

Source:

Bachelor thesis Fachhochschule Windisch Canton Aargau says:

Metal relax with Vibration:

Bachelor Thesis 2011 Department of Mechanical Engineering deepening production technology and processes

Results:

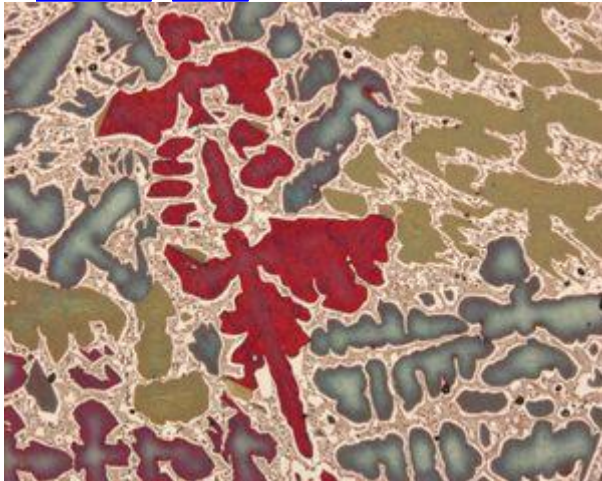
The metallographic investigations and neutron diffraction, came back clear. The X-ray showed that a

VSR, (Stress vibration relief) application, and a vibration during the welding, the voltages at up to 25% lower.

What is: The metallographic investigations

Metallography Source:

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metallographic section of a bell bronze, polished and etched with clamping III

metallography is to educate and qualitative and quantitative description of [structure](#) metallic materials with the aid of microscopic techniques. thus it provides a discipline of [metallurgy](#) . The activity is supported by a [metallographers](#) exercised.

In order to identify the structure of the microscope, the material must be prepared. Knowledge of the properties and processing of metal are important to errors in *preparation* and avoid structural assessment.

Due to the increasing number of [Composite materials](#) and the emergence of new or improved [materials](#) (Ceramic / metal systems, metal / plastic systems, etc.) is now the designation **materialography** prefers.

is used metallography / materialography **many in [quality control](#) and damage analysis as well as in research and development.**

and neutron diffraction, came back clear.

What is:

1. Neutron scattering - Wikipedia

de. wikipedia.org / wiki / neutron scattering

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This research method is often as neutron diffraction or

Neutron designated. A third method is the quasi-elastic ...

<http://de.wikipedia.org/wiki/Neutronenstreuung>

neutron scattering

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When **neutron scattering** Various experimental methods for studying [condensed matter](#) referred to on the [scattering](#) by slow or thermal [neutrons](#) (On a test specimen Engl .: [target](#)) Are based. Neutrons interact with [atomic nuclei](#) and with the [magnetic moments](#) of electrons, which is why it to study the structure, the [dynamics](#) and the [magnetic order](#) condensed matter at [atomic scale](#) are suitable. In the neutron scattering distinction is made between inelastic, elastic and quasielastic scattering. The inelastic scattering is the presence or de-excitation of a [phonon](#) , one [Magnons](#) or other internal degree of freedom of the target connected. By measuring the change in kinetic energy of the neutron, the energy of the excitation can be determined. In elastic scattering the interaction is not connected to any energy transfer. There

the [De Broglie wavelength](#) thermal neutrons is in the order of an atomic diameter, join the elastic scattering of neutrons by condensed matter [interference effects](#) , which can be exploited for structural studies. This research method is often referred to as **neutron diffraction** or

Neutron designated. A third method is the quasi-elastic scattering for investigating [diffusion mechanisms](#) is used at the atomic level.

X-ray diffractometry showed that a VSR (vibration stress relief) application, and a vibration during the welding, the voltages at up to 25% lower.


What is:

<http://de.wikipedia.org/wiki/R%C3%B6ntgendiffraktometer>

X-ray diffractometer

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On **X-ray diffractometer** (from [diffraction](#) . [lat.](#) For [diffraction](#)) Is a device that [Diffraction phenomena of X-rays](#) measures. It is to distinguish (between Röntgeneinkristalldiffraktometern diffraction [single crystals](#)) And Röntgenpulverdiffraktometern (diffraction on powdered samples).

This device is in the [Crystallography](#) (For the elucidation of structure [Crystal Structure Analysis](#)) And the identity of the particular sample used. Use is made use of the fact that the [wavelength](#) the [X-rays](#) in the range of an atomic distance is (0.1-0.3 nm).

According to the [Bragg equation](#) is an X-ray beam strikes a crystal so bent that reflections occur at discrete locations in space. The diffractometer now detects location and intensity of the reflections that occur.

Comment WIAP:

Vibration relax during the welding and after welding are two ways methods. That the result during the welding as is similar after welding, also shows that a subsequent, long in about 30 minutes to relax is easier than during the welding.

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