

TALLINN UNIVERSITY OF TECHNOLOGY
School of Engineering, Department of Electrical Power Engineering and
Mechatronics

**This dissertation was accepted for the defence of the degree of Doctor of
Philosophy in Power Engineering and Geotechnology on February 1, 2017**

Supervisors: Senior Research Scientist, Argo Rosin, Dr.Sc.Eng.,
Department of Electrical Power Engineering and
Mechatronics,
Tallinn University of Technology

Opponents: Auxiliary Professor, João Martins, Ph.D.,
Department of Electrical Engineering,
Faculty of Sciences and Technology,
Universidade Nova de Lisboa, Portugal

Associate Professor Anna Mutule, Dr.sc.ing.,
Institute of Power Engineering,
Faculty of Power and Electrical Engineering,
Riga Technical University, Latvia

Defense of the thesis: March 28, 2017

Declaration:

*Hereby I declare that this doctoral thesis, my original investigation and
achievement, submitted for the doctoral degree at Tallinn University of
Technology, has not been submitted for any academic degree.*

Denis Lebedev.....



Copyright: Denis Lebedev, 2017
ISSN 1406-474X
ISBN 978-9949-83-080-0 (publication)
ISBN 978-9949-83-081-7 (PDF)