



Call for Papers

CPSS Transactions on Power Electronics and Applications

Special Issue on Next-Generation Datacenter Power Conversion Technologies, 2022

Scheduled Publication Time: September 30, 2022

Modern datacenter consumes nearly 3% of global electricity use, and it is becoming the critical infrastructure with the rapid evolvement of emerging information technologies such as 5G communications, big data, cloud computing, and artificial intelligence. The rising demand for data center services is accompanied by massive energy consumption, and it motivates intensive research on cost-effective, reliable, and greener electricity to optimize the utilization of electric power. Besides, the cooling and power density of the server racks have brought enormous challenges to datacenter power conversion technologies.

This special issue aims to provide the latest power architectures, power electronic topologies, modeling and analysis methods, and control strategies to embrace next-generation datacenter power conversion. Higher energy efficiency, higher power density, better cooling, and cost reduction are the major driving forces to shape greener datacenter power management technologies. We particularly encourage the contributions from the researchers who work in the intersection of electrical engineering, modeling and simulation, and computer science. Moreover, researchers from all relevant fields are invited to submit, review, and survey the original research papers. Topics of interest of this Special Issue include, but are not limited to:

- Advancements in power architectures
- Ac/dc PFC converters, dc transformer (DCX), voltage regulator modules (VRM)
- System modeling and control methods for power converters
- Sustainability, reliability, and cost optimization
- Thermal management and cooling solutions for converter and server
- Energy storage technology
- Solid-state transformers
- Power-down management and uninterrupted power supply (UPS)
- Burdened energy management
- Start-up and load dynamic response problems
- Integration of renewable energy and cloud computing
- Wide bandgap power devices and power management IC
- Telecommunication power supply

The manuscripts should be submitted through Manuscript Central at <https://mc03.manuscriptcentral.com/tpea-cpss>. Submissions must be marked “Next-Generation Datacenter Power Conversion Technologies, 2022” on the cover page. The information about manuscript preparation and requirements is provided on <http://tpea.cpss.org.cn/Home/Page?collId=dc338218-413b-45d5-8a23-cd91d6c90b2b>. Manuscripts submitted to this Special Issue will be reviewed and handled by the guest editorial board as noted below.

Deadline for Submission of Manuscripts: May 1, 2022

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Timeline:

- May 1, 2022 – Manuscripts submission deadline
- July 1, 2022 – Final acceptance notification
- August 1, 2022 – Camera-ready manuscripts for publication