Industrial Electronics Is Ubiquitous [Editor's Column]

Palensky, Peter

DOI
10.1109/MIE.2020.3032045

Publication date
2020

Document Version
Final published version

Published in
IEEE Industrial Electronics Magazine

by Peter Palensky

Industrial Electronics Is Ubiquitous

This issue is the last one for 2020, a year that many of us might remember as the lockdown year, video conferencing year, or face mask year. But life goes on in parallel, and so does innovation in industrial electronics. The lockdowns hit some labs and companies hard, and we even saw this in the lower submission numbers for journals, where experimental validation—and, thus, access to the labs—is compulsory. But let's stay optimistic. Up to now, there was sunshine after every rain. The first bit of good news is, starting in 2021, *IEEE Industrial Electronics Magazine* will feature early access for its articles. This will result in the rapid availability of our content to our readers and earlier exposure for our authors.

In this issue, we feature 12 articles that again show the fantastic width and broad application areas of our field. Several of them are in the power and energy field. We address the question that virtually everyone of us has asked or has been asked recently with the article "Can Electric Vehicles Meet Highway-Trip Requirements?" Sure, batteries grow in size and get cheaper over time, but they still have a hard time competing with the energy density of carbon hydrate fuels. The article presents an alternative testing principle that tries to more accurately imitate the real-world requirements of electric vehicle usage.

SURE, BATTERIES GROW IN SIZE AND GET CHEAPER OVER TIME, BUT THEY STILL HAVE A HARD TIME COMPETING WITH THE ENERGY DENSITY OF CARBON HYDRATE FUELS.

Storage is also covered in the articles "Next-Generation Battery Management Systems" and "Utility-Scale Energy Storage Systems." Via "Developing More Efficient Wind Turbines" and "On the Stability of the Power Electronics-Dominated Grid," we come to disruptive topics for nearly every sector. The articles "Deep Learning Detection of Inaccurate Smart Electricity Meters" and "Convergence and Interoperability for the Energy Internet" discuss the impact of artificial intelligence and ubiquitous networking on the power system. Enabling technologies for that are covered by "Power Electronics and Drives" and "Single-Transmitter Multiple-Pickup Wireless Power Transfer." The three remaining contributions are "Private 5G," "Toward the Plug-and-Produce Capability for Industry 4.0," and "Condition Monitoring of Industrial Electric Machines."

This great collection of articles shows that we can find industrial electronics everywhere. Transport, energy, and machines all benefit from smart and powerful industrial electronics. I hope that this issue provides you with inspiration and information. Stay tuned during these interesting times.

Digital Object Identifier 10.1109/MIE.2020.3032045
Date of current version: 22 December 2020