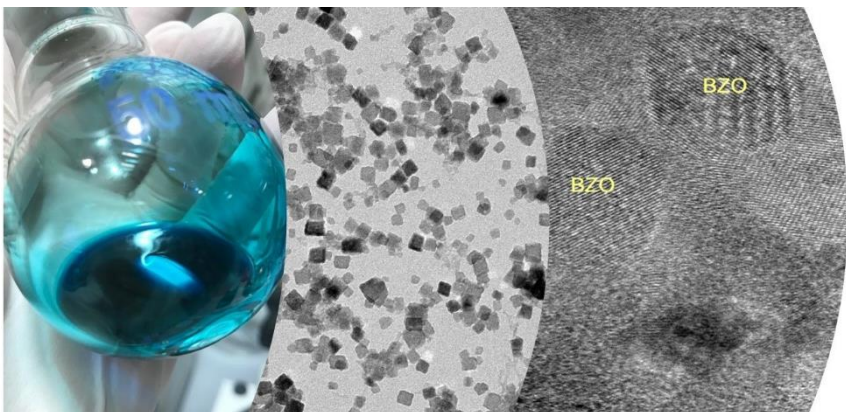


TECHNOLOGY
OFFER

 CSIC/AF/0
16

Ink for the production of superconducting flexible tapes



NEW PRECURSOR SOLUTION SUITABLE FOR TLAG-CSD GROWTH OF SUPERCONDUCTING FILMS.

INTELLECTUAL PROPERTY

PCT PATENT APPLICATION FILED

STAGE OF DEVELOPMENT

METHOD VALIDATED IN LABORATORY

INTENDED COLLABORATION

LICENSING AND/OR CO-DEVELOPMENT

CONTACT

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Market need

THE INTRODUCTION OF HIGH TEMPERATURE SUPERCONDUCTORS (HTS) IN FLEXIBLE TAPES, SPECIFICALLY COATED CONDUCTORS (CCs) ALLOWED THEIR INDUSTRIAL IMPLEMENTATION. HOWEVER, THE COST OF CCs IS HIGH, MAINLY DUE TO THE SLOW SPEED OF PRODUCTION OF THE SUPERCONDUCTING FILM.

FASTER PRODUCTION METHODS ARE NEEDED IF WE WANT TO INCREASE THE USE OF CCs IN DIFFERENT APPLICATIONS



CSIC solution

WE HAVE DEVELOPED A NEW TECHNIQUE TO PRODUCE CCs, THE TRANSIENT LIQUID ASSISTED GROWTH-CHEMICAL SOLUTION DEPOSITION (TLAG-CSD). THIS TECHNIQUE IS 100 FOLD FASTER THAN CURRENTLY USED TECHNIQUES. A KEY POINT OF THE TECHNIQUE IS THE PRODUCTION OF THE SOLUTION INK THAT WILL CREATE THE SUPERCONDUCTING LAYER IN THE CCs.

WE HAVE A NOVEL CLASS OF ENVIRONMENTALLY FRIENDLY SOLUTIONS AND COLLOIDAL SOLUTIONS WITH HIGHER STABILITY. THE USE OF THESE SOLUTIONS INCREASES THE STRUCTURAL HOMOGENEITY OF THE SUPERCONDUCTING FILM AND THEIR PERFORMANCE.

Competitive advantages

- NEW INKS ARE USED IN THE TLAG-CSD TECHNIQUE FOR FAST FLEXIBLE SUPERCONDUCTING TAPES PRODUCTION.
- FLUORINE-FREE INKS, MEETING THE REQUIREMENTS OF GREEN CHEMISTRY
- ENHANCED STRUCTURAL HOMOGENEITY AND PERFORMANCE OF THE SUPERCONDUCTING LAYER