

ULTRATHIN FILMS OF HIGH- T_c SUPERCONDUCTORS, HETEROSTRUCTURES AND SUPERLATTICES ON THEIR BASE

I. S. Baikov

The All-Russia Research Institute of Interbranch Information, Moscow, Russia

A. I. Golovashkin

P. N. Lebedev Institute of Physics RAS, Moscow, Russia

We describe a modern technology for preparation for HTSC ultrathin films and multilayered structures on their base. Up-to-date short review of experimental investigations is given. The present results show strong evidence for quasi-two dimensional nature of cuprate high- T_c superconductivity.

Литература

1. Байков И. С., Головашкин А. И. Прикладная физика. 1994. № 2. С. 3.
2. Nakamura O. et al. // Appl. Phys. Lett. 1992. V. 60 (1). P. 120.
3. Zama H. et al. // Japan J. Appl. Phys. 1994. № 33. P. L 312.
4. Eckstein J. N. et al. // Thin Solid Films. 1992. V. 216. P. 8.
5. Bozovic I. et al. // Atomic Layer Engineering of Cuprate Superconductors: Preprint USA, 1993. — 25 P.
6. Locquet J.-P., Machler E. // MRS Bulletin. Sept. 1994. V. XIX. P. 39.
7. Eckstein J. N. et al. // Ibid. V. XIX. P. 44.
8. Eskstein J. N. et al. // Ibid. August 1992. V. XVII. P. 27.
9. Gupta A. et al. // Physica C. 1993. V. 209. P. 175.
10. Tabata H., Kawai T. // Thin Solid Films. 1993. V. 225. P. 275.
11. Feenstra R. et al. // Physica C. 1989. V. 162—164. P. 655.
12. Terashima T. et al. // Japan J. Appl. Phys. 1989. V. 28. P. 987.
13. Triscone J. M. et al. // Phys. Rev. Lett. 1990. V. 64. P. 804.
14. Li Q. et al. // Ibid. P. 3086.
15. Lowndes D. H. et al. // Ibid. V. 65. P. 1160.
16. Terashima T. et al. // Ibid. 1991. V. 67. P. 1362.
17. Chan I. N. et al. // Phys. Lett. 1993. V. 175. P. 241.
18. Kwon C. et al. // Appl. Phys. Lett. 1993. V. 62. P. 1289.
19. Norton D. P., Lowndes D. H. // Ibid. V. 63 (10). P. 1432.
20. Bandte C. // Appl. Phys. Physica B. 1994. V. 194—196. P. 1359.
21. Bozovic I. et al. // Mat. Res. Soc. Symp. Proc. 1992. V. 275. P. 67.
22. Watanabe H. et al. // Appl. Phys. Lett. 1993. V. 63. P. 246.
23. Alarco J. A. et al. // J. Appl. Phys. 1994. V. 75. P. 3202.
24. Schuller I. K., Bruynseraede Y. // The Rigaku Journal. 1993. V. 10. P. 3.
25. Frey T. et al. // Phys. Rev. B. 1994. V. 49. P. 3483.
26. Roy R. et al. // J. Vac. Sci. Technol. A. 1994. V. 12 (2). P. 269.
27. Rossel C. et al. // Physica C. 1994. V. 223. P. 370.
28. Savvides N., Katsaros A. // Ibid. V. 226. P. 23.
29. Dalton Y. et al. // Bull. Inst. Chem. Res. Kyoto Univ. 1993. V. 70. P. 494.
30. Valles J. M. et al. // Physica B. 1994. V. 197. P. 522.
31. Physics, Fabrication and Application of Multilayered Structures. Ed. P. Dhez, C. Welsbuch. Plenum, N. Y., 1988.
32. Matsuda Y. et al. // Phys. Rev. Lett. 1992. V. 69. P. 3228; Phys. Rev. B. 1993. V. 48. P. 10498.
33. Hellman E. S. et al. Advances in Superconductivity IV, ed. H. Yayaakawa, N. Koshizuka (Springer, Tokyo, 1992). P. 855.
34. Abe H. et al. // IEEE Electron Device Lett. (EDL). 1993. V. 14. P. 100.
35. Ogihara M. et al. // Appl. Phys. Lett. 1993. V. 63 (19). P. 2694.
36. Brunner O. et al. // Helvetica Phys. Acta. 1990. V. 63. P. 803.
37. Triscone J.-M. et al. // Phys. Rev. Lett. 1989. V. 63. P. 1016.
38. Fullerton E. E. et al. // Ibid. 1992. V. 69. P. 2859.
39. Bozovic I. et al. // J. Superconductivity. 1992. V. 5. P. 19.
40. Bozovic I. et al. Superconducting Oxide Multilayers and Superlattices: physics, chemistry, and Nanoengineering. Physica C, 1995.
41. Kanai M. et al. // Appl. Phys. Lett. 1990. V. 57. P. 198.
42. Superconducting Superlattices and Multilayers. Ed. I. Bozovic. SPIE Proc. V. 2157. Los Angeles. 1994. — 386 p.
43. Oxide Superconductor Physics and Nanoengineering. Ed. D. Pavuna, I. Bozovic. SPIE Proc. V. 2158. Los Angeles, 1994. — 282 p.