

Surface Wave Propagation in Thin Silver and Aluminium Films

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Three kinds of acoustic waves are known: bulk waves, pseudo-surface waves and surface waves. A plane wave section of a constant-frequency surface of a film serves as a hint for the expected nature. Calculations based on slowness curves of films reveal frequency ranges where each type of acoustic waves is predominant. Dispersion curves and displacement acoustic waves are calculated and commented in each frequency interval for different coated materials. Both dispersion and sagittal elliptical displacement are sensitive and depend on diagrams mentioned above. Silver and aluminium thin films having different anisotropy ratios, namely 2.91 and 1.21, are retained for illustration.

Key words: Surface Acoustic Waves; Propagation; Dispersion; Thin Films; Mechanical Properties.