
Contents

1	IoT: Bird's Eye View, Megatrends and Perspectives	1
	Massimo Alioto	
2	IoT Nodes: System-Level View	47
	Pascal Urard and Mališa Vučinić	
3	Ultra-Low-Power Digital Architectures for the Internet of Things	69
	Davide Rossi, Igor Loi, Antonio Pullini, and Luca Benini	
4	Near-Threshold Digital Circuits for Nearly-Minimum Energy Processing	95
	Massimo Alioto	
5	Energy Efficient Volatile Memory Circuits for the IoT Era	149
	Jaydeep P. Kulkarni, James W. Tschanz, and Vivek K. De	
6	On-Chip Non-volatile Memory for Ultra-Low Power Operation	171
	Meng-Fan Chang	
7	On-Chip Non-volatile STT-MRAM for Zero-Standby Power	213
	Xuanyao Fong and Kaushik Roy	
8	Security Down to the Hardware Level	247
	Anastacia Alvarez and Massimo Alioto	
9	Design Methodologies for IoT Systems on a Chip	271
	David Flynn, James Myers, and Seng Toh	
10	Power Management Circuit Design for IoT Nodes	287
	D. Brian Ma and Yan Lu	
11	Energy Harvesting	317
	Ying-Khai Teh and Philip K.T. Mok	
12	Ultra-Low Power Analog Interfaces for IoT	343
	Jerald Yoo	

13	Ultra-Low Power Analog-Digital Converters for IoT	361
	Pieter Harpe	
14	Circuit Techniques for IoT-Enabling Short-Range ULP Radios	385
	Pui-In Mak, Zhicheng Lin, and Rui Paulo Martins	
15	Battery Technologies for IoT	409
	Jeff Sather	
16	System Packaging and Assembly in IoT Nodes	441
	You Qian and Chengkuo Lee	
17	An IPv6 Energy-Harvested WSN Demonstrator Compatible with Indoor Applications	483
	Pascal Urard, Liviu Varga, Mališa Vučinić, and Roberto Guizzetti	
18	Ferro-Electric RAM Based Microcontrollers: Ultra-Low Power Intelligence for the Internet of Things	503
	Sudhanshu Khanna, Mark Jung, Michael Zwerg, and Steven Bartling	

Enabling the Internet of Things
From Integrated Circuits to Integrated Systems

Alioto, M. (Ed.)

2017, XIV, 520 p. 476 illus., 388 illus. in color.,

Hardcover

ISBN: 978-3-319-51480-2