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Towards Green ICT

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ICT is playing an increasingly important role in both business and individual's private life. It has increased international interconnectedness and speed up the process of globalization. But on the other side the total energy consumption by the communication and networking devices and the relevant global CO emission is increasing exponentially. ICT has, in many ways, a vital role to play. It accounts for about two percent of global CO emissions. Telecommunications applications can have a direct, tangible impact on lowering greenhouse gas emissions, power consumption, and achieve efficient recycling of equipment waste.

This book is the outcome of the special session on Green Communications at 'The 12th International Symposium on Wireless Personal Multimedia Communications' (WPMC) held in September '09 in Sendai, Japan. To the best of the editors' knowledge this is the first book on the Green Information and Communication Technologies (ICT) and can be considered a milestone and a key-tool aimed at driving the industrial, scientific and academic efforts of the international community to guarantee a greener future to the whole planet.
Section I of the book **Towards Green ICT** provides the necessary background and technical content to understand the vision and the role of green communication packed with details of the technologies like Zigbee and RFID in turning the planet earth greener. Section II covers a number of paradigm-shifting technical approaches including energy-efficient deployment through optimizations in the planning of ICT networks, energy-efficient wireless transmission techniques, reduced transmission power & reduced radiation, cross-layer optimization methods, and opportunistic spectrum sharing without causing harmful interference pollution. Section III covers the application of Intelligent WiMAX (I-WiMAX), a green radio technique able to support new maritime communication services and ICT based Business models.

The coverage of new and upcoming issues on Green ICT makes it a good choice for educators, industry practitioners, regulators, researchers and students.



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