

# Retained austenite quantification by energy dispersive X-ray diffraction (EDXRD)

*Fatigue of components and structures*



Energy dispersive phase analysis

## YOUR EXPECTATIONS

You would like to quantify the amount of retained austenite in order to:

- Develop or test a manufacturing process
- Compare several manufacturing processes
- Develop new products
- Develop new heat and thermo-chemical treatments
- Analyse parts after failure

## OUR SOLUTIONS

Techniques:

- Energy dispersive X-ray diffraction (EDXRD)
- Quantification carried out from the measurements of the intensities of the constituent phases of the materials. For example – thermo-chemical treatment of a steel: 16 phase (ferrite, bainite and martensite) and phase (austenite) reflections
- Totally automatic quantification and analysis
- Length of time for acquiring then processing results ranges from 10 min to 30 min maximum according to the samples (24 hr as required in standard method)

## Characteristics:

- Analyses of all types of steel and iron (even textured and containing carbides)
- Contents between 0% and 100%
- Analysis repeatability currently less than 0.5%
- Determination of strain-induced martensite in austenitic steels
- Additional information on the structure (strain-hardening, lattice parameter)
- Characterisation of layer thicknesses

## YOUR BENEFITS

- Comprehensive management of your experiment requirements
- Meeting deadlines with results in less than 48 hours
- Response adapted to the requirements of your customers
- Assurance that analyses can be repeated
- Availability of accredited expert laboratories (accreditation Cofrac - No. 1-1014 - Scope available on [www.cofrac.fr](http://www.cofrac.fr))



### Question and Answer Service

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