

Technology Forecast

A Cool Concept in Air Conditioning

A technology developed to keep beverages cold in electronic coolers may do the same job for automobiles. Known as Peltier-effect (PEL-tee-aye) modules, these devices could soon appear in passenger cars and trucks.

Peltier-effect units are small, manufactured in 1□ squares that are just 0.15□ thick. They operate on 3 to 12 volts of direct current (DC). When this current is applied to the modules, heat is produced on one side, while cold is produced on the other. A temperature difference of more than 150°F can exist between the two sides.

To circulate the cool air throughout the vehicle, small fans would be used. Unlike today's air conditioners that use large, noisy fans, Peltier-effect systems would use smaller, quieter ones. Controlled by computer, the Peltier-effect modules can create more or less cooling as needed in specific areas.

Benefits of this technology range from easier diagnosis and repair of air conditioning components to increased efficiency. Also, traditional air conditioning equipment and refrigerants will no longer be needed. Vehicles will weigh less for better fuel economy.

Peltier-effect modules could even be installed in the glove box. Imagine being able to keep your beverages cool and food hot for a meal while traveling!

Action Activity

Using Peltier-effect modules in vehicles is a spin-off of technology used to keep drinks cold. A *spin-off* is transferring a technology from one application to another. Can you identify other technology spin-offs used in vehicles? Select one spin-off and research its use in vehicles. Present your information to the class.