

Title (en)
LASER SURFACE TREATMENTS FOR MAGNETIC RECORDING MEDIA

Title (de)
OBERFLÄCHENBEHANDLUNG MITTELS LASERBESTRAHLUNG VON AUFNAHMETRÄGERN

Title (fr)
TRAITEMENTS DE SURFACE AU LASER POUR SUPPORTS D'ENREGISTREMENT MAGNETIQUES

Publication
EP 0853528 A4 20020130 (EN)

Application
EP 95931562 A 19950822

Priority
US 9510697 W 19950822

Abstract (en)
[origin: WO9707931A1] A surface treatment process employing pulsed laser energy enables selective texturizing and polishing of non-magnetizable substrate disks used in fabricating magnetic reading and recording disks (16). Substrate surfaces (44, 92, 100, 119) are texturized over dedicated head contact zones (32, 94, 104, 120, 128) to form multiple nodules (74, 98, 112) that are highly uniform to precisely control surface roughness. Laser polishing of data zones (36, 106, 122) causes localized flow of the substrate material, to remove the residual scratches of mechanical polishing without altering the non-magnetic character of the substrate at large. Between the data zones (36, 106, 122) and contact zones (32, 94, 104, 120, 128), transition zones (34, 108) can be formed by selectively graduating the nodule heights in the radial direction. The rounded structure of the nodules (74, 98, 112) increases surface resistance to intended or incidental transducing head contact. Removal of residual scratches enhances resistance to corrosion and improves signal quality, since subsequent layers, including the thin film recording layer and the protective carbon layer, tend to replicate the substrate surface topography.

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IPC 8 full level
B24B 1/00 (2006.01); **G11B 5/73** (2006.01); **G11B 5/82** (2006.01); **G11B 5/84** (2006.01); **G02B 6/36** (2006.01)

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