

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 March 2007 (29.03.2007)

PCT

(10) International Publication Number
WO 2007/034763 A1

- (51) International Patent Classification:
G11B 5/73 (2006.01) *G11B 5/82* (2006.01)
- (21) International Application Number:
PCT/JP2006/318471
- (22) International Filing Date:
12 September 2006 (12.09.2006)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2005-276758 22 September 2005 (22.09.2005) JP
60/723,953 6 October 2005 (06.10.2005) US
- (71) Applicant (for all designated States except US): **SHOWA DENKO K.K.** [JP/JP]; 13-9, Shibadaimon 1-chome, Minato-ku, Tokyo, 1058518 (JP).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **AIDA, Katsuaki** [JP/JP]; c/o SHOWA DENKO HD K.K., 5-1,

Yawata Kaigan dori, Ichihara-shi, Chiba, 2900067 (JP).
MACHIDA, Hiroyuki [JP/JP]; c/o SHOWA DENKO HD K.K., 5-1, Yawata Kaigan dori, Ichihara-shi, Chiba, 2900067 (JP).

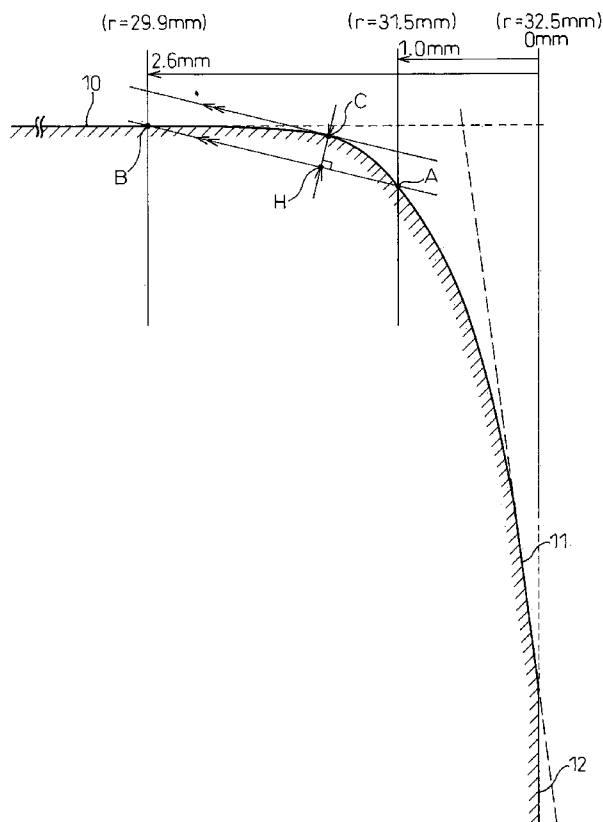
(74) Agents: **AOKI, Atsushi** et al.; SEIWA PATENT & LAW, Toranomon 37 Mori Bldg., 5-1, Toranomon 3-chome, Minato-ku, Tokyo 1058423 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: SILICON SUBSTRATE FOR MAGNETIC RECORDING MEDIUM AND MAGNETIC RECORDING MEDIUM



(57) Abstract: A silicon substrate for a magnetic recording medium in which the substrate has a chamfered surface between its data-carrying surface (surface) having layers including a magnetic layer and its outer peripheral end surface (straight surface) is provided. The silicon substrate is characterized in that a dub-off value at an outer peripheral side of the data-carrying surface is not more than 120A wherein when a first position (A) is a point on the data-carrying surface radially and inwardly positioned at 1mm from the outer peripheral end surface of the substrate, a second position (B) is a point on the data-carrying surface radially and inwardly positioned further at 1.6mm from the first position (A), and further, provided that a perpendicular line is dropped to a straight line (A-B) connecting the first position (A) with the second position (B), a third position (C) is a point crossing the perpendicular line with the data-carrying surface and a fourth position (H) is a point crossing the perpendicular line with the straight line (A-B), the dub-off value is defined as the maximum value of the distance (C - H) between the third position (C) and the fourth position (H). Using this silicon substrate, a small avalanche point, for a higher recording density, can be obtained for the magnet recording medium. A magnetic recording medium using this silicon substrate is also provided.

WO 2007/034763 A1



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*