This book is concerned with understanding and modelling grid-connection and fault ride-through capability in the context of electricity generated from wind turbines. It is very timely due to the rapid incorporation of wind power into power systems across the globe; meeting the challenge of maintaining reliable operation of those systems while using a new electricity source, is essential.

Electrical power supply technology is well known, and is based on the generation and controllability of conventional power plants and their synchronous generators. Such conventional power plants provide power-frequency and voltage control. This well-known power supply technology is giving way to the less well understood technology of electrical power supply from the wind.

This book focusses on the development of dynamic models of different wind turbine concepts and the understanding of the interaction between wind turbines and transmission power grids. As about 85% of the wind turbine market comprises wind turbines equipped with either fixed-speed or variable-speed converter-controlled induction generators, this book concentrates on induction generator-based wind turbines. As the power rating of wind turbines rapidly increases and power electronics converters become commonplace in generator control, this book presents details about power electronics converters' modelling with regard to short term voltage stability, control, protection and fault ride-through capability.

This book is primarily appropriate for:
- postgraduates and academics interested in electrical power supply and grid connection of wind turbines;
- electrical power engineers working on the grid connection of windfarms and modelling of wind turbines;
- electrical power companies and transmission systems operators technical and research departments;
- wind turbines manufacturers

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Vladislav Akhmatov was born in Russia in 1969. He obtained his Ph D from the Technical University of Denmark in 2003. From 2003 to 2007 he worked for Eltra/Energinet, the transmission system operator of Denmark. Presently he works for Siemens Wind Power in Denmark. In 2002 he was awarded the Angelo’s Award and, in 2006, received the Electro Award (Elektroprisen) of the Danish Engineers’ Society for his work with grid-integration of wind power in Denmark.
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References

See Also

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see a free specimen copy at www.ingentaconnect.com/content/mscp/wind as well as tables of contents and abstracts, all issues back to year 2000.