<p style="text-align:center; color:blue">Call for Papers
IEEE Open Journal of Industry Applications
Model Predictive Control of Power Electronic Systems in Industrial Applications</p>

Model predictive control (MPC) is a constrained optimal control technique that can successfully tackle systems with complex, nonlinear dynamics. Moreover, owing to its ability to include explicit constraints in the optimization problem underlying MPC it can operate the system at its physical limits without violating them. The above reasons, combined with the advent of powerful microprocessors that facilitate the real-time implementation of MPC-based algorithms in a manner of microseconds, rendered MPC as a promising control technique for power electronic systems. Over the last decade, several MPC-based algorithms have been implemented in both industry and academia that highlighted the potential of this control technique. It is expected that the ever-increasing interest of the power electronics community in MPC will lead to the development of MPC-based control solutions that will improve key aspects of the power electronic system performance outperforming the established control methods.

This Special Issue is devoted to the latest developments, applications, prospects and associated challenges of MPC in power electronic systems with a focus on industrial applications. Prospective authors are invited to submit original contributions, survey papers, or tutorials, for review for publication in this Special Issue. Topics of interest include, but are not limited to:

- Industrial applications of MPC in power electronic systems, e.g., variable speed drive systems, electric vehicles, railway traction applications, multilevel power converters, etc.
- MPC methods for power electronics used in power generation, power transmission/distribution and end-user applications, e.g., utility-scale power electronics for the grid (FACTS, HVDC systems, UPS, etc.), renewable power generation (photovoltaics, wind turbines), energy storage, power quality conditioners, etc.
- Methods to solve the underlying optimization problems, e.g., MPC with analytical solution, solvers in embedded systems, quadratic programming solvers, integer optimization techniques, branch-and-bound algorithms, etc.
- Implementation aspects with modern control platforms, e.g., digital signal processors (DSP), field-programmable gate array (FPGA), micro-controller unit (MCU), etc.
- Direct and indirect MPC methods (i.e., MPC without and with a modulator)
- Nonlinear MPC for power electronics
- MPC methods with enhanced robustness properties, e.g., MPC with observers, parameter identification algorithms, etc.

All manuscripts must be submitted through Manuscript Central at https://mc.manuscriptcentral.com/oj-ia. Authors should select, during the submission stage, the option "Special Issue on Model Predictive Control of Power Electronic Systems in Industrial Applications". Refer to https://ias.ieee.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.

<p style="text-align:center; color:red">Accepted manuscripts will have their APC waived.</p>

<p style="text-align:center">Deadline for Submission of Manuscripts: 30/06/2021</p>

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