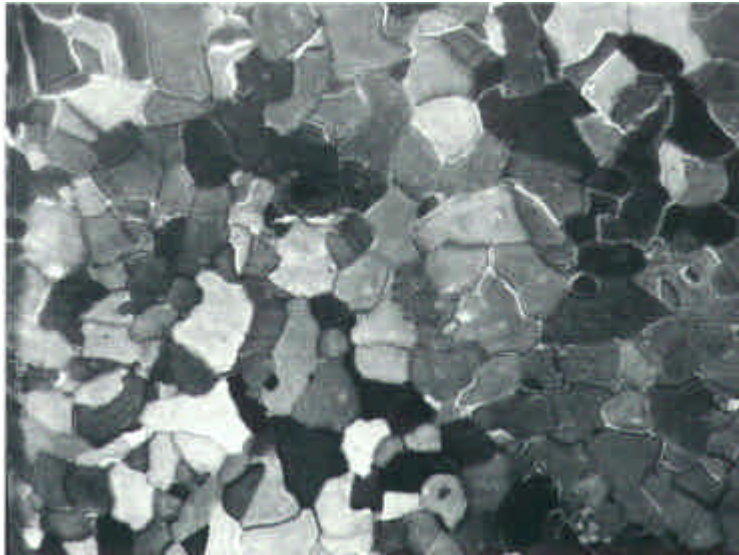
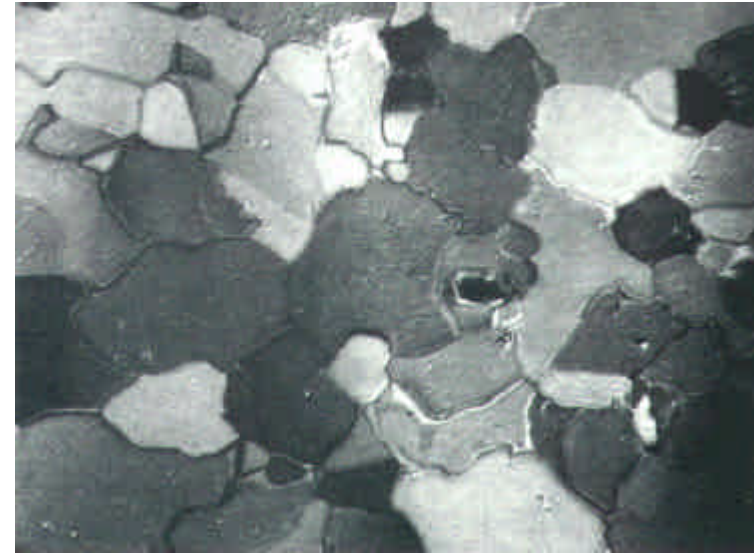


# Grain structure of steel

Investigations of texture structures, cracks, grain orientation studies

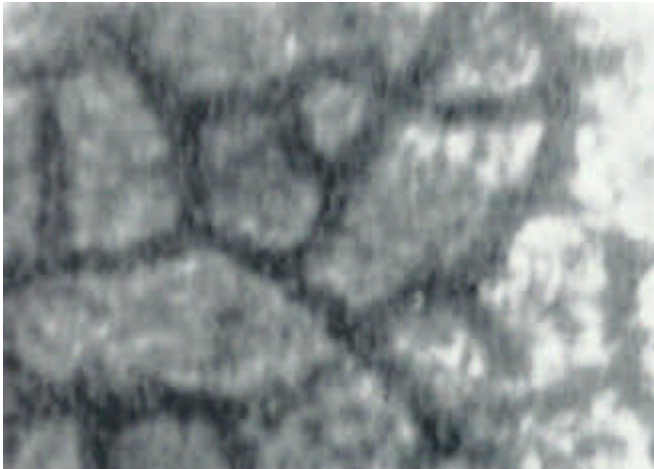


Frequency: 1,1 GHz, image width: 1000  $\mu\text{m}$

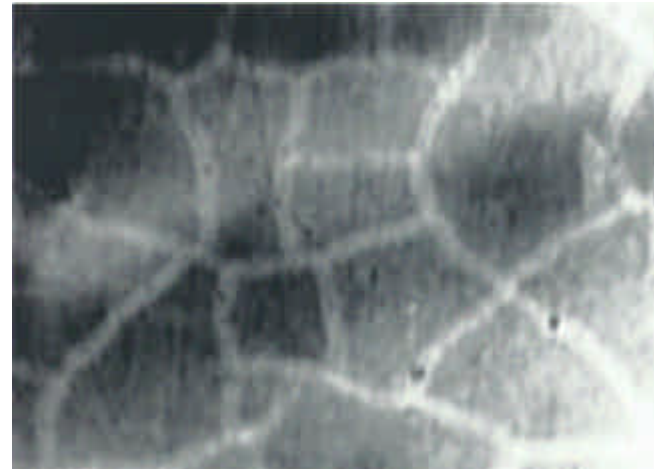


Frequency: 1,6 GHz, image width: 312  $\mu\text{m}$

## Cracks in TiN / metal coatings



TiN coatings on steel were investigated. Due to the coating process, thermal stress relief cracks form as a result in the coating.

