

Foreword about Associate Professor Luciano Belandria, Associate Professor at the Department of Electronic Engineering, National Experimental University of Táchira (UNET), Venezuela:

Luciano Belandria was born in Mérida, Venezuela, in 1969. He graduated in Electrical Engineering from the Faculty of Engineering of the Universidad de Los Andes (ULA), Mérida, in 1995. He received his Master's Degree in Electronic Engineering from the Antonio Jose de Sucre National Experimental Polytechnic University (UNEXPO), Barquisimeto, Venezuela. The Ph.D. degree in Electrical Engineering at the Polytechnic University of Catalonia (UPC), Barcelona, Spain, in 2015. Since 1995 he was part of the Mérida Technology Park Corporation, where he was responsible for the Electronics Laboratory, research and development activities in that laboratory were mainly oriented towards electronic instrumentation and control of electrical machines. He then worked on projects in the area of Electricity and Industrial Instrumentation for the Venezuelan oil industry. Since 2000 he is a professor and researcher at the National Experimental University of Táchira (UNET), in Venezuela, where he is currently a full-time Associate Professor at the Electricity nucleus of the Department of Electronic Engineering. He is coordinator and professor of the Master of Electronic Engineering of the Deanship of Postgraduate Studies, UNET. In addition, at UNET, he is a researcher and co-founder of the Automatic Instrumentation and Control Laboratory (LICA), of the Deanship of Research. He is a visiting professor to teach the courses "Control and Synchronization of Distributed Generation Systems" and "Control of Electric Motors", in the Specialization in Power Electrical Systems, of the School of Electrical Engineering of the Central University of Venezuela (UCV).



Luciano Belandria

His research and development topics include Modeling and control of electrical machines, control of distributed power systems, power conversion, Digital DSPs Signal Processors in the control of Electrical Systems, Methods of synchronization of converters with the electrical grid, alternative sources of generation.

Dear readers,

It is a great honor and a privilege for me to address you with a few words in this magazine at the beginning of 2021. My professional career has been and is associated with the technologies related to Electric machines and Power generation systems, from alternative non-polluting sources.

Today, electrical machines are increasingly used, both as generators and motors in electrical industrial drives, due to their simplicity, robustness, low maintenance, higher Torque / Ampere ratio, etc. One of the limited areas until a few years ago was the application of alternating current electrical machines in drives that require speed variation, mainly due to the impossibility of obtaining sources of alternating current of variable frequencies. Today, this problem has been overcome with the application of mathematical models and power electronics, generating possibilities of obtaining three-phase sources of voltage and variable frequencies. These sources solved the frequency variation problem, but the control systems are still very complex and present some problems that power electronics bring with them: harmonics, low power factor, loss of torque, etc. These problems with the passage of time have been improved, recently they have presented and will continue to present great advances, thanks to all the researchers who fight and study this fascinating area of Electrical Engineering.

Distributed Power Generation Systems (DPGSs) based on renewable energy sources are experiencing great development worldwide. In recent years, in many countries, issues such as the conservation of natural resources, protection of the environment and sustainability, have reached great importance. An area with great environmental problems is the generation of energy and there are many efforts that must be promoted in order to articulate a more hopeful future, in this sense, one of the most significant achievements is the development of new attitudes regarding rational use of energy and policies that promote the use of renewable energies to the maximum, also called green or clean energies, such as wind, solar, hydroelectric and biomass, which reduce the emissions of gases that cause global warming.

Due to the increasing number of DPGSs connected to the utility grid, new and more stringent standards have to be investigated in regards to power quality, safe operation and protection. As a consequence, the control of DPGSs must also be improved to meet network interconnection requirements. Increasing day-to-day demand for energy can create problems for energy distributors, such as grid instability and even outages. The need to produce more energy combined with the interest in clean technologies produces an increase in the development of energy distribution systems using renewable energies. Distributed Generation (DG) emerges as an important alternative for the provision of electric power service, since it can increase the reliability and security of the supply in the short, medium and long term.

I would like to express my respect and admiration to the Advances in Electrical and Electronic Engineering, AEEE team, for the work they do. Because of this, AEEE magazine is already recognized in electrical and electronic engineering and related fields. The AEEE appears on the lists of the most reputable scientific journals and its continuous increase in level and importance is demonstrated, among other things, by the increasing number of citation databases that include the journal in their field of view. I believe that the hard work, the time of dedication, the perseverance, the faith and the enthusiasm that the editorial team has put in, have been enough to achieve this goal. I wish AEEE magazine, continue to publish a large number of high-quality articles and reviews in the future.

I say to the esteemed readers and researchers who have not yet published, to be encouraged to do so at AEEE, so that they can increasingly get involved in the world of engineering, knowledge, research and their own satisfaction, and spread the word and exchange knowledge in various fields of scientific research with great potential for application.

And to the authors who have already done so, I thank you for the publications written in this issue, as well as the permanent admiration for your work and the excellent results we achieved. I wish that we all continue with this effort and have had a vision of the benefits of our work for all of society in this beginning of 2021.

Last but not least, I would like to take this opportunity to thank the team of people responsible for AEEE magazine. Otherwise, I would not be able to share my ideas and thoughts on the magazine.