004), fellow of the IEEE (2006), and fellow of the Electrochemical Society (2015). Dr. Deleonibus is a recipient of the titles *Chevalier de l'Ordre National du Mérite* (2004), *Chevalier de l'Ordre des Palmes Académiques* (2011), and *Grand Prix de l'Académie des Technologies* (2005).

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