PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G11B 5/66	A1	(11) International Publication Number: WO 99/40575
		(43) International Publication Date: 12 August 1999 (12.08.99)

(21) International Application Number: PCT/US99/02670

(22) International Filing Date: 10 February 1999 (10.02.99)

(30) Priority Data:
60/074,253 10 February 1998 (10.02.98) US

(71) Applicant *(for all designated States except US)*: SEAGATE TECHNOLOGY, INC. [US/US]; 920 Disc Drive, P.O. Box 66360, Scotts Valley, CA 95067-0360 (US).

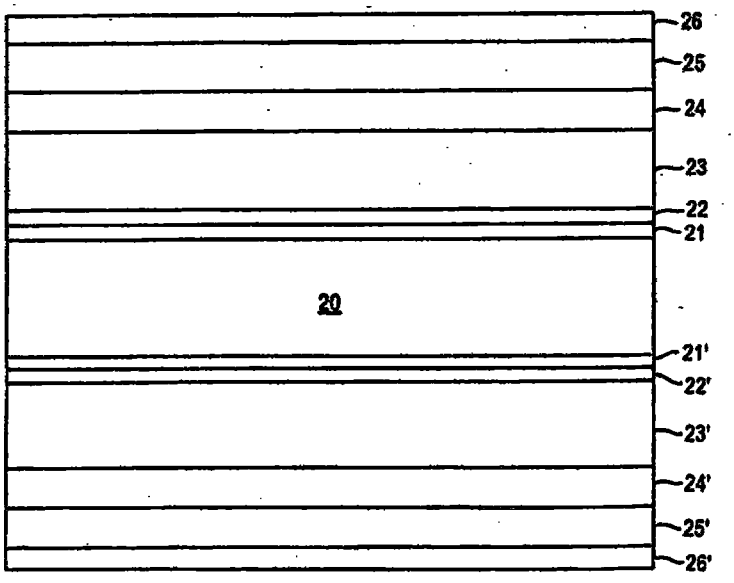
(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: WU, Zhong, Stella [CN/US]; 45130 Pawnee Drive, Fremont, CA 94539 (US). RANJAN, Rajiv [IN/US]; 6620 Creekview Court, San Jose, CA 95120 (US).

(74) Agents: RUBINSON, Gene, Z. et al.; McDermott, Will & Emery, 600 13th Sreet, N.W., Washington, DC 20005-3096 (US).

(81) Designated States: DE, GB, JP, KR, SG, US.

Published
With international search report.

(54) Title: MAGNETIC RECORDING MEDIUM WITH PATTERNED SUBSTRATE



(57) Abstract

Magnetic recording media exhibiting improved Hr, SNR and S*, suitable for high area recording density, are obtained by forming a substantially uniform patterned Al or Al alloy layer (21, 21') on a non-magnetic substrate (20) which is substantially replicated in subsequently applied layers (22, 22', 23, 23', 24, 24', 25, 25', 26, 26') to form a data zone. Embodiments include sputtering depositing an Al or Al alloy layer (21, 21') on the substrate (20) and anodizing the sputtered layer (21, 21') to form a plurality of substantially uniform hexagonal cells comprising aluminum oxide. The hexagonal pattern is replicated in a subsequently deposited and epitaxially grown magnetic layer (24, 24') such that the magnetic grains are separated, thereby reducing magnetostatic interactions therebetween.