

Title:	Power Electronics In New Age Military And Defence Technologies
--------	--

**Authors:** Michael L. Barrett & M. H. Rashid  
 Department of Electrical and Computer Engineering  
 University of West Florida  
 Pensacola, Florida 32514, USA  
[mlb72@students.uwf.edu](mailto:mlb72@students.uwf.edu), [mrashid@uwf.edu](mailto:mrashid@uwf.edu)

**Abstract**

The events of 9/11 and, more recently, the bombings in Boston, Massachusetts, along with the global threat posed by rogue nations such as North Korea and other countries that have at least some nuclear capabilities, have reaffirmed the need for a strong nation defense that utilizes the latest technology to provide global stability. As these rogue nations become more and more technologically sophisticated, it is important for allied nations around the globe to invest in new power electronic technologies and advancements in the face of a growing threat of a nuclear confrontation that has become seemingly imminent. It is also necessary find new ways to confront an enemy that will rely more upon guerrilla style tactics. This provides a special challenge for engineers in the defense industry. This paper will focus on the use of power electronics in the defence industry and the innovations in new technology as a consequence of their need as it pertains to national defense.

**Keywords:** GPS, DC-DC convertors, DC-AC convertors, digital radio frequency memory (DRFM), frequency stability, boost regulators, MOSFET, insulated gate bipolar transistors (IGBT), DARPA