

75th Anniversary of the Powder Diffraction File

With this second Issue of *Powder Diffraction* in 2017 it is exciting to publish a Review Article “Chemical Analysis by Diffraction – The Powder Diffraction File” by T. Fawcett, S. Kabekkodu, J. Blanton and T. Blanton which summarizes the evolution of the Powder Diffraction File (PDF)TM from its origins to today and summarizes the current breadth of materials analyses that the PDF and the software can perform.

The origins to the PDF were laid in the 1936 paper “Identification of Crystalline Materials” by [Hanawalt and Rinn](#) of Dow Chemical Co. that showed how to identify the crystalline phases in a multiphase mixture by the X-ray powder diffraction method and a database of patterns. This paper also included 1000 “Dow” patterns that became the foundation for the Powder Diffraction File a few years later. Over the ensuing 75 years the PDF database and associated search indexes have expanded greatly in number and breadth of entries and types of materials analyses that can be performed.

The Cover for this issue, prepared by Megan Washko of International Centre for Diffraction Data (ICDD)[®], shows the evolution of the PDF from the Hanawalt *et al.* era to the current PDF4+ (2017) resource. Currently the database has nearly 900 000 extensively reviewed and compiled entries along with powerful embedded software. Analysis methods have expanded to include ability to simulate X-ray, neutron, synchrotron, and electron diffraction data either in 1D or 2D format.

I invite you to read this valuable Review Article.

Hanawalt, J. D. and Rinn, H. W. (1936) “Identification of crystalline materials,” *Ind. Eng. Chem. Anal. Ed.*, **8**(4), 244–247.

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