Nordische

Aluminium Ion Batteries

Aluminium-Graphene Battery

Nordische Energy Systems Pvt Ltd , India has developed the Aluminium Graphene (Al-Gr) battery technology - an extraordinary battery chemistry based on the Aluminium and Graphene material which is unique in the world. This technology has been developed to improve the safety standards of the end user and the ongoing dependence on lithium which is toxic and has geo-political challenges to procure.

This brings innovation to the energy storage market in terms of abundance & low cost of raw materials, safety due to the composition of the components in the battery (no fire/explosion), high performance and energy density value (220 wh/kg), fast charging (100% DoD) and high recyclability rate.

The Al ion battery has technological benefits in terms of Strong Performance, Superior Safety, Sustainable Technology and Affordable Manufacturing.

a) **Strong Performance -** Aluminum-ion batteries (Al-ion batteries) have garnered attention as potential alternatives to lithium-ion batteries in terms of potential cost-effectiveness, high abundance, high energy density, safety profile, non-toxic, fast charging, environment friendly and durability offering longer-lasting energy storage solutions.
b) **Superior Safety –** The combination of aluminium and graphene in battery technology has been explored to harness the potential benefits of both materials. The superior safety aspects of aluminium-graphene batteries involve - reduced dendrite formation due to the synergistic effects between aluminium and graphene, thus improving safety, enhanced thermal stability and mechanical strength, improved electrochemical performance, non-flammability and absolutely safety, making them a promising candidate for safer energy storage solutions.
c) **Sustainable Technology -** The development and potential sustainability of aluminum-graphene batteries lie in their combination of materials and their potential advantages over traditional battery technologies like huge abundance of materials, high rate of recyclability, reduced environmental impact, appreciable longevity and durability and high energy efficiency.

d) **Affordable manufacturing -** Achieving affordable manufacturing of aluminium-graphene batteries requires optimising various aspects of the production process, materials sourcing and scalability.