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**Abstract – 100 kW SiC Inverter for EV Traction Drive**

The methodology for overall system level design of a high-power density EV/HEV traction drive using commercially available off-the-shelf wide bandgap semiconductor devices and other components. The drive serves as a platform for demonstration and continued development for EV inverters exploiting the advantages of wide bandgap semiconductor devices. The planar architecture used ensures proper electrical, thermal, and mechanical performances. The EV inverter is composed of a boosted topology with a front-end bi-directional interleaved DC-DC converter and a three-phase voltage source inverter (VSI). This holistic design approach results in a highly compact EV/HEV inverter with power density of 12.1 kW/L which is of lower volume and weight compared to the commercially available state-of-the-art power converter systems. The system efficiency has also been tested to be 98%. The talk will outline the design philosophy, the technical issues faced, and the proposed solutions for the next generation of higher power EV inverters.