

“SOLID STATE WATER COOLER/HEATER FOR ARMOURED VEHICLES”

SHUCHITANGSHU CHATTERJEE

Dy General Manager-Incharge (R&D), R&D Division, Mecon Ltd., Ranchi, Jharkhand, India

ABSTRACT

During the journey to war field; it is an acute problem for the soldier for getting comfortable cold drinking water, especially during summer. Generally after three hours; soldiers used to take warm water for drinking purpose and due to this physiological parameters of human body goes from bad to worse. Similarly for cooking their food, they were unable to get warm or hot water during their war field. Such warm or hot water they may like to use for preparing their Meals ready to eat. Hence; they need such a system which may be able to resolve both the above requirements during their war field. It could be possible by Solid State Cooling/Heating concept where the system has to be much simpler, requires small size and weight, ensures safe and maintenance free operation, and is extremely reliable compared with any other competing cooling/heating concepts.

Keeping this in mind; the objective of this work is to design the typical system of Solid State Water Cooler/Heater for Army personnel by considering all the boundary condition given for respective Armoured Vehicles.

KEYWORDS: Armoured Vehicles, Peltier Effect, Solid State/Thermoelectrics Cooling & Heating