

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
21 April 2005 (21.04.2005)

PCT

(10) International Publication Number
WO 2005/036536 A2

(51) International Patent Classification⁷: **G11B 7/00**

(21) International Application Number:
PCT/IB2004/051994

(22) International Filing Date: 6 October 2004 (06.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03103741.9 9 October 2003 (09.10.2003) EP

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MARTENS, Hubert, C., F.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **TIEKE, Benno** [DE/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **WOERLEE, Pierre, H.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **VAN DEN OETELAAR, Ronald, J., A.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **KOPPERS, Wilhelmus, R.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(74) Agent: **UITTENBOGAARD, Frank**; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

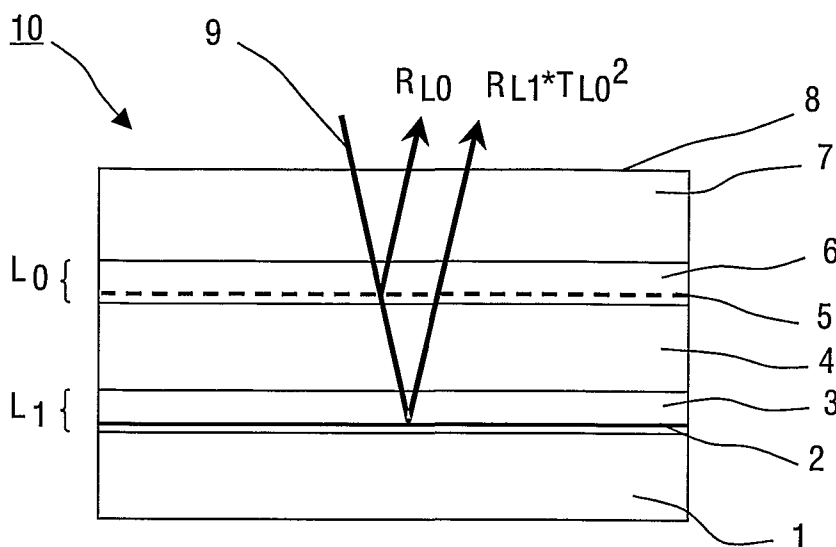
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, 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).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations 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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM,

[Continued on next page]

(54) Title: DUAL-STACK OPTICAL DATA STORAGE MEDIUM FOR WRITE ONCE RECORDING



(57) Abstract: A dual-stack optical data storage medium (10) for write-once recording using a focused radiation beam (9) having a wavelength λ of approximately 655 nm is described. The radiation beam enters through an entrance face (8) of the medium (10) during recording. The medium comprises at least one substrate (1, 7) with present on a side thereof: a first recording stack (6), named L0, comprising a write-once type L0 recording layer, said first recording stack L0 having an optical reflection value R_{L0} and an optical transmission value T_{L0} , a second recording stack (3), named L1, comprising a write-once type L1 recording layer, said second recording stack L1 having an

effective optical reflection value $R_{L1\text{eff}}$. The first recording stack (6) is present at a position closer to the entrance face (8) than the second recording stack. (3). A transparent spacer layer (4) is sandwiched between the recording stacks (3, 6). The reflection values R_{L0} and $R_{L1\text{eff}}$ are within the following ranges: $0.12 \leq R_{L0} \leq 0.18$ and $0.12 \leq R_{L1\text{eff}} \leq 0.18$ by which an improved sensitivity of the dual stack medium is achieved.



PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

— without international search report and to be republished upon receipt of that report

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.