Measures to improve solar container density of room temperature superconductors

Can room-temperature superconductivity be achieved in the future?
In recent years, more and more reports on room temperature superconductivity evoke many anticipations, but results remain controversial. Here, we introduce the characteristics of superconducting phenomena and propose 10 feasible paths to achieve room-temperature superconductivity in the future.

What is room-temperature superconductivity in condensed matter physics?
3.1. Status One of the grand challenges in condensed matter physics is the quest for room-temperature (RT) superconductivity. More than a century of rigorous research had led physicists to believe that the highest critical temperature (Tc) that could be achieved for conventional superconductors was 40 K .

Are superconductors suitable for high-temperature superconductivity in copper-oxide materials?
Since the discovey of high-temperature superconductivity in copper-oxide materials in 1986 there has been an intensive search for unconventional superconductors with exotic superconducting pairing mechanisms beyond phonon-mediated BCS (Bardeen-Cooper-Schrieffer) and, with desirable high transition temperatures.

Is room temperature superconductivity a reality?
15.1. Status Room temperature superconductivity is already a realitythanks to the recent discovery of a carbonaceous sulfur hydride with a critical temperature (Tc) as high as 288 K .

Are high temperature superconductors room-temperature?
Since the discovery of high-temperature superconductors ("high" being temperatures above 77 K (-196.2 °C; -321.1 °F),the boiling point of liquid nitrogen),several materials have been claimed,although not confirmed,to be room-temperature superconductors.

Can a material be a superconductor at room temperature and atmospheric pressure?
Is it possible to make a material that is a superconductor at room temperature and atmospheric pressure? A room-temperature superconductor is a hypothetical material capable of displaying superconductivity above 0 °C (273 K; 32 °F), operating temperatures which are commonly encountered in everyday settings.

Since the discovery of high-temperature superconductors ("high" being temperatures above 77 K (-196.2 °C; -321.1 °F), the boiling point of liquid nitrogen), several materials have been claimed, although not confirmed, to be room-temperature superconductors. In 2014, an article published in Nature suggested that some materials, notably YBCO (

erconducting Tc has lasted for (so far) 28 years. This recent advancement of the maximum Tc, revealing a breakthrough increase toward room temperature superconductivity that prompted this arti

The dominated H density of states at the Fermi level and the strong Fermi surface nesting are favorable for the emergence of room-temperature superconductivity. Their excellent superconducting properties ...

Abstract After the decade-long exhaustive study of binary high-Tc superconducting hydrides, the frontier of this stimulating research field has recently shifted to ternary hydrides with much expanded ...

In our study, we have explored a dynamical approach to potentially increase the superconducting transition temperature (Tc) in hydride materials, exemplified by LaH 10.

A new era of superconductivity was initiated by the discovery of high-temperature conventional superconductivity in H3S [1]and LaH10 [2], [3]. An unprecedented synergy between high ...

High-throughput discovery of room-temperature superconductors among complex ternary clathrate hydrides Physical Review B (IF 3.7) Pub Date : 2025-05-27, DOI: 10.1103/ckk3-mwqq

Develop nanostructuring and strain engineering approaches to enhance superconducting characteristics. Implement machine learning algorithms to predict and design new room-temperature ...

And here, basically every "High Temperature" Superconductor and claimed Room Temperature Superconductors fall apart. For instance, we have RCBO Magnets which are superconducting at the ...

But in fact we know enough about their behavior to assemble some clear guidelines as to how to increase Tc and in practical terms how to increase the critical current density, Jc. A ...

This paper has presented an analysis of the design and feasibility of employing High Temperature Superconducting (HTS) cables for Space Solar Power Satellite (SBSP) applications.

After the decade-long exhaustive study of binary high-Tc superconducting hydrides, the frontier of this stimulating research field has recently shifted to ternary hydrides with much ...

temperature superconductors have been carried out worldwide(2, 3) through their experimental clarity or/and theoretical perspectives(4-8). The recent success of developing room-temperature ...

Does room temperature superconductivity meet a long-standing challenge in solid state physics? In this contribution we describe the route which permitted to meet a long-standing challenge in solid state ...

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The 2021 room-temperature superconductivity roadmap Ryotaro Arita presents a completely parameter-free formulation of Eliashberg theory and demonstrates its exceptional precision in capturing the ...

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