



PN energy storage battery

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What is a betavoltaic nuclear battery? Compared to other nuclear batteries, betavoltaic nuclear batteries are suitable for applications that require low electrical power due to their long lifetime and high energy density [11]. In the betavoltaic nuclear battery, a semiconductor is used as an energy converter. Is ALN betavoltaic nuclear battery economically viable? This study shows that the efficiency of AlN betavoltaic nuclear battery can be higher than GaN and SiC betavoltaic nuclear batteries. While it is economically viable. In the future study, model number 3 will be investigated as several layers that are connected in series or parallel mode. What is the efficiency of ALN betavoltaic nuclear battery using MCNP? In Ref. [51], the electrical properties of GaN betavoltaic nuclear battery using MCNP were about 0.5 V, 7.5 nA/cm², and 2.25 %, respectively. Therefore, the efficiency of AlN betavoltaic nuclear battery (in this study) is about 130 % more than the efficiency of the GaN betavoltaic nuclear battery calculated by Ref. [51].

4. Conclusion

What are battery energy storage systems? Battery energy-storage systems typically include batteries, battery-management systems, power-conversion systems and energy-management systems 21 (Fig. 2b). Are ALN betavoltaic nuclear batteries more efficient than GaN and SiC? According to Fig. 13, in different thicknesses of P N junction, AlN betavoltaic nuclear battery efficiency is higher compared to GaN and SiC betavoltaic nuclear batteries. Based on the optimal dimensions obtained for GaN and SiC in model number 1, model number 3 was investigated for them.

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