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A Place for Communication [Editor's Column]

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Editor's Column

by Peter Palensky

A place for communication

The IEEE Industrial Electronics Magazine is hungry for inspiring articles. We are looking for seminal papers, that present and explain the latest advances in a knowledge field covered by the Industrial Electronics Society. Typically, experienced, senior experts – or teams of experts – are capable of writing such articles, but sometimes also talented young authors are selected. Yes, the magazine is selective, but if you keep in mind the type of article that we are looking for, you should have good chances for publications. I am scouting in journals and on conferences for talented writers. Please approach me if you believe you are destined to produce content that is educative, inspiring, entertaining, or provoking. The magazine serves as a platform for communication within our community and to the outside. Use it!

As an editor I naturally try to monitor the success and the acceptance of our publications. One of the instruments for that are the various journal ranking indices. Professionals know that one index alone does not tell much and only a portfolio of very orthogonal and diverse indices can give you a relatively reliable impression on the popularity and on the impact of your publication. Some of the more famous indices are published in Clarivate's annual Journal Citation Report, typically published in June. This year's report showed – again – very rewarding figures for the IEEE Industrial Electronics Magazine. The Journal Impact Factor for instance grew to 13.241, ranking second among all IEEE publications! Despite our very limited number of feature articles per year, we receive a very large number of citations, which is part of the explanation. Responsible for this success are our authors, dedicating hard work to write articles that explain complex mechanisms in a way that they can be picked up and transformed into innovation. I also have to thank the exceptional team of associate editors of this magazine, who manage the tedious process of reviewing the submitted article in order to get the best of them published. And, without our reviewers, all that would not be possible at all. A great thanks to them, especially those who deliver quality reviews, with good hints and remarks on how to improve the papers.

The future energy system, its usage and its components is the topic of our main feature articles in this issue. The first article, "Application of Statistical Model Checking Methods to Finite-Set-MPC Controlled Converters" by Mateja Novak et al brings a method proven in other sectors, such as automotive or communications, to the power electronics field: statistical model checking. By that, converters can be checked against stochastic operational conditions. Grid conditions, such as loading or renewable generation, are inherently stochastic and therefore lead to complex and tedious test requirements or standards. Using this innovative method we are can assess the limits and performance of power electronic converters in such stochastic situations.

"Reinforcement Learning for (P)HEV Energy Management: Recent Advances and Prospects" by Xiaosong Hu et al combines on of the hot research topics currently – deep learning – with one of the hottest application areas of industrial electronics – electric mobility. The article explains how smart on-board energy management can improve efficiency and by that range and environmental impact of plug-in hybrid vehicles. A number of different reinforcement learning algorithms is analyzed and checked for its applicability – their advantages and their disadvantages - in electric vehicle energy

management. We hope that this article serves as inspiration for many other professionals that are working on electric vehicle energy management.

The reliability of another promising technology that will enhance our power system components in the future is covered in the last paper. "An enhanced model for reliability prediction of supercapacitors lifetime" by Blaž Radej et al shows how the forecast the lifetime of supercaps being influenced by environmental and operational parameters such as voltage or temperature. Supercaps will – together with other types of storage – play an important role in a power system that has less and less inertia. As most other components in the power system a show life expectancy of several decades, it is important to get clarity on the lifetime of all new technologies as well.