

Product Evaluation

Information on what happens to a product if a process, or starting material changes can be vital. Batch samples at various stages of processing can be examined. Alternatively, measurements can be made *in-situ* with special furnaces, e.g. for testing the response of materials to high temperatures and/or oxidizing gases, without the need for quenching.

Quality Assurance (QA)

For well established processes, the technique can be used to check compliance with a quality standard. Quantitative phase analysis using neutron diffraction is a leading QA method for ensuring the correct proportion of fissile phases in nuclear fuels in Canada.

Ceramics

Metal-matrix composite

Welds

Alloys

Nuclear fuels

Oxidation phases

Minority phases

Retained austenite

Bulk compositions

Compositional profiling

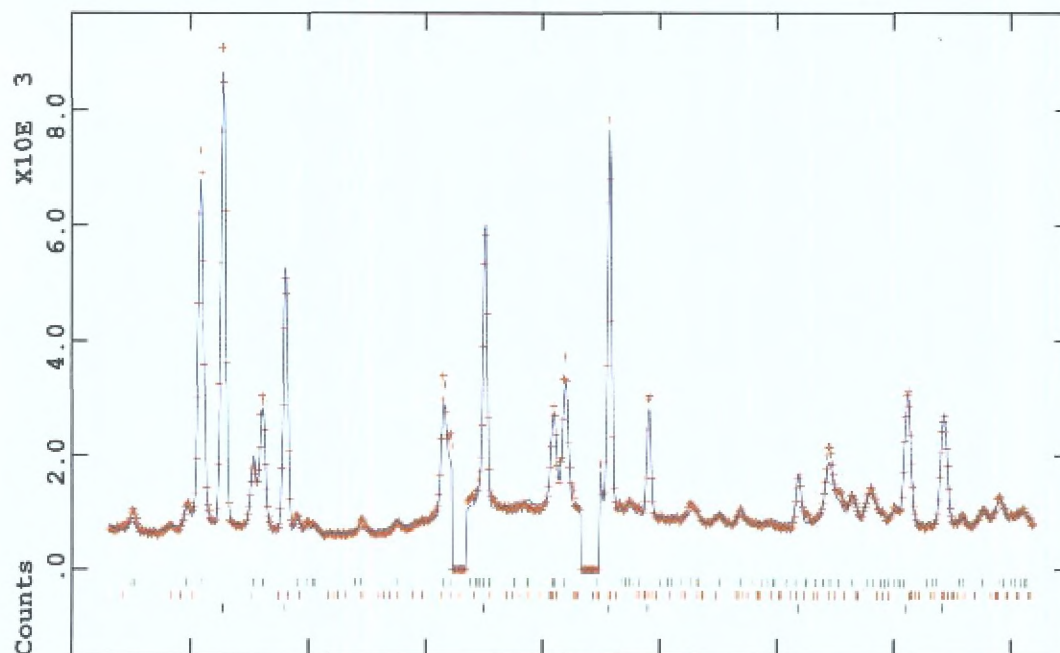


Fig 2. The composite diffraction pattern from a three-phase metal-matrix composite, showing the observed (+), and fitted (line) diffraction pattern. The tic marks, define contributions from each phase.

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