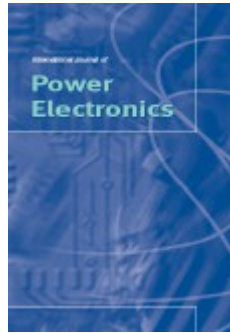# Call for Papers

International Journal of Power Electronics

Special Issue on: "Smart Computational Intelligence-based Intelligent Control of Power Electronics Devices and its Application in Smartgrids"

Guest Editors:
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Power electronics (PE) is a critical enabling technology for efficient power conditioning in a controlled way. Applications of power electronics technology (PET) cover a wide range from few watts to megawatts. In the modern era, PET is undergoing speedy growth, owng to the rapid development of power semiconductors devices and embedded digital control systems and intelligent control action using computational intelligence techniques such as artificial intelligence (AI), fuzzy logic (FL), artificial neural networks (ANN), evolutionary computation, etc.

A few examples of PET applications include wind energy conversation systems (WEC), solar photovoltaics (SPV), LED lighting, energy storage devices, high-efficiency electrical drives, electric vehicles, high-voltage DC transmission, etc. The extensive application of PE converters in distributed energy resources (DER) enables microgrids to control and manage power/energy flows efficiently.

PE converter-based microgrid systems can be classified as AC microgrid (high-frequency or low-frequency), DC microgrid or hybrid AC and DC coupled microgrid. The control and power management of PE-based microgrids cope with a number of issues compared to low-voltage distribution networks without DER units. Therefore, research into the development of smart intelligent control systems is essential to ensure the smooth operation of microgrids.

For this special issue, we invite novel and unpublished submissions proposing and reporting innovative and improved computational techniques and applications in power electronics and smartgrid systems.

Subject Coverage
Suitable topics include, but are not limited, to the following:

- Expert system applications in fault diagnosis and monitoring for AC drives
- Expert system applications in converter design, simulation and optimisation
- Fuzzy logic applications for control, diagnostics, modelling and estimation of power electronic systems
- Fuzzy logic applications to speed up control of DC motors and efficiency optimisation of induction motors
- Fuzzy logic-based control of wind generation system
- Neural network-based control and estimation
- Intelligent optimisation algorithms for DC-DC converter control
- Artificial neural networks in power electronics
- Application of computational intelligence in MPPT control for standalone solar PV systems
- Computational intelligence applications for power management in a hybrid energy storage system
- Intelligent protection using computational intelligence for inverter-based distribution generating systems
- Automatic generation control of microgrids using artificial intelligence techniques
- Application of wind, solar and biomass integration by power electronics converters
- Intelligent control of AC, DC and hybrid microgrids
- Application of computational intelligence techniques for load shedding in smart grid systems
- Computational intelligence technique-based fault detection and fault location in DC microgrids
- Intelligent control of DC microgrids

Notes for Prospective Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. (N.B. Conference papers may only be submitted if the paper has been completely re-written and if appropriate written permissions have been obtained from any copyright holders of the original paper).

All papers are refereed through a peer review process.

All papers *must* be submitted online. To submit a paper, please read our Submitting articles page.

If you have any queries concerning this special issue, please email the Guest Editors

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Important Dates

Manuscripts due by: *31 January, 2020*

Notification to authors: *15 July, 2020*

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