

The 2013 IEEE International Conference on Green Computing and Communications



Call for Papers - IEEE International Conference on Green Computing and Communications 2013 (GreenCom 2013)

August 20-23, 2013, Beijing, China
<http://www.china-iot.net/GreenCom2013.htm>

Paper submission firm deadline: May 19, 2013 23:59 EDT (US Eastern Time)

GreenCom2013 is sponsored by IEEE, IEEE Computer Society, and IEEE Technical Committee on Scalable Computing. GreenCom 2013 is also supported by IEEE Technical Subcommittee on Green Communications and Computing (TSCGCC).

Scope and Motivation

Computer networks, communication systems, and other IT infrastructures consume significant amounts of energy and natural resources. This contributes to anthropogenic greenhouse gas emissions and causes harmful pollution from the production and disposal of IT equipment. To reduce the environmental impact of IT infrastructures and enable a future sustainable society, new models, algorithms, methodologies, platforms, tools, and systems are urgently needed. Future IT infrastructures need to be designed with greater energy and resource use efficiency. Advances are needed in green computing, green communications, smart power grids, and many other related areas. Applications, as well as corresponding adoption, business model, economical, and social issues have also become keys to use green technologies.

The 2013 IEEE International Conference on Green Computing and Communications (GreenCom 2013) will be an exciting international forum for scientists, engineers, and researchers to exchange ideas about state-of-the-art green computing and communications, and to identify emerging research areas for future work. GreenCom 2013 builds on the previously successful GreenCom conferences held as GreenCom 2012 (Besançon, France, November 2012), GreenCom 2011 (Chengdu, China, April 2011), GreenCom 2010 (Hangzhou, China, December 2010).

Submission Instructions

Authors are invited to submit original papers that must not have been submitted to, or have been published in, any other workshop, conference, or journal. All papers will be peer-reviewed by members of the Program Committee and be evaluated for originality, significance of the contribution, technical correctness, and presentation.

It is expected that there is a presenter presenting an accepted paper at the meeting. In the event that the presenter is unable to present the paper, the presenter has to quickly notify the program chairs and track chairs in order to make substitute arrangements. The paper may be excluded from IEEE Xplore, CSDL (IEEE Computer Society Digital Library), and EI-index if the presenter for the paper does not appear at the conference.

Papers (the length of each paper could be from 4 pages to 8 pages without overlength charges, a maximum of 2 extra pages will be allowed with an overlength charge of US\$100.00 per page) are solicited. Prepare your paper in IEEE CS format. Paper formatting instructions and templates ("8.5 x 11" two-column format) can be found at:

<http://www.computer.org/portal/web/cscps/formatting>

Technical Tracks

GreenCom 2013 has 7 Technical Tracks independently managed by Track Co-Chairs. Papers are to be submitted to the Technical Tracks as described below. GreenCom 2013 is using EDAS as its conference management system.

Track ESAEI: Economics, Social Networks, Applications, and Emerging Interdisciplinary

Track Chairs:

Louis-Francois Pau, Copenhagen Business School, Rotterdam School of Management and University of Pretoria (Email: lpau@nypost.dk)

Loutfi Nuaymi, Telecom Bretagne, France (Email: loutfi.nuaymi@telecom-bretagne.eu)

Irwin King, Chinese University of Hong Kong, China (Email: king@cse.cuhk.edu.hk)

EDAS Paper submission link:

<https://edas.info/newPaper.php?c=14271>

Topics of interest include, but are not limited to:

http://www.china-iot.net/GreenCom_program_track1.htm

Topics of Interest:

- Economics and businesses
 - Economic and business impact of green computing and communications
 - User and business incentives for adoption of energy savings computing and communications appliances
 - Demand side management and simulation of user behaviors
 - Business, economics, social models of Green ICT technologies
 - Pricing strategies for Green communications and computing services
 - Costs, OPEX and CAPEX models for Green communications and computing
 - Uncertainty analysis in Green ICT investments
 - Marketing strategy/product life-cycle management
 - Roadmap for Sustainable ICT
 - Development Strategy for Sustainable ICT production, operation, and Services
- Social networks
 - Social and household acceptability of energy savings technology and life style changes
 - Theory of Social networks used to achieve Green behaviors and reduced emissions
 - Cases and applications of Social networks towards green objectives
- Application
 - End user Green behavior and usage patterns
 - Application level Green Computing and communications
 - Applications of energy savings in computing and networks (micro, macro and industry sector wide)
 - Case studies of real life deployments with measured energy savings from computing and communications
 - Integrated usage, service and supply models incorporating to determine energy savings and their efficiency
 - Energy efficiency performance evaluation and benchmarking in computing and communications
 - Embedding of micro grids in computing and communications infrastructures
 - Algorithms, networks and technologies for real time matching of energy supply and demand

