

ABSTRACT

USE SPECIAL ION SOURCE APPARATUS AND IMPLANT WITH MOLECULAR IONS TO PROCESS HDD (HIGH DENSITY MAGNETIC DISKS) WITH PATTERNED MAGNETIC DOMAINS

A method and apparatus for manufacturing magnetic storage media is provided. A structural substrate is coated with a magnetically susceptible material, and a patterned resist layer is formed over the magnetically susceptible material. Atom groups are directed toward the substrate, penetrating the resist and implanting into the magnetically susceptible layer. Thick portions of the resist prevent implantation in some areas to form a pattern of magnetic properties on the substrate. Energy and composition of the atom groups, thickness and hardness of the resist, and lattice energy of the magnetically susceptible material may all be adjusted to yield desired fragmentation and implantation of the atom groups, including in some embodiments mere impact on the surface without implanting. A protective layer and a lubricating layer are formed over the patterned magnetically susceptible layer.

Fig. 6A