Neutron Program for Materials Research Applied Neutron Diffraction for Industry (ANDI)

Applied Neutron Diffraction for Industry (ANDI)

Component Design Manufacture Failure Analysis Regulatory Issues Materials Processing Neutron diffraction is the most versatile non-destructive probe of materials and industrial components. Industry can gain access to neutron scattering technology through a fee-for-service contract with the NRC. Contracts are handled by the Applied Neutron Diffraction for Industry (ANDI) group, at Chalk River Laboratories. This group has over twelve years of experience in providing neutron diffraction services to clients from nuclear, aerospace, automotive, materials and energysector industries.

NAC-CNAC

Residual Stress Scanning

Residual stress-scanning is a major component of the ANDI business, with projects that have included:

- The effectiveness of post-weld stress-relieving treatments.
- The relaxation rate of residual stresses in rolled joints and bent pipes at operating temperatures.
- The residual stresses in landing gear (advanced aluminum alloys).
- The stress-concentration effects near a notch or crack, under load.

Information on residual stresses at the design stage can help to optimize the performance and reliability of new products. Prototypes can be evaluated and compared against calculations. Scanning is non-destructive, so components can be returned to a client for subsequent treatment or testing.



Measuring the residual stresses near the fusion zone of a sleeve-welded pipeline.

lional Research uncli Canada

de recherches Canad

Steacie Institute for Molecular Sciences Institut Steacie des sciences moléculaires