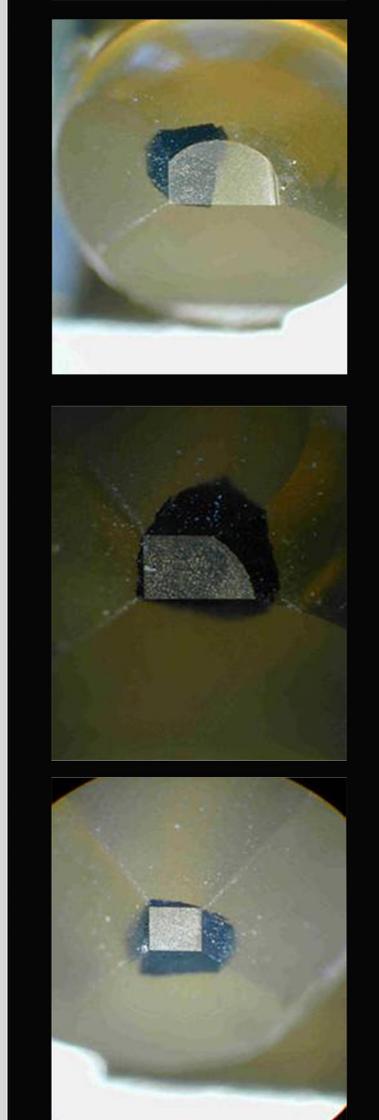
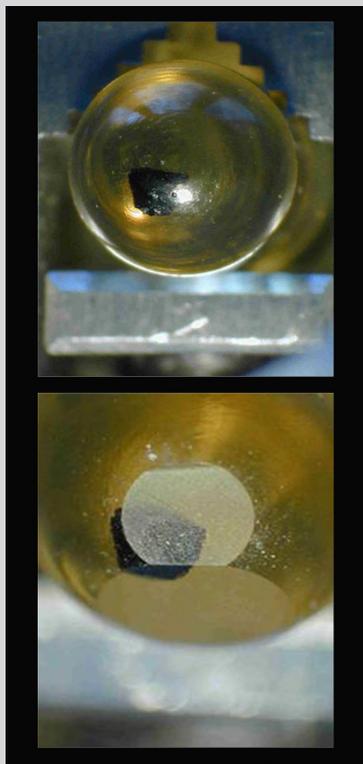


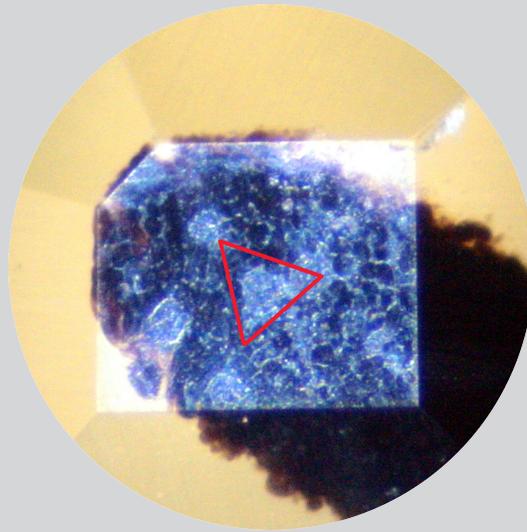
Living up to Life



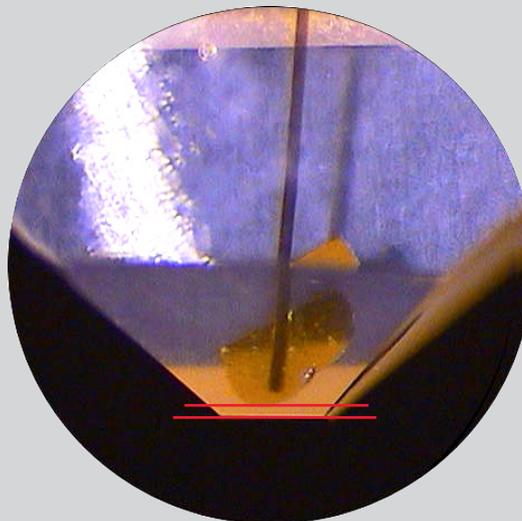
# EM Sample Preparation Specimen Trimming

July 2014

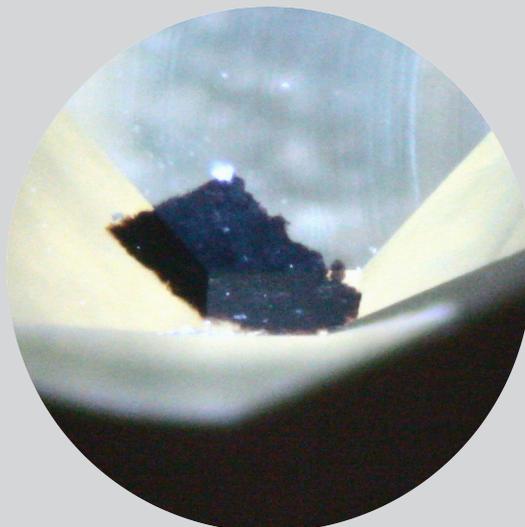




Front face observation to determine the area of interest



Perpendicular viewing for distance definition between sample and front face of the embedding material

