

# Powerless Heating Technology

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**In news**– New low cost ‘Powerless Heating System’ activated with water can heat food in remote areas

## **What is a Powerless Heating System?**

- A new low-cost heating system which can be activated by plain water anytime anywhere and **does not require any fuel or electricity to heat or power it**, can act as a heating solution in any location.
- Lack of heating sources at remote places with no access or uncertain access to power sources is an inconvenience faced by many, especially in remote areas like the North East.
- Dr. Sumer Singh, Associate Professor, Department of Design, IIT Delhi along with his research team addressed this with a technology that works on chemical energy. **It is called ‘Powerless Heating Technology’.**
- The **active heating element consists of a mixture of eco-friendly minerals and salts, which generates exothermic energy** resulting in heat on contact with water. This **provides enough energy to raise the temperature of any food or beverage by 60 to 70 degree Celsius.**
- The **weight of the heater is only 50 grams**, and after every heating, the by-product (natural mineral rock) inside the heating pad can be disposed of.
- The rock helps in improving the fertility of the soil and is 100 % biodegradable.
- **With this technology, users can heat ready-to-eat food, make instant noodles, and any beverage like tea, coffee, etc.**
- **The by-product of the heating process is a natural mineral that easily integrates into the soil without any toxic effects.**
- North East Center for Technology Application and Reach

(NECTAR), an autonomous body under the Department of Science Technology, Govt. of India, supported Dr. Singh and his team to develop a food box and a liquid container that can be integrated with the Powerless Heating Technology.

- They have used it to develop containers which can heat food or & beverages on demand.
- This Powerless Heating Technology eliminates the need for burning forest wood for heating purposes, thus also reducing forest fires, which is a major problem in the North Eastern parts of the country.
- Anchiale Technologies, a Gurgaon-based spin-off start-up, is scaling up this technology and has started supplying it to the Indian Navy and some food manufacturing companies. A patent for the technology has been filed.
- A nondisclosure agreement (NDA) has been signed with the Indian Tobacco Company (ITC) for integration of this technology in their food products.

