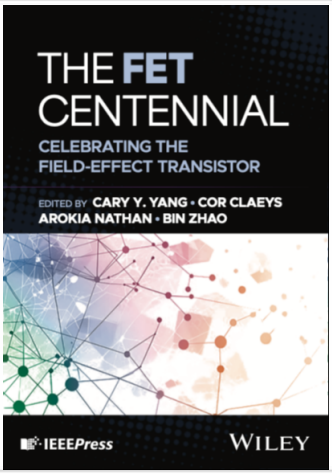

The FET Centennial: Celebrating the Field-Effect Transistor

Edited by

Cary Y. Yang, Cor Claeys, Arokia Nathan, Bin Zhao

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Presents a landmark volume documenting 100 years of field-effect transistor innovation and applications

The invention of the field-effect transistor (FET) in 1925 transformed the trajectory of modern civilization, enabling virtually every electronic device in existence today. From the earliest integrated circuits to the most advanced computers and smartphones, the FET has served as the indispensable foundation of contemporary information technology. *The FET Centennial: Celebrating the Field-Effect Transistor* commemorates this milestone by gathering a distinguished group of contributors to provide a comprehensive account of the device's history, global development, diverse applications, and potential future directions.

This unique volume begins with an in-depth exploration of the history and evolution of FET technology, including the MOSFET's rise and international advances across the United States, Europe, and Asia. The second section highlights critical applications and integration processes, ranging from memory and logic devices to CMOS image sensors, analog/RF CMOS, and emerging thin-film and wide-bandgap transistors. The final section addresses state-of-the-art developments, such as 3D and gate-all-around FETs, nanoscale transport phenomena, and the incorporation of novel 2D materials, while considering the possibility of what is next for FET and what might come after.

A singular resource that not only documents a century of achievements but also contextualizes the field-effect transistor's enduring importance and likely trajectory in the decades ahead, *The FET Centennial*

- Addresses both historical milestones and technological disruptions shaping current and future electronics
- Examines international research and development with narratives from the United States, Europe, and Asia
- Covers device structures from MOSFETs to III-V and 2D-material-based FETs
- Includes forward-looking analyses of nanoscale transport, 3D architectures, and GAAFET innovations
- Features detailed coverage of process integration, interconnects, lithography, and compact modeling

Authored by globally recognized experts with leadership roles in academia, industry, and professional societies, *The FET Centennial: Celebrating the Field-Effect Transistor* is essential reading for graduate and senior undergraduate students in electrical engineering, materials science, and applied physics courses such as Semiconductor Devices, Integrated Circuit Technology, and Microelectronics. It is also an indispensable reference for researchers, practicing engineers, and historians of science and technology.

Cary Y. Yang, PhD, is Professor of Electrical and Computer Engineering at Santa Clara University. An IEEE Life Fellow, he has served as Editor of *IEEE Transactions on Electron Devices*, President of the IEEE Electron Devices Society, and as a member of the IEEE Board of Directors. His research spans silicon-based nanoelectronics, nanocarbon interconnects, and nanostructure interfaces.
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"The FET Centennial – Celebrating the Field-Effect Transistor"

Cary Y. Yang, Cor Claeys, Arokia Nathan, and Bin Zhao, editors

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