- Impact and value assessment of Green Computing and communications
- Emerging interdisciplinary
 - ICT for general sustainability
 - Interdisciplinary green technologies
 - Sustainability and environmental issues
 - Recycling and reuse
 - Green manufacturing and green engineering
 - Interdisciplinary issues, approaches, applications, and aspects for Green communications and computing
 - Standardization as a business tool for success in Green ICT
 - Prospects for energy savings from computing and communications and impact on carbon emissions & climate policy
 - Impact of energy savings in computer and communications networks on energy supply security
 - Energy harvesting, storage and recycling in computing and communications systems
 - Corporate social responsibility and energy savings
 - Regulatory and policy changes needed to enable communications networks and smart grids coordination
 - Regulatory and policy changes needed to enable use and production of renewable energy by computing and communications industries
 - Smart Cities
 - Green Internet of things
 - Green buildings and offices
 - Supply chain management
- - Surveys
 - Surveys for any relevant topics in this track

Track CN: Communications and Networking

Track Chairs:

Fei Richard Yu, Carleton University, Canada (Email: richard_yu@carleton.ca)

Pengbo SI, Beijing University of Technology, China (Email: sipengbo@bjut.edu.cn)

EDAS Paper submission link:

<https://edas.info/newPaper.php?c=14257>

Topics of interest include, but are not limited to:

http://www.china-iot.net/GreenCom_program_track2.htm

- Trends and challenges of achieving low energy consumption and low GHG emission
- Energy efficiency and GHG emission metrics and measurements in communication networks
- Communication networks for smart grids
- Regulation and standardization
- Energy efficient hardware, devices and designs
- Coordinated power and GHG emission control for network-wide optimization
- QoS provisioning and resource management in green radio networks
- MAC, routing and transport protocols for green communication networks
- Cross-layer optimization of green communication networks
- End-to-end modeling and performance of green communication networks
- Pricing and billing for green communication devices and services
- Green 3G/4G/5G, wireless wide area infrastructures, short range networks, mesh topologies
- Security of green communication networks
- Signal processing for green communication networks
- Information theory for green communication networks
- Cooperative theory, game theory and causal reasoning for green communication networks
- Interdisciplinary research for green communication networks
- Standards, policy and regulation for green communication networks
- Experimental test-beds and results
- Surveys

Track DHSMT: Devices, Hardware, Software, Methodologies, and Tools

Chairs:

Benjamin Belzer, Washington State University, USA (Email: belzer@eecs.wsu.edu)

Maryline Chetto, Universite de Nantes, France (Email: maryline.chetto@univ-nantes.fr)

Dominique Noguet, CEA-LETI, France (Email: dominique.noguet@cea.fr)

EDAS Paper submission link:

<https://edas.info/newPaper.php?c=14267>

Topics of interest include, but are not limited to:

http://www.china-iot.net/GreenCom_program_track3.htm

- Green designs for materials and devices
- Green designs for very-large-scale integration (VLSI) and micro-architecture
- Green designs for circuits
- Green designs for radio frequency devices and antennas
- Green designs for communication chips and hardware
- Green designs for communication software and applications
- Green designs for programming, algorithm and software architecture
- Green designs for system-level software, such as operating systems, compilers and programming environments
- Green hardware/software co-designs
- Virtualization and thin client methods
- Dynamic Power Management (DPM) / Dynamic voltage and frequency scaling (DVFS)
- Software applications for green environments
- Thermal management and applications
- Energy-efficient network infrastructures and protocols
- Performance characterization and evaluation for green computing systems and applications
- Standards and metrics for green computing and communications
- Energy consumption simulation, optimization, management and evaluation tools
- Low power networks-on-chip (NoCs) using novel and/or emerging interconnect technologies
- Combined crosstalk avoidance coding and error control coding schemes for low power on-chip communications
- Network coding in networks-on-chip (NoCs) for improved throughput and reduced power consumption
- Software defined radio communications
- Software defined networking
- Software defined computing
- Reconfigurable chips, hardware, and devices
- Reconfigurable software, systems, and applications
- Surveys

