

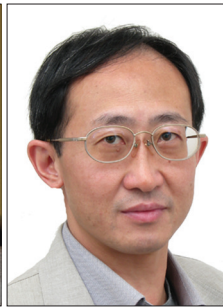
GREEN COMMUNICATIONS AND COMPUTING NETWORKS



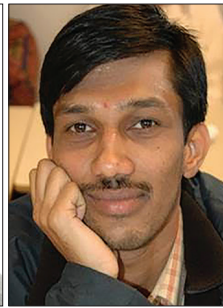
Jinsong Wu



John Thompson



Honggang Zhang



RangaRao Venkatesha Prasad



Song Guo

Under the framework of the United Nations Framework Convention on Climate Change (UNFCCC) and the Conferences of the Parties (COPs), the United Nations Climate Change Conferences have been held yearly to evaluate the progress in dealing with climate change since 1995, when COP 1 was held in Berlin, Germany. COP20, in Lima, Peru in December 2014, reached an agreement that urged all countries to achieve their greenhouse gas (GHG) emission reduction targets by 31 March 2015. This information is called an Intended Nationally Determined Contribution (INDC). With the deadline of 31 March 2015 already passed, only 35 of the 193 countries had published their INDCs. After solid and united global efforts, from 30 November to 12 December 2015, COP 21 was held in Paris, France, when, in a historical breakthrough and milestone toward securing the future Earth, a global agreement on the reduction of climate change was agreed upon by representatives of more than 193 countries in attendance. According to the COP21 Organizing Committee, the agreement was to limit global warming to well below 2°C compared to pre-industrial levels. By 12 December 2015, 160 INDCs had been submitted, and on February 04, 2016, Nepal confirmed the 161st INDC, which together represented 188 countries. The requirement that the agreement would become legally binding is that at least 55 countries, which jointly represent at least 55 percent of global greenhouse emissions, have to sign the agreement in New York between 22 April 2016 (Earth Day) and 21 April 2017, and also adopt it within their own legal systems. Readers may find some detailed information from the sixth United Nations Environment Programme (UNEP) Emissions Gap Report, which was available in 2015 [1].

The agreement in COP21 greatly encouraged and promoted green information and communications technologies (ICT) [2]. A parallel trend to the newer generation global green revolution is the global challenges in big data issues, and there are recent studies discovering the relations between the two trends [3, 4]. In 2014, the IEEE Technical

Committee on Green Communications and Computing (TCGCC), later jointly with the IEEE Technical Sub-Committee on Big Data (TSCBD), initialized the efforts in a Call for Papers (CFP) of an *IEEE Access* Special Section on Big Data for Green Communications and Computing [5], which was the first available journal Special Issue on this topic with a deadline finally extended to May 2015. To better serve the relevant communities, this Series has recently revised and extended the scope of the CFP to welcome more high-quality and cutting-edge submissions from relevant fields and communities, especially including topics relevant to big data and software-defined systems.

This May 2016 fifth issue of the IEEE Series on Green Communications and Computing Networks includes two articles relevant to green ICT.

The article “Solar Powered Cellular Base Stations: Current Scenario, Issues and Proposed Solutions,” written by V. Chamola and B. Sikdar, discusses how renewable energy can be used to power future mobile base stations to improve energy efficiency and reduce reliance on carbon emitting fuels, motivates the use of solar power, describes some of the key system components to implement this technology, discusses some existing industrial solutions, and highlights future improvements and challenges for such base stations, related to both deployment and mobile network operation issues.

The article “Software Defined Smart Home,” written by K. Xu, X. Wang, *et al.*, describes the concept of the software defined smart home platform, which integrates the design features of virtualization, openness, and centralization in the smart home system, and flexibly supports the difference between family scenes and user demands.

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Daniel C. Kilper, for his past efforts. We would like to introduce Prof. RangaRao Venkatesha Prasad and Prof. Song Guo, who joined this Series Editor team in early 2016. We also highlight the great support to this Green Series from the members of the IEEE Technical Committee on Green Communications and Computing (TCGCC).

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BIOGRAPHIES

JINSONG WU [SM] (wujs@ieee.org) is an associate professor in the Department of Electrical Engineering, Universidad de Chile, Santiago, Chile. He is the founder and founding Chair of the IEEE Technical Committee on Green Communications and Computing (TCGCC). He is an Editor of the *IEEE Journal on Selected Areas in Communications* Series on Green Communications and Network-

ing. He was the leading Editor and co-author of the comprehensive book *Green Communications: Theoretical Fundamentals, Algorithms, and Applications* (CRC Press, 2012).

JOHN THOMPSON [FM] (john.thompson@ed.ac.uk) currently holds a personal chair in Signal Processing and Communications at the University of Edinburgh, United Kingdom. He was deputy academic coordinator for the Mobile Virtual Centre of Excellence Green Radio project and now leads the U.K. SERAN project for 5G wireless. He also currently leads the European Marie Curie Training Network ADVANTAGE, which trains 13 Ph.D. students in smart grids. He was also a Distinguished Lecturer on green topics for IEEE ComSoc in 2014–2015.

HONGGANG ZHANG [SM] (honggangzhang@zju.edu.cn) is a full professor at Zhejiang University, China. He was International Chair Professor of Excellence at UEB and Supélec, France (2012–2014). He served as Chair, ComSoc Technical Committee on Cognitive Networks (TCCN) (2011–2012). He has served as leading Guest Editor of *IEEE Communications Magazine* Feature Topics on Green Communications. He was General Co-Chair of IEEE GreenCom 2010. He was co-editor/co-author of the book *Green Communications: Theoretical Fundamentals, Algorithms and Applications* (CRC Press).

RANGARAO VENKATESHA PRASAD [SM] (R.R.VenkateshaPrasad@tudelft.nl) received his Ph.D. from IISc, Bangalore, India, when a scalable VoIP conferencing platform was designed. Parts of his Ph.D. thesis led to a startup venture, Esqube Communication Solutions. In 2005, he joined TUDelft. He has worked on personal networks, IoT, CPS, and energy harvesting networks. The work at TUDelft has resulted in 180+ publications. He is also a Senior Member of ACM.

SONG GUO [SM] (sguo@u-aizu.ac.jp) is a full professor at the School of Computer Science and Engineering, University of Aizu, Japan. He has published about 300 papers in refereed journals and conferences in these areas, and received three IEEE/ACM Best Paper Awards. He is the Secretary of IEEE Technical Subcommittee on Big Data. He is also a Senior Member the ACM and an IEEE Communications Society Distinguished Lecturer.

"The best way to predict the future is to invent it."

-Alan Kay



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