

MANUFACTURING METHOD OF BULK MONOCRYSTALLINE GdBCOAg SUPERCONDUCTOR

INNOVATIVE TECHNOLOGY

The technology refers to a new concept of achieving the maximum size of grown GdBCOAg bulk single crystal superconductor, prepared by growth from fused superconductor components.

According to the new production method, adding BaCeO₃ in relevant volume will decrease the volumetric proportion of the residual solidified melt compared to the equivalent addition of the standard used CeO₂. This difference significantly increases the size of the prepared bulk crystal.

AREA OF APPLICATION

The technology can be used in various areas, specifically in the area of production of bulk monocrystalline superconductors by the method of growing crystals from a molten mixture of superconductor components.

STAGE OF DEVELOPMENT AND PROTECTION

- **functionality verified** in laboratory conditions
- Priority **patent application**



COMPETITIVE ADVANTAGE

- possibility of using cheaper cerium compared to expensive platinum,
- achieving larger dimensions of a bulk monocrystalline superconductor,
- the possibility of reducing the volume fraction of the residual solidified melt,
- the possibility of reducing dilatational thermal stresses at the crystal/solidified melt interface,
- the possibility of reducing the risk of cracks during cooling from the temperature of crystal growth,
- the ability to optimize the production process of a bulk monocrystalline superconductor,
- the possibility of reducing production costs,
- the possibility of increasing production profit.

WE ARE LOOKING FOR AN INDUSTRIAL PARTNER FOR LICENSING/SELLING THE TECHNOLOGY



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