

Microscopic ATR Measurement of Thin Polyimide Film on Silicon Substrates

The micro-ATR method, which can measure in situ, is extremely convenient for measuring the processing film on the surface of microelectronic components. The following is an example of measuring a thin polyimide film on a silicon substrate (300 μm thick), which is normally somewhat difficult to do. Fully keeping the sample surface and prism surface in contact without destroying the fragile silicon substrate requires that the packing on which the sample is placed be horizontal. Failing to do so will damage the substrate. In our example, we used Parafilm, which is thin and has elasticity, as our packing material to successfully measure the silicon substrate. The micro-ATR method uses a single reflection, but by fully keeping the prism and sample surface in contact, it is possible to get the excellent spectrum you see in Figure 1.

<Measurement conditions>

Attachment: Micro FT/IR
Micro ATR
ZnSe prism
Accumulation: 100
Resolution: 8 cm^{-1}
Aperture: 100 μm x 100 μm

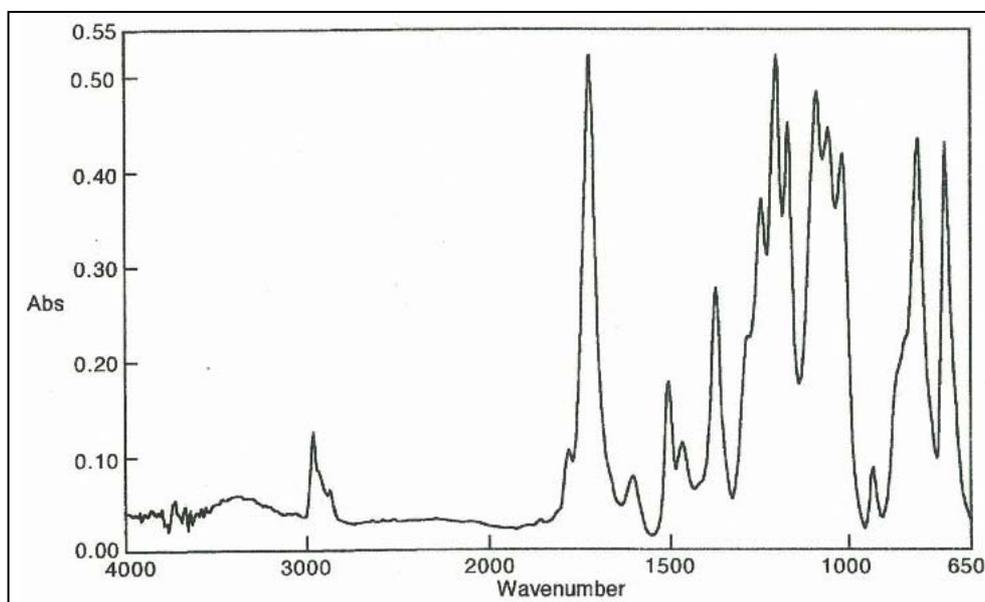


Figure 1. ATR Spectrum of a Polyimide Layer on a Silicon Substrate