



- (51) International Patent Classification:
G11B 5/73 (2006.01)
- (21) International Application Number:
PCT/US2013/061505
- (22) International Filing Date:
24 September 2013 (24.09.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/706,314 27 September 2012 (27.09.2012) US
61/706,317 27 September 2012 (27.09.2012) US
61/733,202 4 December 2012 (04.12.2012) US
- (71) Applicants: SEAGATE TECHNOLOGY LLC [US/US];
10200 South De Anza Boulevard, Cupertino, CA 95014
(US). NATIONAL UNIVERSITY OF SINGAPORE
[SG/SG]; 21 Lower Kent Ridge Road, Singapore 119077
(SG).
- (72) Inventors; and
- (71) Applicants : LI, Huihui [CN/SG]; Blk E4, #01-06, 4 En-
gineering Drive 3, NUS, Kent Ridge, Crescent, Singapore
117576 (SG). JU, Ganping [US/US]; 1122 Baur Court,
Pleasanton, CA 94566 (US). PENG, Yingguo [CN/US];
508 Andreas Court, San Ramon, CA 94582 (US). CHEN,
Jingsheng [SG/SG]; BLK604, #07-199, Jurong West St.
62, Singapore 640604 (SG).
- (74) Agent: DAVIS, Clara; Hollingsworth Davis, LLC, 8500
Normandale Lake Blvd., Suite 320, Minneapolis, MN
55437 (US).
- (81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report (Art. 21(3))

(54) Title: MAGNETIC STACK INCLUDING TIN-X INTERMEDIATE LAYER

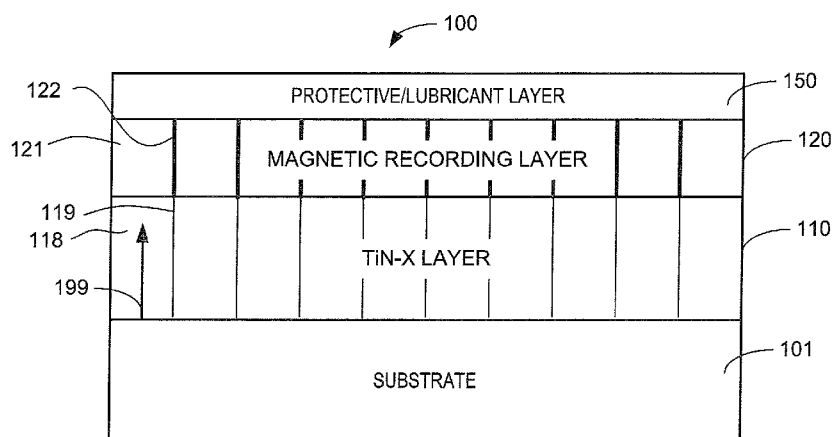


Fig. 1a

(57) Abstract: A magnetic stack includes a substrate, a magnetic recording layer, and a TiN-X layer disposed between the substrate and the magnetic recording layer. In the TiN-X layer, X is a dopant comprising at least one of MgO, TiO, TiO₂, ZrN, ZrO, ZrO₂, HfN, HfO, AlN, and Al₂O₃.