

Advances in quantitative (XRPD) for minerals and mining applications

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X-ray powder diffraction (XRPD) combined with quantitative Rietveld analysis is an essential tool for the determination of relative phase amounts in crystalline materials, including both powdered solids and slurries; analysis times are normally less than 10 minutes per sample. In the minerals and mining industries, quantitative phase analysis by XRPD allows to characterize and optimize the whole process from exploration, processing, through to waste stockpiling. Currently, XRPD finds exponentially growing interest in important application areas such as in leaching and flotation processes (optimization of acid consumption, pH control, etc.) and in environmental mineralogy (prediction and control of acid rock drainage, verification and quantification of carbon dioxide sequestration, etc.).