Crystallite size determination based on diffraction peak broadening is a widely used technique with its origins dating back to 1918 and the publication of Scherrer’s\(^1\) eponymous equation. Over the years the analysis of line broadening has become more refined and various methods and approaches have been adopted. These range from single peak analysis to full pattern fitting and fundamental parameter approaches. The key to all these methods is the correct characterisation of the instrumental broadening of the diffractometer and an appreciation of the likely microstructure of the sample.

This work will present a comparison of the various approaches currently available to researchers and attempt to validate these against other methods such as Scanning Electron Microscopy. It will aim to give a sense of the reliability of the method and provide limits within which the results can be sensibly interpreted.