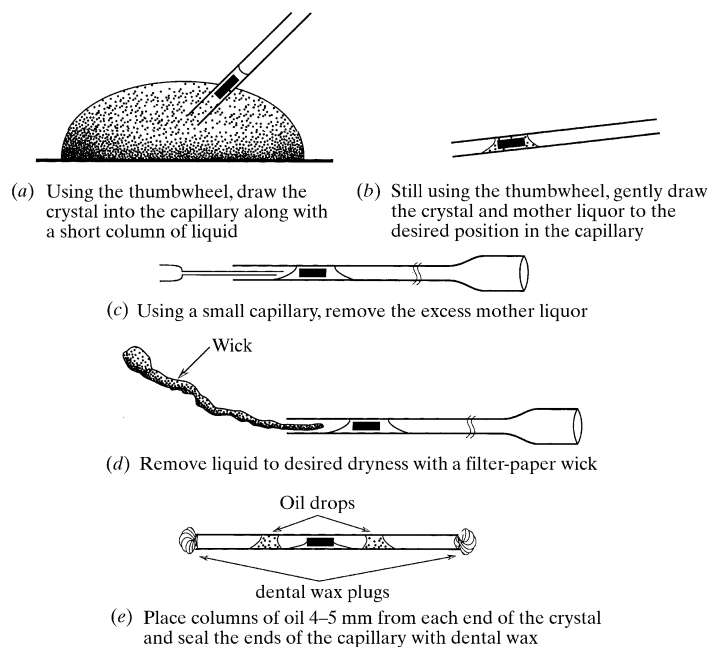


5. CRYSTAL PROPERTIES AND HANDLING

References

**Figure 5.1.2.2**

Mounting a crystal in a capillary.

millimetres away from the crystal. This is usually necessary if capillaries larger than 1 mm in diameter are used. A small strip of filter paper may also be placed in the capillary and then dampened with mother liquor. Both methods allow the moisture level in the crystal to be maintained. A reasonably good first seal may consist of a short column of light vacuum oil on both sides of the crystal, again, a few millimetres away from it. At this time, a ring of molten dental wax is placed along the capillary beyond the oil drop nearest the flared end of the capillary, and the capillary is then cut or broken just beyond the wax. The final seal may then be accomplished using molten dental wax or perhaps even epoxy at each end of the capillary. The diffraction equipment and arrangement will dictate the position of the crystal in the capillary, and this should be accommodated before the final seals are put in place. The geometry of the capillary could aid in preventing slippage of the wedged crystal during data collection (Åkervall & Strandberg, 1971). Alternatively, a specific crystal coating which effectively glues the crystal to the interior of the capillary can be used (Rayment *et al.*, 1977). The capillary with its crystal is now ready to be placed on the platform of choice for placement on the goniometer head in final preparation for diffraction experiments. Fig. 5.1.2.2 illustrates the steps in mounting a crystal in a capillary in preparation for the X-ray experiment.

The above method deals only with crystals which are to be mounted at or near room temperature for experiments at or near room temperature. An alternative approach is to grow a crystal in a capillary (Åkervall & Strandberg, 1971), which could eliminate the need to manipulate the crystal manually. When crystals have been grown in the presence of detergents or gels, specific methods may be required for mounting (McRee, 1993). The appropriate procedure for flash cooling of crystals is detailed in Part 10.

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