

Technical Disclosure Commons

Defensive Publications Series

April 23, 2019

HEAT-TO-ELECTRIC ENERGY CONVERSION SYSTEM USING A HEAT PUMP FOR CHARGING E-VEHICLES

Verena Schwaiger

Bertrandt Ingenieurbüro GmbH

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation

Schwaiger, Verena, "HEAT-TO-ELECTRIC ENERGY CONVERSION SYSTEM USING A HEAT PUMP FOR CHARGING E-VEHICLES", Technical Disclosure Commons, (April 23, 2019)
https://www.tdcommons.org/dpubs_series/2158



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

HEAT-TO-ELECTRIC ENERGY CONVERSION SYSTEM USING A HEAT PUMP FOR CHARGING E-VEHICLES

Technical task:

Vehicles can often heat up considerably in the sun. At present, this energy remains unused.

Initial situation:

In this context, the resulting heat energy represents an unused potential that could be used to charge the vehicle, especially in e-vehicles.

Solution:

Under the visible outer surfaces of the vehicle are cannulae or pipes containing a liquid. By means of a heat pump circulation system, this heat energy is skimmed off and converted into electrical energy. This is used to charge the e-vehicle.

Complementary idea:

With progressive manufacturing methods (3D printing), the cannulas can run inside the outer surfaces of the vehicle. This means that they are directly integrated during the production of the exterior surfaces of the vehicle.

Advantages:

- Utilization of thermal energy that was previously unused.
- Charging electric vehicles with sunlight, as an alternative or supplement to solar cells