

Fuel Cells for Dismounted Soldier Use

T. Thampan, D. Shah, C. Cook, S. Shah

Communications-Electronics Research, Development, and Engineering Center (CERDEC) has been developing fuel cell power sources for the US military, including dismounted soldier use. A number of fuel cell products have been developed for dismounted use, and the performance of these systems are discussed. Significant advancements in power density, energy density and reliability have been made, resulting in increased relevance to end users. Significant success has been obtained with chemical hydride systems resulting in high power density (29W/kg, 32W/l,) and high energy density (386 WH/kg, 429WH/L, for a 480WH mission). This system offers advantages over incumbent solutions and is being prepared for soldier trials. This technology, as well as other fuel cell technologies developed for dismounted soldier user will be discussed, including laboratory test results, mission requirements and soldier feedback on the technology. Based on previous fielded fuel cell product experience, future developmental plans have been prepared, and will also be presented and discussed.