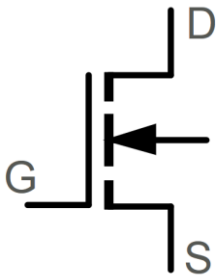
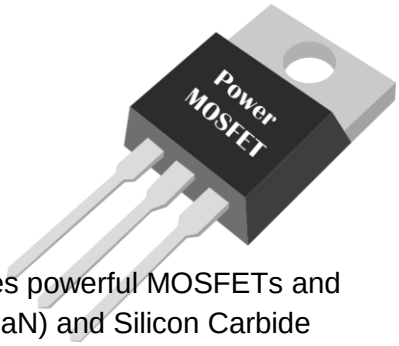
Technische Universität Graz
Institut für Elektronik

Bachelor Thesis

Power MOSFETs and the Maturity of Their Simulation Models



Reduce Time to Market for Prototypes



Current Status and Motivation

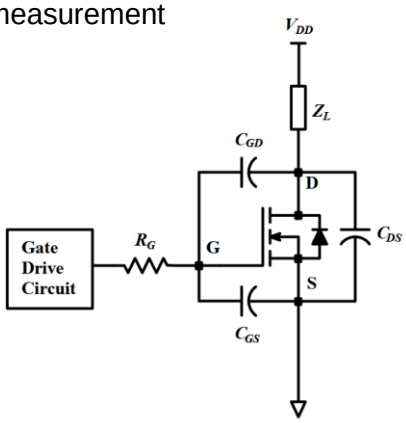
As a main part in electro-mobility and the charging of electric vehicles powerful MOSFETs and diodes are used, especially new technologies like Gallium Nitride (GaN) and Silicon Carbide (SiC). Right now, the manufacturer's models of these diodes and transistors cover well the functionality simulations, but to a way lesser extent they are usable for Electromagnetic Compatibility (EMC) simulations. The actual situation should be investigated.

Research Topics and Issues to be solved

The goal of the thesis is to investigate the availability of Power MOSFETs and diodes with good and mature models. A crosscheck has to be done between simulation and measurement and the model maturity has to be rated.

Approach/Methodology

- Literature study on actual power MOSFETs and diodes
- Check out the availability of these power devices and their models
- Design printed circuit boards (PCBs) and test setups for measurement
- Simulate and measure the devices and do a comparison



Organizational

- Starting date: anytime from now on
- Workplace: IFE
- Write Bachelor thesis and final presentation at the institute

Information and Mentor:

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