

High temperature superconducting solar container battery





Overview

What are high-temperature superconductors used for?

High-temperature superconductors are now used mostly in large-scale applications, such as magnets and scientific apparatus. Overcoming barriers such as alternating current losses, or high manufacturing costs, will enable many more applications such as motors, generators and fusion reactors.

Can high-temperature superconductors be used to cool LTSs?

Broader applications of LTSs have been hindered by the need to cool them with liquid helium (at or below 4.2 K). High-temperature superconductors (HTSs) (1) that can operate at liquid nitrogen temperatures (between 65 and 80 K) promised ubiquitous applications that could escape the constraint of LTSs.

Can high-temperature superconductors be used in large-scale applications?

Developments in HTS manufacture have the potential to overcome these barriers. In this Review, we set out the problems, describe the potential of the technology and offer (some) solutions. High-temperature superconductors are now used mostly in large-scale applications, such as magnets and scientific apparatus.

Could high-temperature superconductivity revolutionize the electric power industry?

Since the unexpected report in 1987 of high-temperature superconductivity at 93 K (1), the idea that HTSs could revolutionize the electric power industry (3), going far beyond the classical application of superconductivity to electromagnets, has been pursued.



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