SiC based power electronics for railway applications

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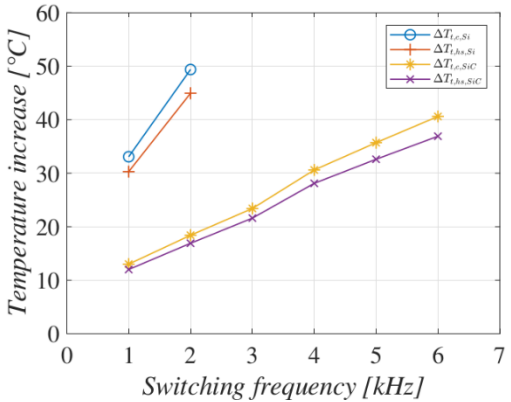
Objectives

- Study how to utilize the new and energy efficient power semiconductor material silicon carbide (SiC) in propulsion systems for electrical railway traction.
- Improve the overall propulsion system by studying inverter design and potential over-voltages on the motor terminal. Utilize the characteristics of SiC to achieve benefits on a propulsion system level.



Selected publications

- M. Lindahl, T. Trostén, D. Jansson, M. Johansson, E. Velander, A. Blomberg, H.-P. Nee, “Field Test of a Silicon Carbide Metro Propulsion System with Reduced Losses and Acoustic Noise”, IET Electrical Systems in Transportation, in press.
- M. Lindahl, E. Velander, A. Blomberg and H.-P. Nee, "Threshold for Induction Motor Terminal Transient Peak Voltage with Fast Switching Inverters," 2019 21st European Conference on Power Electronics and Applications (EPE '19 ECCE Europe), Genova, Italy, 2019, pp. P.1-P.6, doi: 10.23919/EPE.2019.8914765.