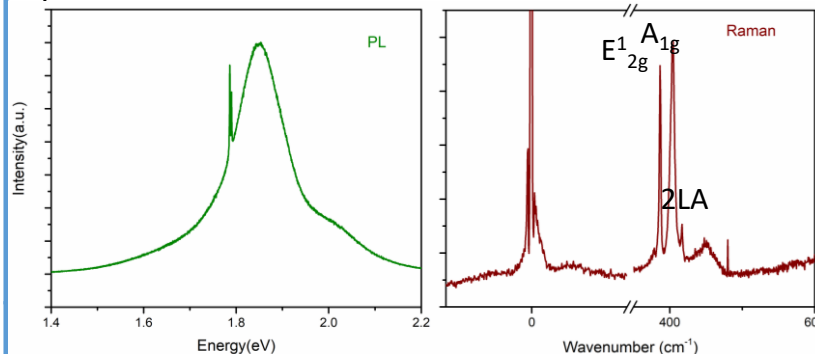


Sample details: Growth done on two-inch backside-scribed double side polished sapphire. Quarter of the wafer is sent to user.

Shipping: Sample is face down in the container and sealed in argon filled glove box.

- Position at the center of the wafer where measurements were done

PL/Raman



PL demonstrates luminescent peak at 1.85 eV suggesting monolayer film. Raman peak, especially at low wavenumbers indicate formation of monolayer film.

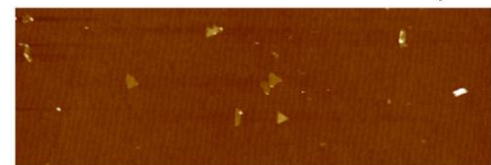
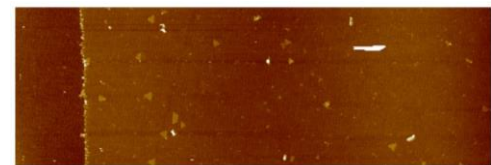
PL conditions:

Laser wavelength: 532 nm
Laser- 11 mW Acquisition time- 10 s
(2 times)
Objective - 100X Grating - 300 gr/mm

Raman conditions:

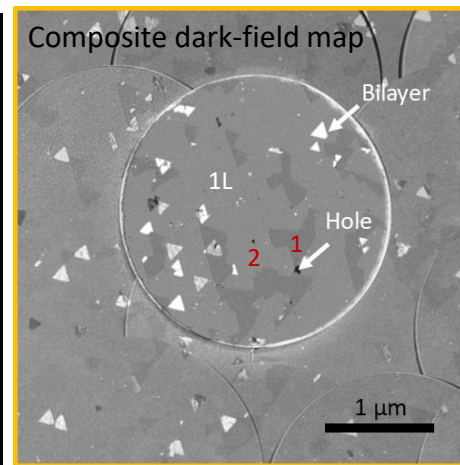
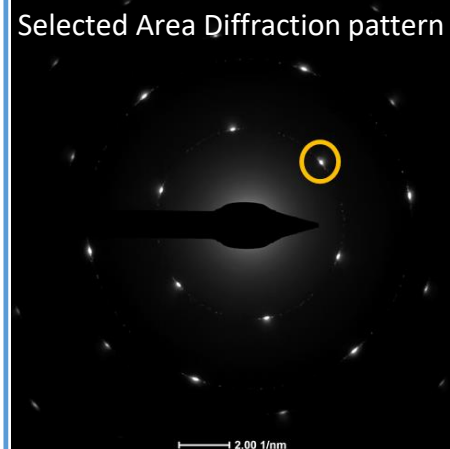
Laser wavelength: 532 nm
Laser- 11 mW Acquisition time- 20 s
(2 times)
Objective - 100X Grating - 1800 gr/mm

AFM



AFM shows the films are coalesced monolayer with minor regions of bilayer growth and particles.

TEM - dark field imaging



The DF-map of MoS₂ transferred on Quantifoil Cu grid shows two contrasting regions, 1 and 2, in the monolayer MoS₂. This corresponds to anti-phase domains present in the films.