

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 June 2009 (11.06.2009)

PCT

(10) International Publication Number
WO 2009/073857 A1

(51) International Patent Classification:

G11B 17/00 (2006.01)

(21) International Application Number:

PCT/US2008/085728

(22) International Filing Date:

5 December 2008 (05.12.2008)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/992,972 6 December 2007 (06.12.2007) US
61/052,131 9 May 2008 (09.05.2008) US

(71) Applicant (for all designated States except US): INTE-
VAC, INC. [US/US]; 3560 Bassett Street, Santa Clara, CA
95054 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): FAIRBAIRN,
Kevin, P. [US/US]; 14810 Sky Lane, Los Gatos, CA
95032 (US). BARNES, Michael, S. [US/US]; 12215
Santa Teresa Drive, San Ramon, CA 94583 (US).

BLUCK, Terry [US/US]; 3128 Butte Street, Santa Clara,
CA 95051 (US). XU, Ren [US/US]; 7342 Alexis Manor
Place, San Jose, CA 95120 (US). LIU, Charles [US/US];
1913 Deodara Drive, Los Altos, CA 94024 (US). KERNS,
Ralph [US/US]; 890 Regent Court, San Carlos, CA 94070
(US).

(74) Agent: BACH, Joseph; Nixon Peabody LLP, 401 9th
Street, N.W., Suite 900, Washington, DC 20004 (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, BR, BW, BY, BZ, CA,
CH, 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, KM, 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, PG, PH, PL, PT,
RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, 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,

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR COMMERCIAL FABRICATION OF PATTERNED MEDIA

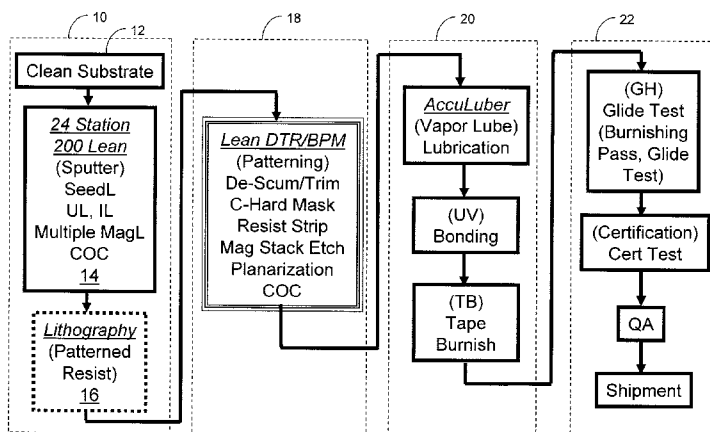


Figure 1

- | | |
|---------------------------------------|--|
| 12 Nettoyer le substrat | 20 AccuLuber |
| 24 Poste | (Lubrifiant en vapeur) |
| 200 Poudre | Lubrification |
| 14 (Gravure ionique) | (UV) |
| SeedL | Liaison |
| UL, IL | (TB) |
| Multiple MagL | Brunissage de bande |
| COC | 22 (GH) |
| 16 Lithographie (réservée structurée) | Essai de glissement |
| 18 DTR/BPM pauvre | (passe de brunissage, essai de glissement) |
| (structuration) | (Certification) |
| Décapage/ajustement | Test de certification |
| Masque dur C | Contrôle Qualité (QA) |
| Bande de réserve | Expédition |
| Gravure d'empilement magnétique | |
| Planarisation | |
| COC | |

(57) Abstract: A system is provided for etching patterned media disks for hard drive. The modular system may be tailored to perform specific processes sequences so that a patterned media disk is fabricated without removing the disk from vacuum environment. In some sequence the magnetic stack is etched while in other the etch is performed prior to forming the magnetic stack. In a further sequence ion implantation is used without etching steps. For etching a movable non-contact electrode is utilized to perform sputter etch. The cathode moves to near contact distance to, but not contacting, the substrate so as to couple RF energy to the disk. The substrate is held vertically in a carrier and both sides are etched serially. That is, one side is etched in one chamber and then in the next chamber the second side is etched.



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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*