The ever-increasing need for higher efficiency, smaller size, and lower cost make the analysis, understanding, and design of industrial equipment extremely important, interesting, and even imperative. One of the most neglected features in the study of such systems is the effect of the inherent nonlinearities on the stability of the devices. Due to these nonlinearities, these devices may exhibit undesirable and complex dynamics, which are the focus of many researchers. Even though a lot of research has taken place in this area during the last 20 years, it is still an active research topic to the mainstream industry engineers. Furthermore, the detailed study of these systems can help in the design of smaller, lighter, and less expensive industrial equipment that are particularly important in emerging areas of research like electric vehicles, smart grids, biomedical engineering, renewable energy sources, and others.

The aim of this Special Issue is to cover control and nonlinear aspects of instabilities in switching converters: theoretical, analysis modelling, and practical solutions for such emerging applications. In this Special Issue, we wish to solicit novel research work in the area of control and nonlinear dynamics on energy conversion systems which will be of highly interest to both academics and industrialists, but not limited to:

- Biomedical engineering and biological systems
- Theories in dynamical systems
- Fuzzy logic control
- Time-delayed nonlinear dynamical systems
- Optimization, and control
- Parallel computations and software development
- Nonlinear vibrations and oscillations
- Fault diagnosis based on vibration signal analysis
- Chaotic systems and Circuits
- Reliability and fault tolerance, safety critical operation
TENTATIVE SCHEDULE

To attract high-quality papers for our proposed special issue, in addition to the public dissemination of the Call for Papers (CFP), we will adopt the following steps:

- We will disseminate the CFP aggressively through the professional circles of the GEs. With the diverse affiliations of the guest editors spanning multiple countries, we are in a good position to disseminate the CFP to a wide audience. We will announce the Special Session on the GEs’ personal websites, and on their individual LinkedIn profiles, to promote the visibility and attract the attention from the research community and organizations.
- The guest editors are involved in both program and organization committees of several top ranked conferences including GLOBECOM, ICC, CCNC, and ICCCN, in which they are also chairing a number of specialized workshops in the area of mobile networking. High-quality papers may be invited to submit an extended version for publication in this Special Issue.
- Based on our previous experiences, the geographical diversity of our team puts us in a very comfortable position to attract submissions from various well-known researchers from all the continents.
- Finally, we will share our CFP with the well-known and highly ranked authors within the scope of the topic and the larger networking community. The GEs will make contacts with prominent researchers in the specialized field, who have been supportive of the proposed special issues; these researchers will be personally contacted to consider submitting their papers for possible inclusion in our proposed Special Issue.

POTENTIAL SOURCE OF HIGH-QUALITY PAPERS

- Nonlinear Dynamics Applications in Industries or other engineering sections
- Role of AI, Machine Learning, IoT/Fog/WSN and other emerging technologies

TENTATIVE SCHEDULE

Paper submission due: **December 15, 2021**

First-round review notification: **January 15, 2022**

Revision submission: **March 15, 2022**

Submission of final paper: **March 25, 2022**

For more details contact corresponding Guest Editor or Managing Editor.