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THE WEISSENBERG CAMERA AS A POWDER CAMERA

ARRIGO ADDAMIANO, *General Electric Company, Lamp Research
Laboratory, Cleveland, Ohio*

The suggestion has been made by Christ (1956) that powder patterns of substances of known cell-dimensions be taken at the edges of Weissenberg photographs to serve as standards for film calibration. In our laboratory we have often used the Weissenberg camera as a "powder" camera in order to get the diffraction patterns of related substances (e.g., a series of mixed crystals of different composition) side by side on the same film, thereupon facilitating the comparison between different patterns, reducing the time for processing the films and eliminating the need to do independent calibrations for film shrinkage and for the determination of the actual radius of the camera. The technique is very simple. The samples to be examined are centered one after another on the goniometer of the Weissenberg camera, the layer line screen is introduced and the powder patterns recorded in the desired order, taking care to read the position of the camera each time and to shift the camera a known amount (say, 5 mm) in the same direction after each picture.

When all the samples have been used the pattern of a substance of known cell dimensions is recorded at one edge of the film. In this way not only a calibration of the film is obtained but the order followed in taking the pictures becomes evident by inspection of the film after developing.

As mentioned above, this technique affords a considerable saving of the time involved in loading and unloading the camera and for processing the films. Also, independent film calibrations are eliminated. Furthermore, when not only the spacings of the lines but their intensities have to be compared, it is very convenient to have all the patterns collected on the same film and developed simultaneously.

In our experience the method is particularly attractive when the time involved for obtaining good sharp pictures is short, of the order of one hour, so that the collection of the whole set of diffraction data can be done in about one day.

REFERENCE

- CHRIST, C. L. (1956), Precision determination of lattice constants of single crystals using the Weissenberg camera: *Am. Mineral.*, **41**, 569.