

Fabrication of 6 cm Class YBaCuO Single Crystal

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We have studied fabrication of YBaCuO single crystal of large size. The YBaCuO single crystal is manufactured by top seeded melt growth method. In conventional box furnace with uniform temperature distribution, a limitation of single crystal size was observed, so it was very difficult to grow large single crystal.

In our experiment, it has been processed with a radial thermal gradient (lower temperature at sample center and higher temperature on the sample edge). In this case, large single crystal can be easily grown because the liquid is held at a higher temperature than the growth front. We manufactured a furnace with a radial thermal gradient and fabricated a large YBaCuO single crystal of 6.4cmx6.4cm

Keywords : YBaCuO, single crystal, thermal gradient