

## AN X-RAY OPTICAL STUDY OF LAYERED PHASE IN Au-Al THIN FILM COUPLES

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### Abstract

Specular X-ray reflection originating at grazing incidence at the boundary planes of thin laminated structures interfere to give the known Kiessig fringes. The change of this interference pattern during diffusional intermixing in thin multi-layers is used for the study of phase formation in Au–Al thin film couples. Layered growth of Au<sub>2</sub>Al obeying a parabolic growth relation was observed in the temperature range from 560 to 80 °C. The activation energy of the process was found to be 1.05 eV.