IEEE Transactions on Industrial Informatics
CALL FOR PAPERS
for Special Section on
Condition Monitoring of Industrial Electric Motors and Generators Based on the Flux Analysis

The Theme: The research on flux-based techniques for condition monitoring of electric motors and generators is living a renewed dynamism. Although this approach has been known for years, the progressive cost decrement and spectacular development of the necessary flux sensors, the simplicity and non-invasive nature of the technique as well as the recent application of modern signal processing and artificial intelligence tools for the analysis of such quantity has made it a very interesting option for the diagnosis. Several motor manufacturers have recently incorporated embedded flux sensors in their machines, a fact that proves the significance of the techniques and its potential penetrability in industry. Despite all these advances, there is room for enhancement of the technique, especially with regards to the development of reliable thresholds for determining the severity of different failures, the determination of the optimum position of the sensors or the development of combinative algorithms that merge flux and other techniques, among others. The aim of this special session is to provide a specialized forum for presenting their research advances on flux-based analysis for fault monitoring and diagnosis in rotating electrical machines (including motors and generators) according to the following non limited topics:

- Fault detection and monitoring of rotating electrical machines with stray flux-based techniques.
- New application of signal processing tools for the analysis of flux signals.
- Pattern recognition and artificial intelligence methods applied to flux-based diagnosis.
- Extrapolation of the analysis of flux signals to transient regimes.
- Techniques for flux-based condition monitoring using different types of drives (VSD, soft-starters…).
- Extension to other faults, machines and applications (CNC tools, auxiliary systems…)
- Combinative algorithms between flux analysis and other techniques.
- Development of smart sensors for flux-based condition monitoring and optimization of their location.
- Extrapolation of the flux-based methods for the detection of new failures in motors and generators.
- Case studies on new applications of flux-based methods to industrial rotating electrical machinery.

The results included in the submitted papers that are obtained by simulations must be validated in bounds by experiments or analytical results. Papers including real industrial applications of the aforementioned technologies are especially welcome.

Manuscript Preparation and Submission
Follow the guidelines in "Information for Authors" in **the IEEE- IES website: http://www.ieee-ies.org/pubs/transactions-on-industrial-informatics.** Please submit your manuscript in electronic form through Manuscript Central web site: https://mc.manuscriptcentral.com/tii . On the submitting page #1 in popup menu of manuscript type, select: SS on **Condition Monitoring of Industrial Electric Motors and Generators Based on the Flux Analysis.**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable: **Deadline for manuscript submissions** **September 30, 2020**
Expected publication date (tentative) **March 2021**

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