

## EDITORIAL PREFACE

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Today we are living in an information world where three-fourth space is occupied by the ‘data oceans’ housed in data centres. Unlike the oceans of our physical world, the data oceans are ever expanding – from peta-bytes to exa-bytes and beyond, nobody knows now where the limit is. More importantly, the data oceans are interconnected via the Internet and wireless networks. In the near future, a portion of the data oceans will evaporize to form ‘big data clouds’. Add to it one more dimension. The unbridled success of wireless networks for the Internet access has taken mobile telecommunications even to the remotest areas of the world. Just count the number of batteries in all these billions of mobile devices. The point we are trying to drive is that all these data centres, computing devices, network gears etc are guzzling enormous amount of energy and in the process polluting our dear earth invisibly. In essence, all of this has come at a steep environmental cost: for instance, the global network, including the technology required to run it, emits about 250 million tons of carbon dioxide annually,

roughly the same as is produced yearly by 50 million automobiles (20 percent of all the autos in the U.S.), according to Green Touch, a new international consortium of businesses, government agencies and academics formed to address this problem. This statistic is supported by Gartner too, which has observed that ICT industry globally accounts for approximately 2% of global carbon dioxide (CO<sub>2</sub>) emissions. It would take a forest of the size of the whole of the U.K. to absorb 250 million tons of CO<sub>2</sub> annually!

On a happier note, academia, industries and governments have already started looking at this serious issue, and, on a positive note, technology and business partnerships are being forged to bring down the energy consumption of telecom, by the order of 1,000 fold! New regulations such as the European Code of Conduct for Data Centre (ECCDC), have come up. In view of the criticality and importance of the above problem, we have also decided to take a serious look at energy efficiency and green computing in the next two issues of IJBDCN.

Our sincere thanks to Dr. Josip Lorincz of the University of Split, Croatia, who, upon being requested by us, has teamed up with Dr. Jinsong Wu of Bell Labs, Shanghai, China and Dr. Linjia Liu of the University of Kansas, U.S. to bring out two successive Special Issues on “Green Networking and Computing”.

We hope that the research papers in these Special Issues will be of great interest to you and exhibit the much needed outcomes in the areas of green computing.

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*The book edited by Dr. Sridhar and Dr. Saha titled Web-Based Multimedia Advancements in Data Communications and Networking Technologies (as part of the series in Advances in Business Data Communications and Networking), ISBN: 978-1-4666-2026-1 (Hardcover); ISBN: 978-1-4666-2027-8 (eBook) has just been published by IGI Global.*