

Project Title: Modular Hybrid SiC and Si based Battery Inverter for Energy Storage Integration

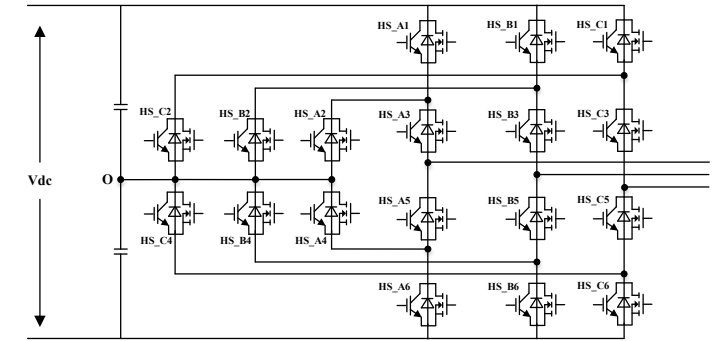
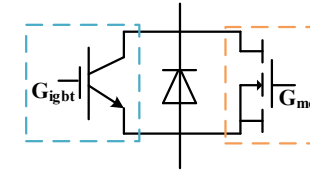
Objectives: Develop a high efficiency, high density hybrid SiC and Si based 1500V A-NPC inverter for low cost and efficient integration of energy storage.

Task No. BP5-4.39

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WBG Technology Impact

1. Combines the advantages of the two types of devices and introduces SiC benefits to the 1500 V battery inverter at significantly lower cost.
2. Higher efficiency (99% CEC) and higher power density (25 W/in³, 3X of current product power density), reduced levelized cost of electricity (LCOE) for energy storage integration
3. Application sector: renewable energy and energy storage integration
4. Timeframe for commercialization: 2- 3 years

Additional impacts

1. Enable the efficient and cost effective integration of energy storage to provide enhanced grid service and reduce solar intermittence.
2. Manufacture of WBG based power converters products in Charlotte, NC.
3. Education and training for undergraduate and graduate students towards next generation WBG based power electronics.
4. Improve U.S. competitiveness on renewable and energy storage integration technologies.