Laboratory Note

Rapid orientation and mounting of spherical crystals for crystal structure analysis

The ease of application and accuracy of the spherical absorption correction for single-crystal X-ray diffraction data are well known. However, it is very time consuming to orient a spherical crystal and maintain that orientation while mounting it on the glass fiber; thus, the great emphasis on computer programs for performing absorption corrections on crystals of arbitrary shape. Unfortunately this method is also quite time consuming since the crystal's shape and size must be very accurately measured and also its morphological orientation relative to its crystallographic axes must be accurately determined. We prefer to use the spherical correction whenever possible and have devised a method to orient and mount a spherical crystal.

First, the sphere is placed in a depression formed in an isotropic material which has been attached to a glass slide (such as a cleavage fragment of halite). The slide is then placed on the stage of a petrographic scope equipped with a turret nosepiece. Optical orientation is attained by turning the sphere in the depression until the appropriate interference figure is obtained. For example, in the monoclinic case (2nd setting), the *b* crystallographic axis always coincides with one of the three optical axes (*X*, *Y* or *Z*). The type of interference figure corresponding to the *b* axis can usually be found in the literature. The method applies to all crystal systems with the exception of the cubic case which, of course, cannot be optically oriented and the triclinic case when the angles between the optical and crystallographic axes are known to be relatively large. Interference figures can usually be seen within the sphere without the use of the Bertrand lens.

To mount the crystal after the desired axis has been optically found, the glass fiber is attached to its mounting pin which has been removed from the goniometer head. The pin is then inserted into a hole which has been drilled in a small cork. The cork, in turn, is put into an unused hole of the petrographic scope's turret nosepiece and, by rotation of the turret, the glass fiber is brought into position above the oriented sphere. Perfect alignment of the fiber and sphere is accomplished by observing the sphere and fiber through a binocular microscope mounted on a universal table stand while slightly moving the glass slide. Next, the adhesive is applied to the glass fiber and, while again observing through the binocular microscope, the fiber is brought into contact with the sphere by use of the fine adjustment knob of the petrographic scope. After drying, the mounted sphere is placed on a goniometer head for final X-ray orientation.

Our experience indicates that the accuracy of orientation is within the range of two to ten degrees of arc, depending on how carefully the procedure is followed.

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International Union of Crystallography

Inter-Congress Meetings – I.U.Cr. Sponsorship

The Executive Committee of I.U.Cr. is anxious to promote an increase in the number of Inter-Congress meetings in order to avoid future Triennial Congresses becoming excessively large and cumbersome to handle A Sub-Committee on the Union Calendar has therefore been set up [see *Acta Cryst.* (1969) A**25**, 719) to implement this policy. Its function is to gather information on proposed or prospective meetings, coordinate the long-term planning of meetings which the Union organizes or co-sponsors, and actively to encourage the initiation of small or intermediate-sized meetings in fields where development is significant.

Since it is the aim of the Sub-Committee to plan at least three, and preferably more, years ahead, it is advisable to have early advice of meetings being planned or in prospect which might appropriately come within the category of Union sponsorship or co-sponsorship in terms of their content, location, size and date. It would therefore be appreciated if bodies such as Commissions of the Union, National Committees for crystallography, regional associations and other bodies which are contemplating or have begun the planning of a future international meeting on crystallography or with a major content of crystallography would contact the Sub-Committee Chairman:

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The Sub-Committee would be pleased to receive advice of provisional details of proposed Inter-Congress meetings as soon as possible and it will also consider requests for Union co-sponsorship of these meetings. Nominal financial support could be available in some cases.

Contact with the Sub-Committee should assist prospective organizers of meetings to disseminate preliminary information in a convenient manner since lists of meetings of interest to crystallographers will be published in the Journals of the Union from time to time. The Sub-Committee will also be glad to be informed of local or national crystallographic meetings.