

# **Power Electronics for More Electric and Hybrid Electric Aircrafts**

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In order to improve the fuel economy and emissions, the aerospace industry is transitioning towards “more electric” architectures and hybrid propulsion systems to achieve lower fuel consumption, reduced emissions, reduced maintenance, and possibly lower costs. The intent is to move as many aircraft loads as possible to electrical power, resulting in simpler aircraft systems. Electric-powered environment control systems (ECS), electrical actuators, electric de-icing, etc. are some examples of aircraft systems under consideration. Electric starting of the engine and the conversion of all the pneumatic and hydraulic units on the accessory gearbox (AGB) to an electric system are also being investigated. The hybrid propulsion similar to hybrid vehicles is also being increasingly considered even for larger aircrafts. For both More Electric and Hybrid Electric Aircrafts, power electronics is the enabling technology. This presentation examines the current trends in technologies of more electric aircraft and hybrid electric aircraft. The power electronics systems for power generation, distribution, and for hybrid electric propulsion will be discussed. The synergies between the electrical systems for electric/hybrid vehicles and more electric aircrafts systems will also be presented. The future strategies including the power electronics for propulsion for flying cars will be presented.