

## Silicon Wafer analysis by using of Full vacuum FT/IR spectrometer

Silicon Wafer has a high refractive index and also a high surface reflectance, which may causes such symptom that the reflected light from surface returns to interferometer when the sample is set at vertical position against the light direction, and then the returned light is irradiated to the sample again after hitting the beam splitter of interferometer. This is the main reason of the noise on spectrum due to water vapor since the length of optical path with sample is different from the length without sample.

For this case, there was a solution which was to set the sample at some angle off from vertical position. This was considered to reduce such noise problem.

However, there is a much better solution, which is to use a full vacuum FTIR system. Even the sample is placed vertically against the light, the spectrum without any noise influence due to water vapor can be obtained easily because optical system is in vacuum condition.

### Measurement conditions

Resolution: 4  $\text{cm}^{-1}$   
 Accumulation: 16 times  
 Detector: TGS

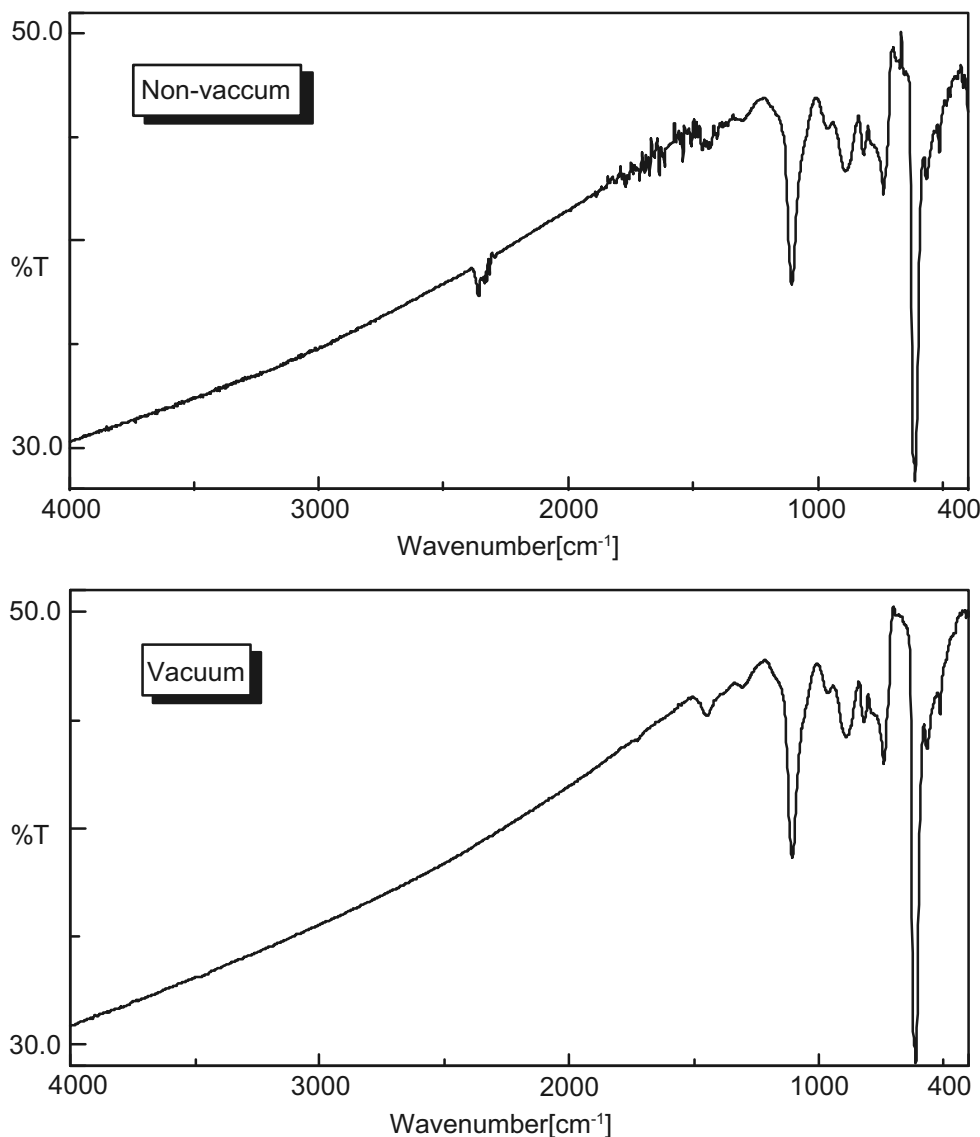


Fig. 1. Spectra of Epitaxyl Layer on Silicon Wafer