

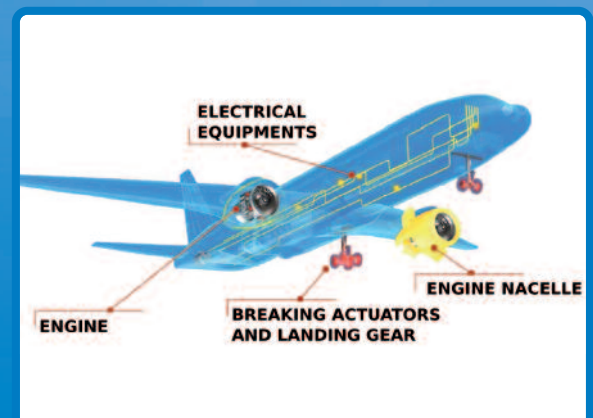
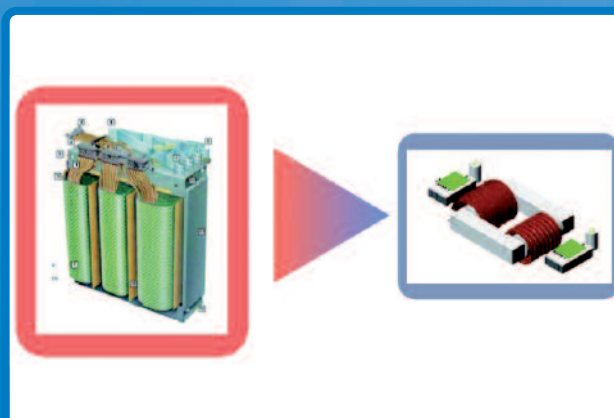
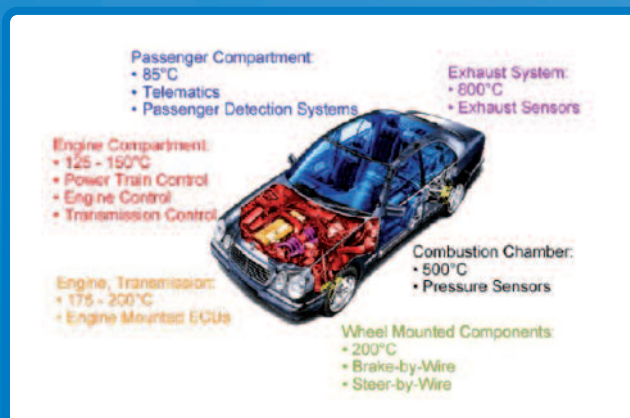
"SiC devices for more efficient power management"

HIGH TEMPERATURE POWER ELECTRONICS DEMONSTRATION : 300°C 1KW AC-MOTOR SiC DRIVER

Silicon Carbide (SiC) is an emerging technology opening new solutions for Energy Gain and Savings in Drives and Generator Systems applications. Major commercial application of SiC devices are high-density power conversion systems. As dynamic behaviour of SiC devices helps to reduce losses at elevated switching frequency both systems complexity and cost can be reduced using such advanced devices. SiC emerging technology, applied to power electronic devices brings another revolutionary change in system performance and efficiency.

SiC material physical properties gives hope for high power density application (high voltage, high power and high temperature), with possibilities to redefine converter topologies and to push forward actual limits.

Depending on the application, efficiency gain may be located at various levels. Figures illustrates applications of this novel, almost ideal and challenging components and foresable benefits.



DREAM OR REALITY : 300°C 1KW AC-MOTOR SiC DRIVER DEMONSTRATION

Ampere laboratory Power Electronics and Integration team is working since 1980's on SiC devices conception fabrication characterization and applications. The present demonstrator, « a 300°C 1kW AC-motor SiC driver » illustrates SiC High Temperature operation.

