

Call for Papers

IEEE Journal of Emerging and Selected Topics in Power Electronics

Sp. Issue on Sustainable Energy through Power-Electronic Innovations in Cyber-Physical Systems, 2020

Scheduled Publication Time: September 2020

Energy sustainability and sustainable energy systems are the basis of long-term sustenance of human existence, advancement, and prosperity, social equity and mobility, and environmental sustenance. The manifestation of the confluence of physical (power/energy) layers and cyber (control, communication, computation) layer is evident in plurality of applications, being pursued globally. Such applications include but are not limited to multiple embodiments of smart connected and self-sustainable electronic grids at variety of voltage and power levels and scalability; smart cities, centers, buildings, and villages; electronically-controlled mobility, transportability, and energy transformation (e.g., electric vehicles and locomotives, electronically-controlled semiconductor-based transformers); healthcare and biomedicine; cognitics, robotics, and wearables; lighting; telecommunications; aerospace, avionics, and space applications; off-grid and rural-electrification applications; and network-on chips, edge computing, internet of things and everything. It is, therefore, incumbent on us – the IEEE Power Electronics Society – to play its part in trying to explore, propose, pursue, demonstrate, and validate ideas that attempt to address and resolve the grand challenges associated with the thematic focus of the special issue.

Overall, the main objective of this Special Issue is to collect the latest developments in inventions, innovations, and applications of sustainable energy through power-electronic innovations in physical and cyber systems. Prospective authors are invited to submit original contributions, survey, and tutorial papers for review for publication in this special issue. Applications of interest encompass all aspects of emerging and state-of-the art power-electronic thrusts and innovations – from component to system to network levels.

Special Issue Thematic Focus

- Cyber-physical and resilient energy systems
- Smart micro/mini/nano/pico/weak/rural grids
- Smart cities, buildings, e-mobility, and data centers
- Energy internet, IoTs/IoEs, smart energy routing
- Energy sustainability and resilience via novel renewable, carbon-neutral, energy-storage, energy-harvesting, energy-transfer technologies
- Healthcare and biomedicine; cognitics, robotics, and wearables; lighting; telecommunications; aerospace, avionics, and space applications

Supporting Technology Focus Areas

- PE topologies, circuits, devices, controls, passives
- Novel PE architectures and mechanisms for CPS
- Power ICs: monolithic, hybrid, and discrete
- High-power and high package-density PE concepts
- Applications of wide-bandgap technologies
- Tethered and untethered power and/or data transfer
- Energy harvesting and self-powering technologies
- Applications of PE for energy and cyber security/surety, e-mobility, e-grid, and sustainability

All manuscripts must be submitted through Manuscript Central at <http://mc.manuscriptcentral.com/jestpe-ieee>. Submissions must be clearly marked “Sustainable Energy through Power-Electronic Innovations in Physical and Cyber Systems, 2020” on the cover page. When uploading your paper, please select your manuscript type “Special Issue.” Refer to <http://www.pels.org> for general information about electronic submission through Manuscript Central. Manuscripts submitted for the special issue will be reviewed separately and will be handled by the guest editorial board noted below.

Deadline for Submission of Manuscript: **November 15, 2019**

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Proposed Timeline:

- July 15, 2019 – Call for Papers to IEEE JESTPE Editorial Office
- November 15, 2019 – Manuscripts Submission Deadline
- May 15, 2020 – Final Acceptance Notification
- July 1, 2020 – Manuscripts Forwarded to IEEE for Publication
- September 15, 2020 – Special Issue Appears in IEEE JESTPE