

PHARMACEUTICAL POWDER DIFFRACTION: MAKING MOVIES

Bill David, ISIS Facility, Rutherford Appleton Laboratory, Chilton, Oxfordshire, UK

Recent software developments in powder diffraction have enabled the rapid identification and solution of complex crystal structures of pharmaceutical compounds. At the same time, instrumentation developments in the laboratory and at synchrotron sources have transformed the rapidity with which data can be collected. It is now possible not simply to collect a single powder diffraction dataset of a pharmaceutical compound but to create a movie of the behavior of a material under varying conditions such as humidity or temperature. Data can be collected sufficiently quickly to provide immediate feedback that can be used to direct the flow of an experiment in order to optimize a particular outcome. Several examples of powder diffraction movies will be shown that are all suitable for a general audience!