The 46th Annual Conference of the IEEE Industrial Electronics Society

October 18-21, 2020, Marina Bay Sands Expo and Convention Centre Singapore

Special Session on

"Application of Artificial Intelligent in Power Electronic Systems"

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Power electronic systems are complex applications that present a variety of development challenges in the design of industrial drives, power supplies, energy production equipment, consumer goods and more. Since the applications of power electronic systems become more and more complex and diverse, its design requirements become increasingly difficult to the engineer. For instance, if a power converter is designed, its design target may contain many issues, such as efficiency, power density, control performance, system stability, reliability and so on. It is impossible to ask a human to find to most optimized design way only by experience. This special section is dedicated to introducing the artificial intelligent technologies to the power electronic systems' design area, which can provide a smart & optimized way to design the power electronic systems while liberating manpower.

Topics of the Session include, but are not limited to:

- Artificial intelligent application on the control design of power electronics systems, including DC/DC converter, DC/AC inverter, AC/DC rectifier, machine drives and power electronic system.
- Artificial intelligent application on the parameter optimization design for the power converters, including DC/DC converter, DC/AC inverter, AC/DC rectifier and machine drives.
- Artificial intelligent application on the fault detection and diagnosis for the power electronic system, including DC/DC converter, DC/AC inverter, AC/DC rectifier, machine drives and power electronic system.

- Artificial intelligent application on stability and reliability for the power electronic system, including stability assessment, reliability assessment/prediction of the power electronics systems.
- Artificial intelligent application on the smart design of power devices/components, including power devices design, inductor design and capacitor design.