



Name of Technology: Low-cost and maintenance-free Thermoelectric Cooler/Refrigerator

Summary:

This technology of cooler/refrigerator is based on solid state Peltier device and runs without compressor and hence it is cost-effective, maintenance-free and has a very long life. This unit does not require grid power and can be powered by a ~40W solar panel or a battery. This cooler/refrigerator provides a cost-effective technological solution for storage of perishable food stuff, including, milk products, fruits, vegetables and access to cold drinking water. This unit is also an affordable system to store the medicines at prescribed temperature, as per the WHO standards.

Specification:

Capacity: 25 liter, Temperature: 7-10 °C, Power Requirement 40W (compatible with solar panels, DC and AC), Weight: ~ 7Kg, working lifetime: ~10 years and maintenance free



Thermoelectric Cooler/ Refrigerator

Applications & Advantages

This technology provides the utility of a refrigerator at an affordable cost and is primarily useful for economically weaker sections and for rural and remote population, which do not have access to 24×7 electricity. This cooling unit has tremendous potential in the market and is mainly useful for the under-privileged and remote & rural populations of India, which do not have access to uninterrupted electrical supply. Apart from the house-hold application this cooling unit can also be used to stores medicines at prescribed temperatures by chemists, as it does not require grid power.



Choose the Readiness level of the Technology:

Idea	Concept Definition	Proof of Concept	Prototype	Lab Validation	Technology Development	Technology Demonstration	Technology Integrated	Market Launch

Related Patent:

Patent No: Nil

Country: Nil

Publication Date: Yet Not Published

Grant Date: Not Applicable

Year of Introduction: 2017

Broad Area/Category: Rural & Societal Technologies

User Industries: Refrigerator industries, Food storage industries, Gram Panchayats, Medical Stores, small family homes

For further details please contact:

Head, Industrial Liaison Group (ILG)

Room No. 46-A, Main Building

CSIR-National Physical Laboratory

Dr. K.S. Krishnan Marg

New Delhi 110012, INDIA.

Email: headilg@nplindia.org

Tel: +91-11-4560-8350/8247/9385

Fax: +91-11-4560-9310