

MASTER THESIS 2024

Model based EMC

MSc project proposal

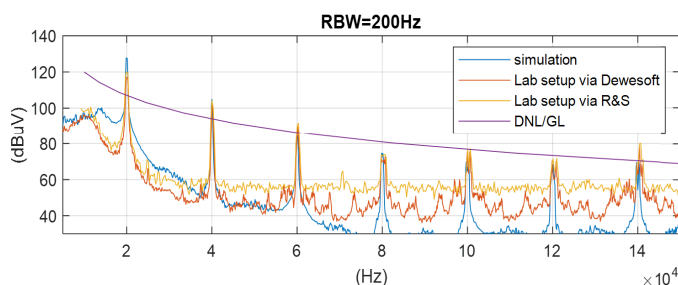
ABOUT US

Comsys, a forefront cleantech company, is dedicated to "Perfecting Power." We focus on enhancing power quality across AC and DC supplies. As the world pivots towards renewable energy, ensuring a resilient electric grid has never been more important. Master theses at Comsys play a important role in our research and product development. We offer you a chance to dig into these challenges, combining your passion for the environment with real physical innovations. Join us in shaping the next phase of power efficiency.

BACKGROUND - MODEL BASED EMC

The project is about modeling IGBT-based 2-level voltage source inverters and its associated filter components. -From an EMC perspective.

To model an inverters basic behavior is rather straight forward. However, to achieve a model that behaves correctly in frequencies ranging from 150kHz up to a few MHz is a bit more demanding. The work covers understanding high frequency behaviors of semiconductors and passive components, as well as working in a close combination of simulations and lab measurements.



From Comsys side you will be supported with basic simulation models, lab systems and tools for measurement and comparison of results. You will also have supportive colleagues nearby. The simulations will be performed in Matlab/Simulink.

GOAL

- ➔ To develop knowledge and methods in performing EMC-related work, regarding IGBT-based voltage source inverters, in a simulated environment.
- ➔ The goal is to correctly model a typical inverter/filter system up to a few Mhz.

WHO ARE YOU?

For this thesis proposal we target students with a strong interest in power electronics and/or EMC.

We prefer students to conduct the thesis work in pairs - it helps to be able to discuss approaches and solutions during the work.

TARGET START DATE

HT 24

For more information / **APPLY**



Nils Lundström M.Sc. ee
Power Electronic System Design

nilslundstrom@comsys.se
073 650 67 90



Mats Alakula Professor,
Industrial Electrical Engineering

mats.alakula@iea.lth.se
070 558 92 84



Website
www.comsys.se



Connect with us on LinkedIn
www.linkedin.com/company/comsys-ab



Get behind the scenes on Insta
[comsys_ab](https://www.instagram.com/comsys_ab)