We're Growing [Editor's Column]

Palensky, Peter

DOI
10.1109/MIE.2019.2945347

Publication date
2019

Document Version
Final published version

Published in
IEEE Industrial Electronics Magazine

by Peter Palensky

We're Growing

As you may have realized, this issue is an extended one. We decided to increase the number of feature articles that are published in *IEEE Industrial Electronics Magazine*. The goal is to provide faster publication times to our authors and share the growing number of exciting innovations in industrial electronics (IE) to our readership. Ten feature articles are included in this issue—in the future it will be an average of five—and they show the extensive variety in IE application areas and where experts are currently innovating.

In This Issue

One fascinating application area is discussed in "Industrial Electronics for Biomedicine," by Óscar Lucía et al. Cancer can hit you any time, regardless of your age. New treatment methods are always welcome, and IE delivers one that has received plenty of attention. Engineers and medical practitioners teamed up to develop an alternative cancer treatment based on short, but intensive, electric field pulses.

Wireless power is the topic of the second article, "A Unique Military Application of Wireless Power Transfer," by M. Abul Masrur and Michael Cox. It discusses the principles of wireless power transfer and shows several applications in the defense area. The unique constraints and requirements of military applications often make a good use case for wireless power transfer, but all presented technology can and will make its way into civil use.

"Software-Defined Wireless Communication for Industrial Control," by Henrik Hellström et al., stays with the wireless topic, but it covers wireless data rather than wireless power. The promise of easier and more flexible wiring stands against the hard requirements in industrial settings that sometimes cannot be satisfied with standard wireless technologies. The article shows a software-defined, radio-based approach for creating a robust wireless industrial control network.

WE DECIDED TO INCREASE THE NUMBER OF FEATURE ARTICLES THAT ARE PUBLISHED IN *IEEE INDUSTRIAL ELECTRONICS MAGAZINE*.

"Real-Time Monitoring and Control of Industrial Cyberphysical Systems," by Shen Yin et al., continues with industrial control systems and focuses on real-time monitoring. Data-driven methods, inspired by the booming big data and artificial intelligence activities, will enhance monitoring applications in industrial environments.

"Industrial Edge Computing," by Wenbin Dai et al., is another article about industrial control and computing. In this case, the authors discuss edge computing and how it can be used for industrial applications.

"Smart Transducers in Distributed and Model-Driven Control Applications," by Hans-Peter Bernhard et al., explains intelligent sensors and actuators that have standardized interfaces and self-explanatory data sheets that are combined in this article with a modeling language to improve the automation system design process.

"The Rebirth of the Current Source Inverter," by Vincenzo Madonna et al., addresses a classical topic of this magazine: power electronic inverters. The advantages of current source inverters for aerospace motors are discussed, and this article serves as a stimulus to the research community.

The remaining three articles are in the power and energy area. "Partial Discharge Detection and Localization," by Hamd Mohamed et al., uses a wireless sensor network to detect and localize partial discharge, a phenomenon that needs early identification to avoid damage. "Standard Test Systems for Modern Power System Analysis," by Saeed Peyghami et al., gives a great overview on test systems for power systems, based on impressive research of 2,500 articles (we spared you the corresponding reference list, but it does exist!) "Blockchain Technologies for Smart Energy Systems," by Naveed Ul Hassan et al., finally closes the loop from power systems back to computational electronics.

This one-time burst of articles shows the bandwidth of the IEEE Industrial Electronics Society and provides great examples of how IE contributes to a better future. I am confident that the increased output of the magazine is in the interest of both the readers and authors.

Digital Object Identifier 10.1109/MIE.2019.2945347
Date of current version: 23 December 2019