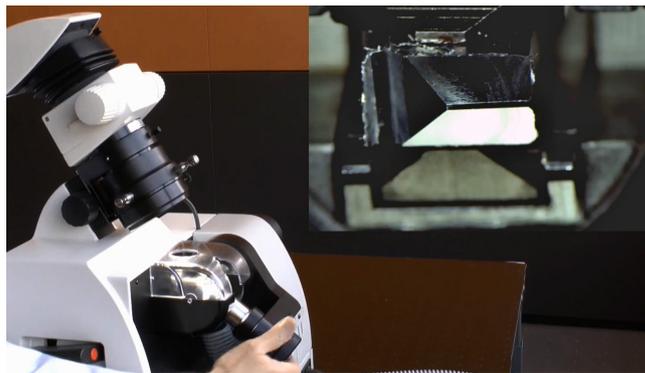


Observation of the sample during milling

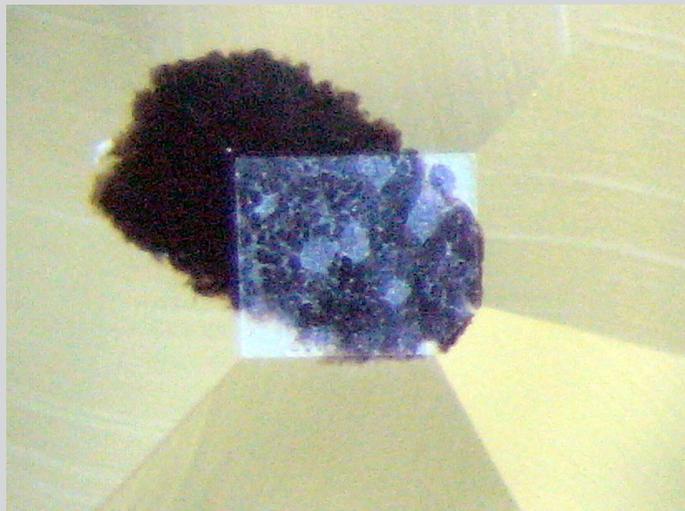
# Specimen Trimming is needed prior to Ultramicrotomy

Before ultrathin sectioning a sample with an ultramicrotome it has to be pre-prepared. For this pre-preparation, special attention must be paid to the sample size (size of the section), location of the sample (targeting) and accuracy of the block-face edges. This process is generally called trimming, wherein the sample is shaped mainly to a frustum of a pyramid. For instance, to achieve the optimum sectioning results of biological embedded samples, the surrounding embedding material has to be entirely removed. Thus, only the sample is present in the block-face and a “homogeneous” material can be sectioned. Especially when sectioning with a glass knife, the embedding material would influence the section results due to the different compression behaviour. Additionally a further effect on the sectioning results is seen in the edges of the block-face. Only two exact parallel trimmed edges produce a straight ribbon of sections. Furthermore, the sharpness of the trimmed edge has a direct relationship to the section thickness which can be achieved. Finally, a rule of thumb should be mentioned: “The smaller the block-face is trimmed, the easier the sectioning performance will be.”

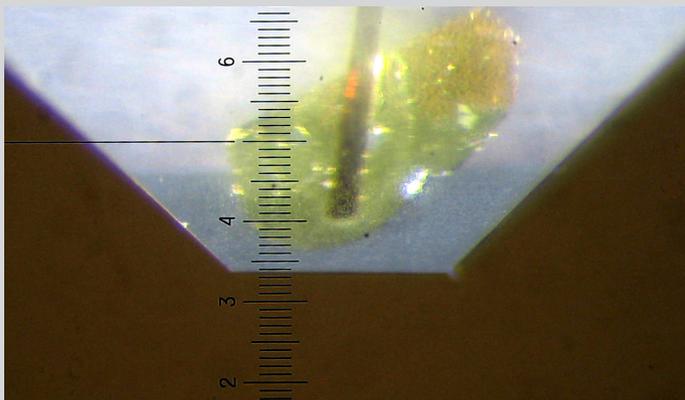
Conventional trimming of embedded samples involves the use of razor blades and a great deal of skill by the ultramicrotommist. The shape of the block face and the straightness of the edges of the trimmed sample has a profound effect on the sectioning characteristics. Parallel edges top and bottom are a must. To achieve this quickly and safely is challenging and potentially hazardous with a razor blade especially on industrial materials. Important specimens can be destroyed by a minor inaccuracy in trimming.



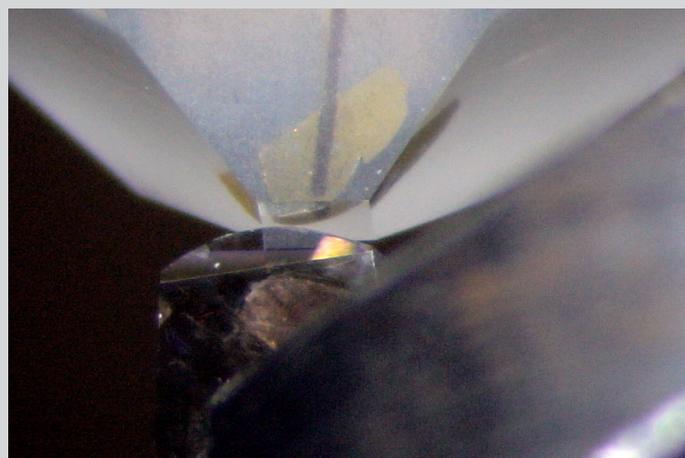
**Click here to view the video  
"Trimming of metals"**



Liver sample trimmed (front face observation)



Embedded Si sample (perpendicular view with distance definition graticule)



Diamond miller used for embedded Si sample

# Leica EM TRIM2

## Specimen Trimming Device for TEM, SEM, LM

With the Leica EM TRIM2 a perfect pyramid and cutting face of both biological and industrial samples can be produced safely, rapidly and accurately within less than 60 seconds.



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