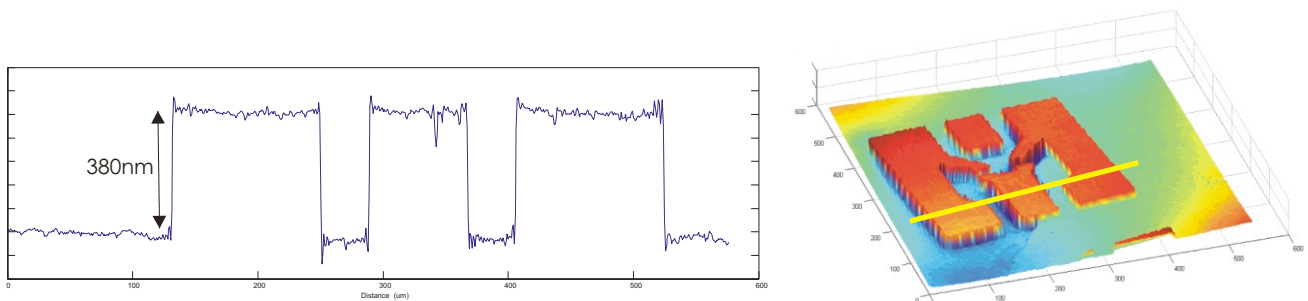


The Phase Focus Virtual Lens® Materials Characterisation

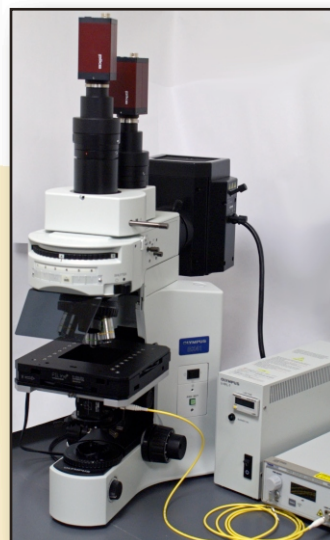
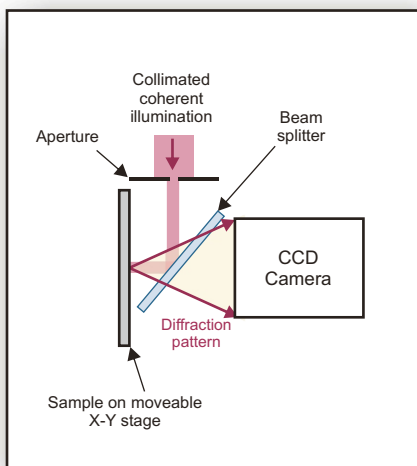
Non-contact metrology methods (e.g. white light interferometry) are unable to distinguish between phase changes that result from variations in surface height (surface topography), and from the Phase Shift on Reflection (PSoR) caused by material variations.

Conventional methods designed to measure PSoR (e.g. ellipsometry) return values that are averaged over relatively large areas.

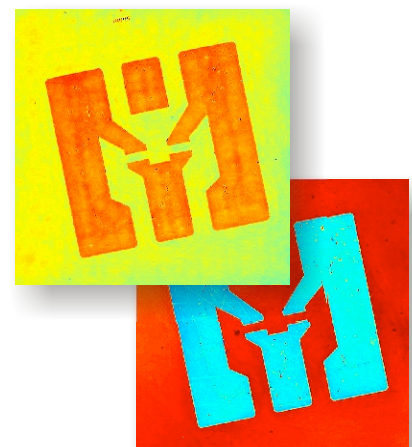
The Virtual Lens is able to separate PSoR from surface topography with lateral spatial resolution $<1\mu\text{m}$ and height resolution $<1\text{nm}$.



Gold deposition on a III-V semiconductor substrate. Calculated height profile (left) is shown for the line marked in yellow on the 3D surface topography map (right).



The Virtual Lens can reconstruct data acquired using an extremely simple optical geometry (left) or can be integrated with existing microscopy or metrology instrumentation (right).



Height (top) and material properties (bottom) are independently calculated and displayed using separate false-colour scales.