



River Publishers

Ultra-Low Input Power Conversion Circuits based on Tunnel-FETs

Authors:

David Cavalheiro, Universitat Politècnica de Catalunya, Spain

Francesc Moll, Universitat Politècnica de Catalunya, Spain

Stanimir Valtchev, Universidade Nova de Lisboa, Portugal

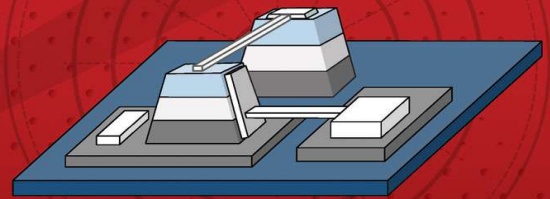
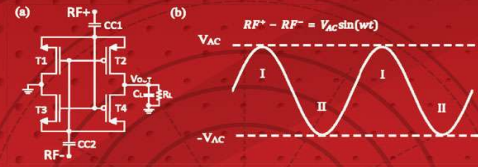
The increasing demand in electronic portability imposes low power consumption as a key metric to analog and digital circuit design. Tunnel FET (*TFET*) devices have been explored mostly in digital circuits, showing promising results for ultra-low power and energy efficient circuit applications. The *TFET* presents a low inverse sub-threshold slope (SS^{-1}) that allows a low leakage energy consumption, desirable in many digital circuits, especially memories.

In this book, the *TFET* is explored as an alternative technology also for ultra-low power and voltage conversion and management circuits, suitable for weak energy harvesting (*EH*) sources. The *TFET* distinct electrical characteristics under reverse bias conditions require changes in conventional circuit topologies. In this book, ultra-low input power conversion circuits based on *TFETs* are designed and analyzed, evaluating their performance as rectifiers, charge pumps and power management circuits (*PMC*) for *RF* and *DC EH* sources.

River Publishers Series in Circuits and Systems

Ultra-Low Input Power Conversion Circuits based on Tunnel-FETs

David Cavalheiro, Francesc Moll and Stanimir Valtchev



River Publishers

River Publishers Series in Electronic Materials, Circuits and Devices

ISBN: 9788793609761

e-ISBN: 9788793609754

Available From: May 2018

Price: € 90.00

KEYWORDS:

Tunnel FET, Energy harvesting, Ultra-low-voltage circuits, nanopower, power management circuits.



www.riverpublishers.com
marketing@riverpublishers.com