

Im Rahmen des Projektseminars

Technical Physics

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spricht

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über

Pulsed Laser Deposition (PLD) and Electrical Characterization of High T_c Superconducting Thin Films

Abstract:

YBa₂Cu₃O_{7-x} and GdBa₂Cu₃O_{7-x} are high temperature superconductors with relatively high critical temperature of above 90 K. When deposited as thin films at a thickness of less than 1 μm, the critical current density can exceed those of the bulk materials by magnitudes. Several ceramics and PLD thin films of YBa₂Cu₃O_{7-x} and GdBa₂Cu₃O_{7-x} were manufactured and tested for their respective critical temperature. Some issues in the PLD setup were eliminated and the process optimized. The thin films were lithographically structured to determine the critical current density using current-voltage and thickness measurements.