

A METHOD OF TEXTURING THE SURFACE OF A BRITTLE MATERIAL

ABSTRACT

A process is disclosed for creating an array of bumps to texture a brittle surface, such as a glass substrate (12) for data recording disks. The texturing process uses a laser (10) to provide pulses of proper energy fluence to the brittle glass surface (14, 16) to produce a plurality of raised bumps in the surface. The bump creation is accomplished without unwanted micro-cracking or ejection of surface material by limiting the laser pulse fluence to a value in a narrow operating region discovered below the abrupt thermal shock fluence threshold for the brittle surface material. The process is also applicable to other brittle surface textures, such as those intended for use as "stamping surfaces" for the contact reproduction of the negative of a surface pattern, such as an optical disk.

Fig. 1