

## Residual Stress in 0D, 1D, or 2D? Let the Sample Decide

**Benjamin Krueger**, Brian Jones, Jon Giencke, Nathan Henderson  
Bruker AXS – 5465 East Cheryl Pkwy – Madison, WI – US

Three common methods to measure residual stress are the  $\sin^2(\psi)$  method, the multi-HKL method, and the 2D method. Modern diffractometers give access to all three methods without reconfiguration or recalibration so that the user can choose the most appropriate one for their experiment. Due to geometrical differences, each method gives slightly different information about the sample. Here we measure the residual stress of a 500 nm tungsten coating on Si and show that a similar result can be obtained regardless of the method chosen. What this agreement tells us about the sample, as well as the relative advantages and disadvantages of each method, are discussed.