

## **Non specular behavior of low KV STEM on thick samples**

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Which side of a TEM sample is directly exposed to the electron beam?

This is a "not important" question for a standard TEM/STEM analysis, even if it is done in an SEM at 30 KV (Low KV STEM). But, on the other hand, when the thickness of the TEM lamella greatly exceeds the electron mean free path, the obtained images depend from which side of the TEM sample is loaded toward the incident electron beam. In fact the STEM images obtained at low KV on a thick sample depend on the characteristics included in a thickness comparable to the electron mean free path. This non specular behavior of the STEM analysis in a thick sample is very useful for the lamella preparation of non SEM visible features, for example crystallographic defect.