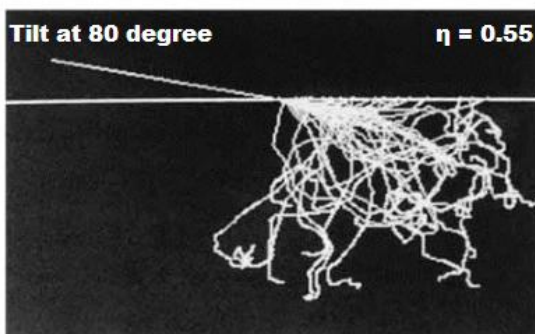
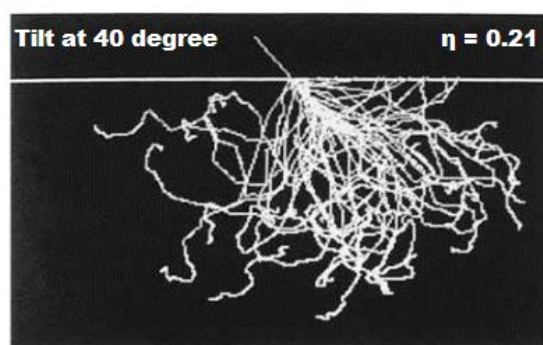
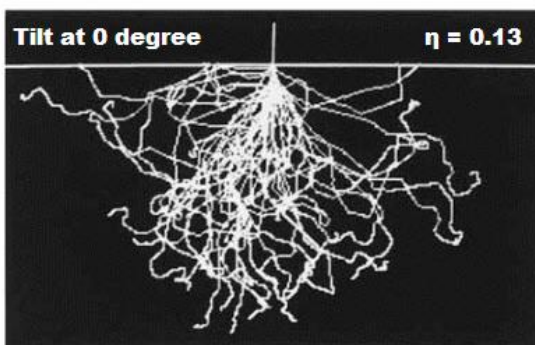
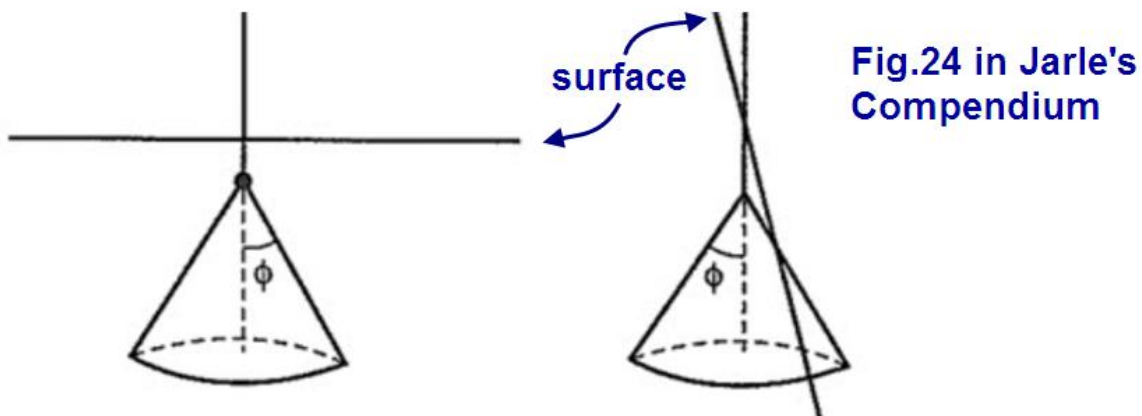


4.2.3 Topographic Contrast

One of the major SEM application is to study the surface features, i.e. topography, of a sample. As we discussed in Contrast Mechanism (4.2) in order to obtain a SEM image, we must have some variation in the obtained SEM signals from the different parts of the specimen.

As we discussed before, both the backscattering coefficient (η) and the secondary electron coefficient (δ) are increasing as the specimen is titled, due to the shape of the interaction volume and its relationship to the surface of the specimen as shown in below figures, i.e. for the tilted specimen, the more electrons to be scattered out of the specimen, rather than further into the specimen.



Monte Carlo simulations of the beam tilt effect on the interaction volume and the backscattering coefficient (η) of Aluminium at 20 kV.