# Preparation of superconducting container

Can a superconducting sample be synthesised using ultrahigh vacuum?
However,the synthesis of superconducting samples has been proven to be challenging. Here,an ultrahigh vacuum (UHV) ${\mathrm {\text {in situ}}}$reduction method is developed using atomic hydrogen as a reducing agent and is applied in the lanthanum nickelate system.

How can superconductivity be achieved?
On an empirical basis,it seems natural to expect that superconductivity can be achieved through the synthesis of cuprate analogsthat share common features including spin one-half,two-dimensionality,and strong antiferromagnetic correlations.

What is the reduction window for achieving superconducting transition?
The reduction parameters,including the reduction temperature (TR) and hydrogen pressure (PH),are systematically explored. It is found that the reduction window for achieving superconducting transition is quite wide,reaching nearly 80°Cin TR and three orders of magnitude in PH when the reduction time is set to 30 min.

Can infinite-layer nickelates be used to synthesis a superconductor sample?
Learn more. Since their discovery,the infinite-layer nickelates have been regarded as an appealing system for gaining deeper insights into high-temperature superconductivity (HTSC). However,the synthesis of superconducting samples has been proven to be challenging.

Can superconducting ND 0.8 SR 0.2 Nio 2 films grow?
In this Letter,we report the successful growthof superconducting infinite-layer Nd 0.8 Sr 0.2 NiO 2 films. The perovskite precursor phase nickelate films were prepared using pulsed laser deposition (PLD). The infinite-layer phase was acquired by a soft-chemistry reduction method.

Which XRD pattern is a good criterion for superconducting films?
Nevertheless,we find that the XRD pattern of the precursor 113 phaseis a good criterion to obtain superconducting films. The (002) peak of the secondary phase locates at about 47.8°,while for the 113 phase the (002) peak is at the 2 ? larger than 48° and thickness-dependent.

This report attempts to describe the "final preparation" procedures known to yield the highest gradients for 9-cell cavities. These final steps include degreasing, light electropolishing (EP), high pressure rinsing (HPR) with ultra-pure water (UPW), drying, evacuation, and mild baking. A core set of final treatment parameters is followed by ...

The superconducting infinite-layer nickelate films can be synthesized fully in vacuo${mathrm{text{in

vacuo}}}$ using atomic hydrogen, while the atomically flat surface has ...

In this Letter, we report the successful growth of superconducting infinite-layer Nd 0.8 Sr 0.2 NiO 2 films. The perovskite precursor phase nickelate films were prepared using pulsed laser deposition (PLD). The infinite-layer phase was ...

Improved critical temperature of superconducting plasma-enhanced atomic layer deposition of niobium nitride thin films by thermal annealing Liang Tian, Ivane Bottala-Gambetta, Victor Marchetto, Manoël Jacquemin, Alexandre Crisci, Roman Reboud, Arnaud Mantoux, Frédéric J. Mercier, Gregory Berthomé, André Sulpice, et al. To cite this version: Liang Tian, Ivane Bottala ...

Among many synthesis methods, the diffusion method is the mostly effective way to synthesize MgB 2 of superior superconductivity, while such process requires simple equipment and is easy to operate. This article systematically introduced various diffusion methods, including infiltration growth method, infiltration capsule method, liquid phase ...

Despite the many efforts to understand the superconductivity in infinite-layer nickelates, a consensus on the underlying mechanism for the superconductivity has yet to be reached, partly owing to the challenges with the material synthesis. Here, we report the successful growth of superconducting infinite-layer Nd$ _{0.8}$Sr$ _{0.2}$NiO$ _{2 ...

As new generation functional materials, the preparations of low-melting liquid metals become more and more increasingly important. So far, various methods, such as alloying, oxidizing, adding metals or non-metallic materials and so on, have been developed to prepare desirable functional materials based on the gallium or more other metals [ 1 ].

The superconducting infinite-layer nickelate films can be synthesized fully in vacuo${mathrm{text{in vacuo}}}$ using atomic hydrogen, while the atomically flat surface has been confirmed by atomic ...

A preparation method of a small-size MgB2 superconducting joint with 2.0 mm diameter for C-doped 30-filament MgB2 wires is presented in this paper. Herein, an unreacted in situ C-doped monofilament wire was utilized as the connecting structure, since it contains a low quantity of dense precursor which needs less pressure during fabrication, avoiding distortion of ...

Despite the many efforts to understand the superconductivity in infinite-layer nickelates, a consensus on the underlying mechanism for the superconductivity has yet to be reached, ...

PDF | On Jun 29, 2012, Pablo Cayado Llosa published Preparation of GdBa2Cu3O7 superconducting films by chemical solution deposition | Find, read and cite all the research you need on ResearchGate

# Preparation of superconducting container

In this work, we compared Bi2Sr2CaCu2O8+? (BSCCO) superconducting nanofibers prepared by electrospinning (ES) and solution blowing spinning (SBS) techniques for the first time. The differences in microstructure and magnetic properties of BSCCO superconducting fibers prepared by ES and SBS were investigated. The thickness of the ES ...

Among many synthesis methods, the diffusion method is the mostly effective way to synthesize MgB 2 of superior superconductivity, while such process requires simple equipment and is ...

In recent years, with the steady improvement of preparation techniques, experimental research on high-temperature superconductivity has progressed to a stage of enhanced performance with potential breakthrough applications. This paper will briefly review the development and physical characteristics and classification of ...

The preparation of inner surface of the cavity is the most important issue for the high field and the stable operation of superconducting cavity. KEYWORDS : Superconducting cavity, Electro polishing, EP, BCP, O3. 1. ? ? ? ?. ?????????(RF)??????????? ??(Nb)????????????????????? ???????????????

The preparation typically involves heating process of ceramic powders which must undergo special handling in order to control purity, particle size distribution and heterogeneity. In this paper, attempt has been made to describe the synthetic methods used to prepare the Y-,

Web: https://doubletime.es