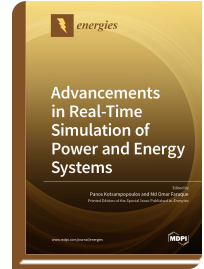*Special Issue Reprint*

Advancements in Real-Time Simulation of Power and Energy Systems

www.mdpi.com/books/reprint/3741

Edited by
Panos Kotsampopoulos
Omar Faruque

Modern power and energy systems are characterized by the wide integration of distributed generation, storage and electric vehicles, adoption of ICT solutions, and interconnection of different energy carriers and consumer engagement, posing new challenges and creating new opportunities. Advanced testing and validation methods are needed to efficiently validate power equipment and controls in the contemporary complex environment and support the transition to a cleaner and sustainable energy system. Real-time hardware-in-the-loop (HIL) simulation has proven to be an effective method for validating and de-risking power system equipment in highly realistic, flexible, and repeatable conditions. Controller hardware-in-the-loop (CHIL) and power hardware-in-the-loop (PHIL) are the two main HIL simulation methods used in industry and academia that contribute to system-level testing enhancement by exploiting the flexibility of digital simulations in testing actual controllers and power equipment. This book addresses recent advances in real-time HIL simulation in several domains (also in new and promising areas), including technique improvements to promote its wider use. It is composed of 14 papers dealing with advances in HIL testing of power electronic converters, power system protection, modeling for real-time digital simulation, co-simulation, geographically distributed HIL, and multiphysics HIL, among other topics.

Order Your Print Copy
You can order print copies at
www.mdpi.com/books/reprint/3741

MDPI

MDPI‖Books
Publishing Open Access Books & Series

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.

Open Access
Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.

Author Focus
Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.

High Quality & Rapid Publication
MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.

High Visibility
Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).

Print on Demand and Multiple Formats
MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.

Learn more ▶ mdpi.com/books