Laser scanning interface microscope

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Abstrak

A nonconductor optical technique, having lateral resolution of about 5 μm and vertical resolution of about 0.09 μm, for surface profile (roughness) measurement was studied. It based on a heterodyne interferometer in which two orthogonal polarized beams of slightly different frequencies were used in a modified interference microscope. The beams scanned the surface of a work piece, and the reflected beams were allowed to interfere with one another. The phase of the beat frequency of the interfering return beams is directly proportional to the surface height. The result of a surface measurement include graphical displays of surface profile, roughness (Ra), root mean square (rms) and peak to valley (P-V) value.