Track MMASA: Metrics, Models, Algorithms, Systems, and Architecture

Track Chairs:

Rose Qingyang Hu, Utah State University, USA (Email: rosehu@ieee.org)

EDAS Paper submission link:

<https://edas.info/newPaper.php?c=14263>

Topics of interest include, but are not limited to:

http://www.china-iot.net/GreenCom_program_track4.htm

- Green metrics and models
- Models, methodologies and paradigms for green computing and communications
- Green design, manufacturing, use, disposal, and recycling of computing and communication systems
- Algorithms, protocols, approaches for green computing
- Algorithms, protocols, approaches for green communications and networking

- System and architecture designs for green ICT
- Case studies for green systems and architecture
- Sustainable computing strategies and approaches
- Energy-aware distributed computing and communications
- Energy-aware high performance computing
- Green and sustainable Internet architecture
- Scalable algorithms, systems, and architecture
- Green building, factory, campus designs
- Physical layer logarithms for green computing and communications
- MAC layer logarithms for green computing and communications
- Application layer algorithms for green computing and communications
- Cross layer design algorithms for green computing and communications
- Analysis for metrics, models, algorithms, systems, and architecture
- Energy-aware scheduling
- Energy-aware routing/switching
- Energy-efficient network services and operations
- Renewable energy based algorithms, systems, and architecture
- Energy harvesting systems and architecture
- Smart grid systems and architecture
- Green web approaches, systems, and architecture
- Surveys

Track OACCS: Optimization and/or Analysis in Communications, Computing, and Smart Grids

Track Chairs:

Rui Zhang, National University of Singapore, Singapore (Email: elezhang@nus.edu.sg)

David K. Y. Yau, Purdue University, USA (Email: yau@cs.purdue.edu)

EDAS Paper submission link:

<https://edas.info/newPaper.php?c=14253>

Topics of interest include, but are not limited to:

http://www.china-iot.net/GreenCom_program_track5.htm

- Optimization and/or analysis for green computing and communications devices, systems, and applications
- Optimization and/or analysis for green storage, data centers
- Optimization and/or analysis for quality of service / quality of experience in computing and communications
- Optimization and/or analysis for high-performance computing
- Optimization and/or analysis for super and/or parallel computing
- Optimization and/or analysis for physical layer communications
- Applications and optimization in Cloud, Grid, Cluster Computing
- Optimization and/or analysis of spectral efficiency or throughput
- Optimization and/or analysis for performance in computing, communications
- Models for computing, communications, and storage optimization
- Analysis for computing and/or communication and/or storage algorithms, approaches, devices, and systems
- Optimization for distributed computing and/or communications
- Optimization for physical layer communications
- Optimized User experiences
- Scalability for optimization
- Resource and/or energy management
- Scheduling for computing, communications
- Energy-efficient mobile computing
- Optimal service partitioning and offloading
- Home energy management systems
- Energy-efficient sensing, sub-metering, and load disaggregation
- Voltage and/or frequency scaling
- Adaptive and predictive algorithms for energy control and optimization
- OS and middleware for energy efficiency
- Embedded system energy efficiency
- Energy-efficient network architectures and protocols

- QoS- and energy-aware dynamic sizing and resource scheduling
- Optimization and/or analysis for green cognitive communications, computing
- Optimization and/or analysis for green physical layer communications
- Optimization and/or analysis for Energy Cooperation
- Energy-Efficient Cooperative Communication
- Optimization and/or analysis for Small-Cell Networks and Energy Efficiency
- Optimization and/or analysis for Interference Management
- Base Station Adaptation for Energy Consumption Optimization
- Optimization and/or analysis for Energy Harvesting Communications and Networking

- Optimization and/or analysis for Energy-Efficient Wireless Access Techniques
- Optimization and/or analysis of Algorithms and/or protocols and/or approaches for Energy Efficiency
- Resource Allocation in Green Communication
- Green Solutions for Wireless Networks
- Distributed Storage for smart grids
- Renewable Integrations
- Micro Grids
- Demand Side Management
- Demand Response
- Dynamic Pricing
- Optimization and/or analysis for Communications and Networks for Smart Grids
- Surveys

Track SBDC: Storage, Big Data, and Cloud Computing

Track Chairs:

