

Renaissance of 200-year old technology could ease 21st century sustainability challenges

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The obscure technology used in heated automobile seats, gadgets that charge iPhones from the heat of a campfire, and other devices is undergoing a renaissance and could well emerge as a new "green" substitute for traditional sources of energy and play other key roles in addressing some of society's most pressing sustainability issues. That's the conclusion of an article on the technology — termed thermoelectrics — in the current issue of *Chemical & Engineering News* (C&EN) the American Chemical Society's weekly newsmagazine.

In the article, C&EN Senior Editor Mitch Jacoby points out that the key scientific discoveries underpinning thermoelectrics date to the early 1800s. The effect involves direct conversion of temperature differences to electric current and the use of electric current to either absorb or release heat, thereby cooling or heating objects. Thermoelectric [technology](#) is at the heart of climate-conditioned car seats, [gadgets](#) that recharge personal electronics from campfires, and could be used in refrigerators with no moving parts, and an array of other applications.

Manufacturers in the 1960s were actively producing thermoelectric cooling and power-supply devices. Although that niche market, mainly for the military and aerospace industries remained, interest in the thermoelectric effect dwindled. But during recent years, there has been resurgence in interest from both manufacturers and scientists. Advances in materials used to make thermoelectric devices are paving the way for multiple new applications, described in the article.

More information: “Thermoelectrics Make a Comeback” at pubs.acs.org/cen/science/89/8925sci1.html

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