# ERRATA

## Erratum: "(110)-oriented Bi–Sr–Ca–Cu–O superconducting thin films prepared by metalorganic chemical vapor deposition" [J. Mater. Res. **8**, 978 (1993)]

Nobuhiko Kubota, Tsunemi Sugimoto,[a] Yuh Shiohara, and Shoji Tanaka
*Superconductivity Research Laboratory, ISTEC, 10-13 Shinonome 1-chome, Koto-ku, Tokyo 135, Japan*

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When this article appeared in the May issue of *Journal of Materials Research,* some incorrect fonts were inadvertently used to output the final version of page 983 of the article. The following is the corrected page, output with the appropriate fonts, as it should have appeared in the May issue.

[a]Present address: Electronic Materials Research Division, Inorganic Materials Research Laboratory, Corporate Research & Development, UBE Industries, Ltd., 1978-5 Kogusgi, Ube City, Yamaguchi Prefecture 755, Japan.



 

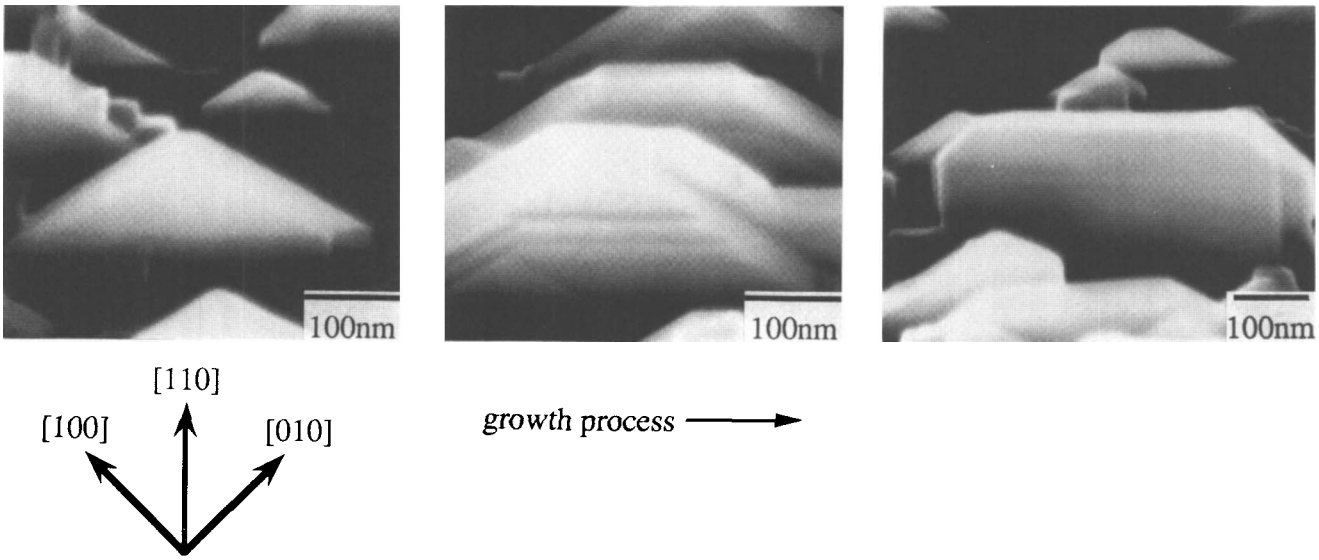


FIG. 8. SEM photographs of the (110)-oriented grain at the film surface tilted about 40°.

two-dimensional nucleation at the initial stage of the deposition by MOCVD, as shown in Fig. 9(a).[9] On the other hand, Fig. 9(b) shows that the nucleation and the grain growth process of (110)-oriented films are different from the *c*-axis one, at least in the plane parallel to the substrate. We believe there are two types of growth processes; one depends on the coarsening of Fig. 9(b)-1, and the other is related to the coalescence of Fig. 9(b)-2. We plan to monitor *in situ* and analyze the gas phase exactly by means of a Quadrupole mass spectrometer (Q-mass), so as to realize the relationship with the supersaturation.

Finally, we described the superconducting properties of these films. The resistivity versus the temperature of the films is shown in Fig. 10. 300 nm thickness film and 1 $\mu$m thickness films could only transport and apply a current along the [110] direction of the MgO substrate. The $T_{c0}$ appeared in both samples: 30 K for a 300 nm thickness film and 60 K for a 1 $\mu$m thickness film, but 300 nm thickness samples had a long tailing. The critical current density ($J_c$) at 4.2 K is about $1 \times 10^4$ A/cm$^2$ on a 1 $\mu$m thickness sample and $1 \times 10^2$ A/cm$^2$ on a 300 nm thickness sample. We think the value of $J_c$ depends on the density of (110)-oriented grains and the form of the grain boundary, so this value will rise by improving the film quality.

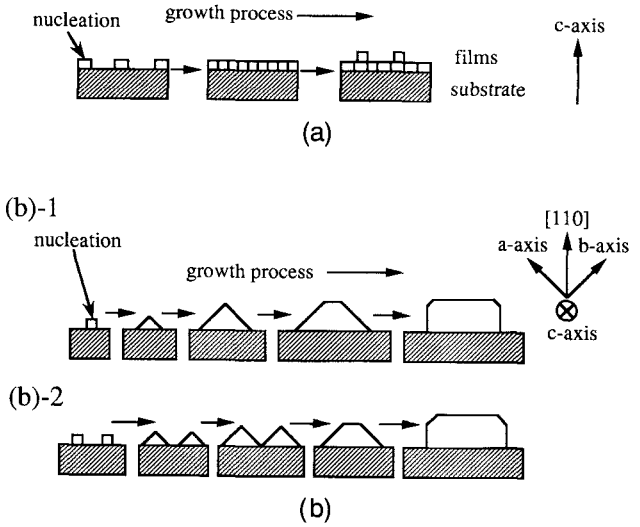


FIG. 9. A schematic diagram of the grain growth process at the initial stage. (a) Initial stage growth of the *c*-axis-oriented Bi–Sr–Ca–Cu–O grain. (b) Initial stage growth of the (110)-oriented Bi–Sr–Ca–Cu–O grain. There are two types of growth processes; one depends on the coarsening of (b)-1, and the other is related to the coalescence of (b)-2.

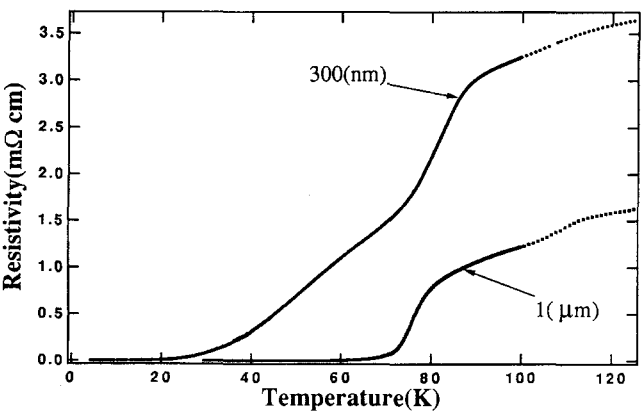


FIG. 10. $\rho$-$T$ curves of the films of the film thickness 300 nm and 1 $\mu$m.