



Hochschule
Zittau/Görlitz
UNIVERSITY OF APPLIED SCIENCES

Hochschule Zittau/Görlitz · 02754 Zittau · PF 1454

Master Thesis Review

Name Jan Krofta

Task Development of simulation models in energy technology

Form and technical Content of the master thesis Mr. Krofta wrote his master's thesis at the Institute of Process Technology, Process Automation and Measurement (IPM) at the Zittau/Görlitz University of Applied Sciences. The work deals with the development of numerical simulation models for thermal energy storage. It specifically involves the development of simulation models for phase change heat storage. For this purpose, a simple model and a more complex finite difference model were designed and tested with MATLAB.

The first and the second chapter deal with the introduction to the problem and the definition of a thermodynamic system.

In the third chapter he performed a literature research on numerical models for thermal energy storage, in particular, for phase change heat storage models.

In the fourth chapter, Mr. Krofta deals with the implementation of the selected models of "Shamsundar" into MATLAB. Finally he presents the simulation results. The model is analyzed for weaknesses. Mr. Krofta comes to the conclusion that the model of "Shamsundar" has too many simplifications and a more accurate model is needed. He has selected the finite difference method for the new model and implemented it into Matlab. At the end, the results for discharging and charging are presented.

Chapter five includes a short summary and recommendations for further studies.

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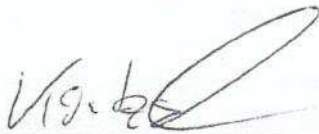
www.ipm.hszg.de



The master thesis of Mr. Krofta has a logical structure and meets the requirements for the form of a scientific paper. Mr. Krofta has been working absolutely independently. Characterized by high complexity, the model implementations into MATLAB are an excellent aspect of his work.

Rating proposal for 1.7
thesis (university)

Rating proposal for 1,7
thesis (company)



Prof. Dr.-Ing. A. Kratzsch

University of Applied Sciences Zittau/Goerlitz
Institut of Process Technology, Process Automation and Measuring Technology (IPM)
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Zittau/Görlitz

TRANSCRIPT OF RECORDS



ECTS - EUROPEAN CREDIT TRANSFER SYSTEM

Institution

Hochschule Zittau/Görlitz – University of Applied Sciences

Student

Name:	Krofta	First name:	Jan
Date and place of birth:	6 October 1988 in Prag	Sex:	male
Period of study:	27 September 2012 to 28 November 2013	Student ID:	204904
Major field of study:	Mechatronics International		

<u>Course Code</u>	<u>Course Title</u>	<u>ECTS Credits</u>	<u>Local Grade</u>
1700 101380	Automatic Control II (advanced course)	5	3,8
1800 101580	Digital Signal Processing	5	2,0
1900 102180	Artificial Intelligence/Neural Networks	5	1,3
2000 103820	Digital Communication Technology	5	3,0
2200 138250	Optional Module/International Project Mechatronic <i>Utilization of Water and Wind Energy</i> <i>International Project</i>	5	1,5
3100 102910	Image Processing	5	1,0
Master's Thesis and Defense <i>Development of simulation models in energy technology</i>		30	1,7

ECTS Credits: 60

1	(1,0 - 1,5)	excellent/very good	outstanding performance with only minor errors
2	(1,6 - 2,5)	good	above the average standard but with some errors
3	(2,6 - 3,5)	satisfactory	fair but with a number of notable errors
4	(3,6 - 4,0)	sufficient	performance meets the minimum criteria
5	(from 4,1)	fail	considerable further work is required

Explanation ECTS criteria: