

## **Residual Stress Analysis of Coated Carbides at Kennametal inc.**

Tomohiro Shibata and Binky Sargent

Materials Analysis, Kennametal Inc. Latrobe PA 15650 USA

Kennametal Inc. is one of the world leading manufacturers of metal cutting tools, and supplies products to a variety of industries ranging from aerospace and automotive to earthworks. The Materials Analysis & Metrology group supports research and development, quality assurance, and process investigations.

Residual stress (RS) of coating layers plays a crucial role for cutting performance such as tool life. Using PANalytical Xpert MRD diffractometers, we regularly investigate RS of coatings at various stages of manufacturing processes as well as substrates alone. Measurement systems are optimized depending on coating materials, thickness, and sample geometries. Our capabilities, experience, limitations, and possible problems will be discussed.