

part of $60R$, comprising 20 layers, is nothing but a common structure $4H$. The second part will be generated from the first part if a single stacking fault is created (Agrawal, 1970), and similarly part three. Therefore, on the basis of energy considerations alone, the structure $[(22)_4 13]_3$ should occur, not the determined structure $[(22)_4 1223]_3$, as some energy is required to form the first part of the latter structure from the common polytype $4H$. Agrawal (1972) has calculated E_{ST} for all rhombohedral polytypes of known structures of cadmium iodide and has explained their formations in terms of inclined dislocations made up of screw dislocations along the c axis and partial edge dislocations in the basal plane.

Similarly, E_{ST} has been calculated for the hexagonal structures of cadmium iodide and other substances. According to these calculations, all the hexagonal CdI_2 polytypes should belong to one of two structural series, *viz.* $[(22)_n 11]$ and $[(22)_n 1111]$. Out of 160 polytypes of CdI_2 reported so far (Trigunayat & Chadha, 1971), only 5 have been found to belong to the $[(22)_n 11]$ series and 4 to the

$[(22)_n 1111]$ series. In fact, as the energy difference between various stackings of a polytype is small, the crystal may have any structure depending upon the various conditions such as temperature, concentration, *etc.* at the time of growth. On the basis of stacking-fault energy alone, higher polytypes should occur, which is contrary to the experimental results. Therefore, the E_{ST} criterion alone is not of much importance in finding out the atomic structures of polytypes.

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Laboratory Note

J. Appl. Cryst. (1973), 6, 45

Flameless mounting of crystals in capillaries

There are occasions such as when working with a microscope or in a dry box when it is not practical to use a flame to prepare fibers and capillaries for crystal mounting. In such cases a simple heating element may be effective. It consists of a loop of nichrome wire (15–20 gauge) 1 cm in length, silver-soldered to a short length of common electrical cord. The temperature at the tip of the heating element may be controlled by a rheostat (Variac). Greater control is gained by connecting the rhe-

ostat to a step-down transformer with a 5V secondary.

Occasionally crystals are mounted on glass fibers having the same or greater diameter than the crystal. With the help of a microscope, the nichrome probe can be used to melt the tip of the fiber and pull out the melted zone to give a sturdy portion with the desired dimensions [Fig. 1(a)]. The fiber can usually be cut between the fingernails to the right length.

We frequently mount crystals in Lindemann-glass capillaries and the following procedure has proved useful. The tip of the capillary is removed and a fleck of vaseline-beeswax (Milledge, 1969) placed on the end. The heating element warms the wax so that it is drawn into the capillary. The end may then be sealed with the same heating element. The crystal (+ mother liquor) is inserted in the large end of the capillary with a fine glass rod (*ca.* 0.1 mm. diameter) until it is embedded in the soft wax. The capillary is cut to the desired length with the fingernails and dressed with a metal probe. With care, even quite fragile crystals can be mounted using this procedure.

The capillary can be sealed with the heating element. Alternatively, when assurance of a good seal is required, small amounts of the soft wax may be placed on the open end and heated until a wax seal forms. The glass capillary may then be sealed as above [Fig. 1(b)].

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Crystallographers

Professor István Náray-Szabó, Central Research Institute for Chemistry of the Hungarian Academy of Sciences, died on 16 September 1972. Professor Náray-Szabó, who was born in 1899, was an early pupil of Sir Lawrence Bragg and a pioneer of X-ray crystallography in Hungary. He was the author of a book on inorganic crystal chemistry and was a member of the Hungarian National Committee for Crystallography.

Dr Michael Hart, University of Bristol, has been appointed British Co-editor of the *Journal of Applied Crystallography* effective 1 January 1973. He replaces Mr. H. P. Rooksby who was one of the progenitors of the *Journal* and served as British Co-editor from its founding in 1967 until the present. Mr. Rooksby retired from the G. E. Company Limited, Wembley, in 1971 and is at present a visiting professor in the University of Leeds.

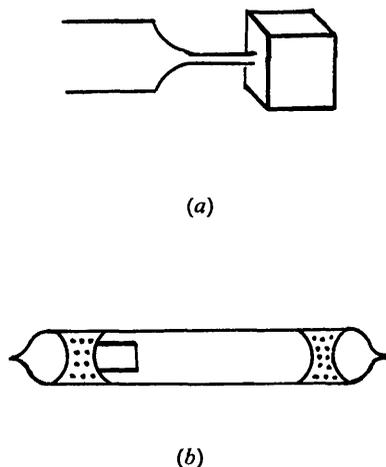


Fig. 1. (a) Pulling and (b) sealing The capillary.