Preface

With the unceasing expansion of mobile communication network and the explosive growth of mobile Internet, more and more attention has been paid to the shortage of spectrum resources, the huge energy consumption and to network optimization. Innovative solutions are required to enhance the spectrum efficiency and to lower the power consumption of terminal and access equipment; transmission and networking technologies need also further improvements accordingly; and network protocols must adapt to the future wireless system.

In the year of 2009, the Ministry of Science and Technology of China and Swedish Governmental Agency for Innovation Systems (VINNOVA) launched a strategic cooperation project on IMT-Advanced and Beyond technologies, perspective issues regarding emerging wireless transmission, networking, and protocol technologies were deeply investigated. Organized by Science China Information Sciences and FuTURE FORUM, this special issue intends to introduce the joint research work between Chinese and Swedish scientists in this field.

This special issue contains 16 papers which covers MIMO transmission, relay and coordinated multi-point networking, cross-layer design of radio link, source and channel coding, radio resource allocation, heterogeneous wireless networks, self organizing network, etc., and reflects the key advances and state-of-the-art of the Chinese and Swedish joint research on the IMT-Advanced and Beyond technologies.

Participating in the global IMT-Advanced and Beyond R&D, the Chinese and Swedish researchers are ready to make greater contributions to the development of the global future wireless communication technologies.

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