

Abstract Submitted  
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**Advantages and Uses of AMTEC** M.A.K. LODHI, Texas Tech University — Static conversion systems are gaining importance in recent times because of newer applications of electricity like in spacecraft, hybrid-electric vehicles, military uses and domestic purposes. Of the many new static energy conversion systems that are being considered, one is the Alkali Metal Thermal Electric Converter (AMTEC). It is a thermally regenerative, electrochemical device for the direct conversion of heat to electrical power. As the name suggests, this system uses an alkali metal in its process. The electrochemical process involved in the working of AMTEC is ionization of alkali metal atoms at the interface of electrode and electrolyte. The electrons produced as a result flow through the external load thus doing work, and finally recombine with the metal ions at the cathode. AMTECs convert the work done during the nearly isothermal expansion of metal vapor to produce a high current and low voltage electron flow. Due to its principle of working it has many inherent advantages over other conventional generators. These will be discussed briefly.

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