Wanjiun Liao, National Taiwan University, Taiwan (Email: wjliao@cc.ee.ntu.edu.tw)

Christine Morin, INRIA, France

Cheng-Fu Chou, National Taiwan University, Taiwan (Email: ccf@csie.ntu.edu.tw)

EDAS Paper submission link:

<https://edas.info/newPaper.php?c=14261>

Topics of interest include, but are not limited to:

http://www.china-iot.net/GreenCom_program_track6.htm

- Fundamentals and theories of cloud computing
- Green IaaS, PaaS, SaaS services
- Energy awareness in cloud services
- Green terms in Service Level Agreements (SLA)
- Quality of Service and energy efficiency
- Power and energy management in clouds
- Energy-aware cost models in clouds
- Autonomic management of green datacenters
- Renewable energy in cloud computing
- Energy-efficient resource management in clouds
- Energy-efficient resource reservation in clouds
- Software and hardware for cloud computing
- Energy-aware resource allocation in clouds
- Green virtual machine scheduling
- Green peer to peer networking
- Peer to peer cloud systems and networks
- Cloud computing provisioning/pricing
- Consolidation algorithms
- Server overload/underload management
- Exploiting server hardware features for greener datacenters
- Energy-efficient data movement in clouds and cloud federations
- Green cloud computing and networking
- Green distributed file systems for big data
- Green databases for big data
- Green data storage devices and systems
- Green data analytics frameworks
- Energy-efficient MapReduce

- Models for power consumption in clouds and data storage system
- Nature-inspired approaches for green cloud computing
- Energy-efficient fault-tolerance strategies for dependable cloud computing and data storage
- Power consumption sensing and monitoring in datacenters
- Power measurement in datacenters
- Power consumption log management in datacenters
- Power consumption off-line and on-line analysis
- Power management in hypervisors
- Green data centers
- Scalable architecture and approaches for data centers
- Energy-efficient cooling
- Experience with green data centers and clouds
- Case studies for green cloud computing
- Social computing and its impacts on green data storage and cloud computing
- Energy efficient clustering, grid computing
- Resource and task scheduling in cloud computing
- Fault tolerance and reliability in cloud computing
- Access control for data storage and cloud computing
- Resource virtualization
- Standards, regulations and policies for green data storage and cloud computing
- Cloud models
- Cloud services
- Cloud applications
- Optimization for cloud computing
- Intelligent/agent-based cloud computing
- Surveys of green approaches for cloud computing and big data management
- Surveys of any relevant topics in this track.

Track SPTC: Security, Privacy, and Trust Computing

Track Chairs:

Joonsang Baek, Khalifa University of Science, Technology and Research, United Arab Emirates (Email: joon.baek@kustar.ac.ae)

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EDAS Paper submission link:

<https://edas.info/newPaper.php?c=14265>

Topics of interest include, but are not limited to:

http://www.china-iot.net/GreenCom_program_track6.htm

- Coding and cryptography for green communications and computing
- Remote data integrity and possession
- Dependability, availability and forensics in clouds
- Secure cooperative computation
- Private information retrieval from clouds
- Distributed computation and access control on encrypted data
- Security and privacy in vehicular networks
- Privacy enhanced social networks
- Security and privacy in electronic healthcare networks
- Security and privacy in Internet of things
- Privacy in data disclosure and mining
- Green cryptography for resource-constraint information systems
- Secure smart grid technology for future green energy management
- Lightweight cryptography for green computing
- Digital forensics and crimes
- Cloud computing security
- Security policy and privacy requirements
- Cyber security
- Biometrics
- Digital watermarking
- Quantum cryptography
- Physical layer security for communications

- Security algorithms and applications
- Surveys

Call for new workshop proposals for GreenCom 2013.
http://www.china-iot.net/Main_workshops_GreenCom.htm

Please contact with GreenCom 2013 Workshop Chairs:
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SCI-indexed Journal Special Issues CFP, Call for special issues
http://www.china-iot.net/GreenCom_issues.htm

Extended versions of selected/best papers will be considered for publication in many SCI/E-indexed Special Issues:

- *ACM Transactions on Intelligent Systems and Technology
 - *IEEE System Journal
 - *International Journal of Communication Systems
 - *Frontiers of Computer Science
- (More SCI/E-indexed journal will be announced)

Call for guest editors and planned Special issue to join and support GreenCom 2013.
Please contact with GreenCom2013@googlegroups.com

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