



Call for Papers

IEEE Journal of Emerging and Selected Topics in Power Electronics

Special Issue on Talkative Power Conversion

Since the beginning of electrification, the fields of power electronics (PE) and communications engineering (COM) have developed largely independently. In recent times, however, increased effort has been on joint information and power transfer (IPT). Examples include power line communication and smart grid/digitalized power systems, wireless IPT in PE applications as well as in sensor networks, and the internet of PE-interfaced energy/resources. One innovative realization of IPT is to modulate the pulse width modulation (PWM)-type switching signal of a power converter, causing an information-carrying ripple. Power/signal dual modulation, dubbed **talkative power conversion** (TPC), extends the application range of power converters significantly. TPC is not just an alternative to power line communication, but is also applicable in wireless and in energy storage systems. The objective of this special issue is to provide an opportunity for the presentation of innovative TPC technologies. We invite original TPC contributions in the fields of wireline, wireless, and networked power electronics-interfaced resources and dominated systems.

Manuscripts should contain PE contents with experimental verifications. Topics of interest include, but are not limited to:

- Advanced switching waveform design for TPC (modulation, coding, spread spectrum, THD analysis)
- Advanced receiver architectures for TPC (demodulation, synchronization, equalization, BER)
- Multipoint communication techniques for TPC (multiple access, routing, networking schemes)
- Filtering approaches through special magnetic materials for optimal power conversion and communication
- TPC-based energy packet dispatching (internet of energy, energy informatics)
- Advanced wired and wireless applications of TPC (power grids, RF & optical comm., battery management)
- Control issues of TPC (advanced control strategies, stability, latency)
- Synchronization issues of TPC (clock/frequency/frame recovery)
- Theoretical bounds on TPC (Shannon theory, multiuser information theory)
- Realization aspects of TPC (testbeds, implementation, standardization)

All submissions should be made through *Manuscript Central* at <http://mc.manuscriptcentral.com/jestpe-ieee>. The cover page should be clearly marked with "Special Issue on Talkative Power Conversion" and the appropriate manuscript type should be selected when uploading the submission. Manuscripts submitted for this special issue will be handled by the guest editorial board outlined below. For more information on special issues and electronic submissions, please go to <http://www.ieee-pels.org/publications/jestpe> and <http://ias.ieee.org/publications/joint-publications/jestpe.html>

Deadline for Submission of Manuscript: 31 August 2023

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Proposed Timeline

- **1 Jun. '23:** Call for papers to IEEE JESTPE Editorial Office
- **31 Aug. '23:** Manuscript submission deadline
- **1 Jan. '24:** Final acceptance notification
- **1 Feb. '24:** Manuscript forwarded to IEEE for publication
- **<DATE>:** Special Issue appears in IEEE JESTPE