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RESEARCH & DEVELOPMENT OF NEW CONCEPT OF SOLID STATE BATTERIES .

Abstract

Introduction Energy is the most fundamental part for living and development. It should also be portable to be carried to space and that it is not treacherous to the rocket or the carrying vehicle. Another option that comes to the energy source is the sun, the solar energy. But as we know solar energy is not an effective way as the energy produced is not sufficient. Here I have discussed few methodologies and prototype that can help to advance the extraction of energy in a faster and reliable way. Theory As the power source is time dependent so the extra power can be stored in the batteries. So during the night this power can be utilized. Even if we look for nuclear power the energy generated at the initial stages are more in the form of heat which can be stored in batteries. The heat generated from the Kilo power plant which is distributed to the thermal fins can be directed to the roof tops of the habitat station during night to work as room heater. Advanced batteries should be used which charge up quickly this can be used a hybrid power system to the solar power. Methodology From 40W/liter with lithium ion battery by sony now Samsung introduce Solid state battery which delivers 900 watts per liter and a minimum lifetime of thousands cycle. In solid state battery layers of lithium nickel cobalt manganese oxcide mixed with a sulfide solid electrolyte on top of a nano composite layer of silver carbon. All of this compacted in a foil of aluminium and stainless steel as a current collector. Discussion Hence using this battery will exclude the use of lithium atoms part of the NMC or the SSE, so no dendrites formation hence better safety to the space station. By removing the layers of silicon and having silver atoms playing the part of the matrix to guide the ions one can effectively introduce more cathode into the mix hence increasing the overall density to the batteries leading to increase in productivity by about 200