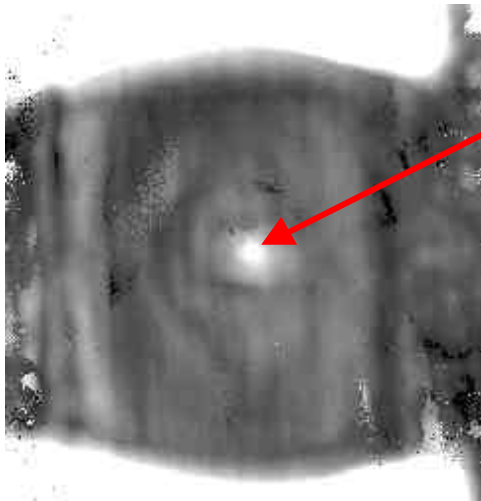


The cracks arose after the specimen was heated up to 850°C and cooled down to room temperature

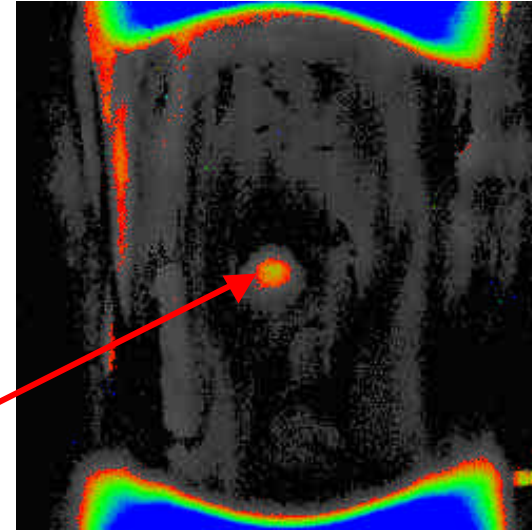
# Investigation of welding processes



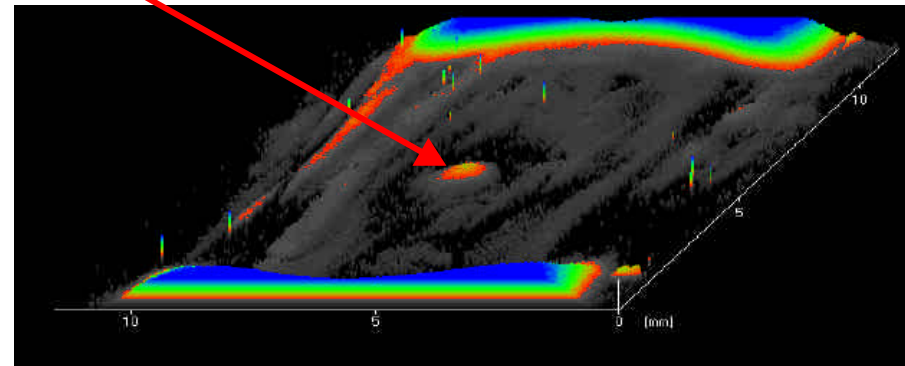
Optical image



SAM image (C-Scan)



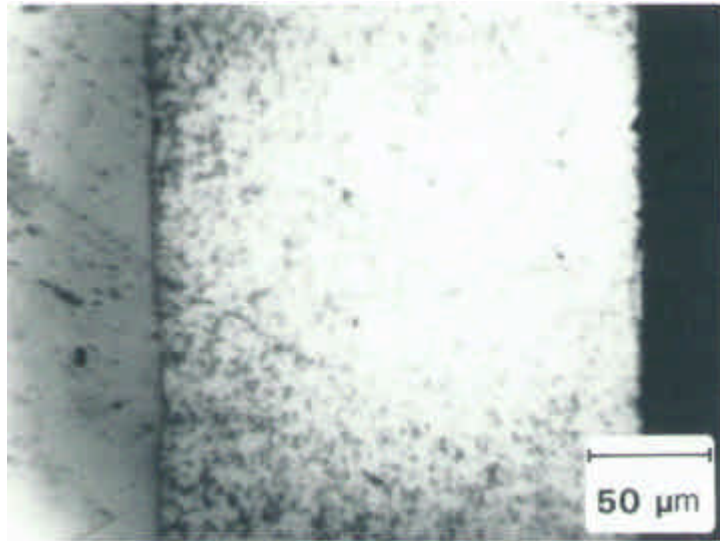
hole



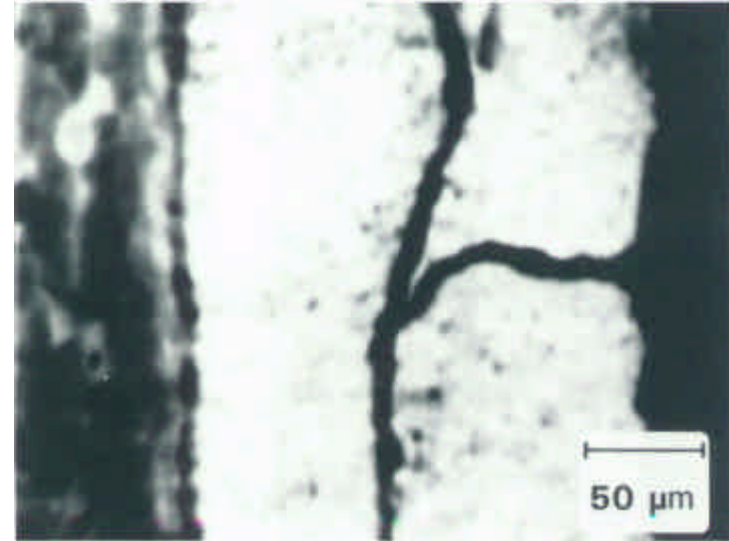
3D-plot

# Fatigue cracks

## Comparison of an optical and an acoustic image

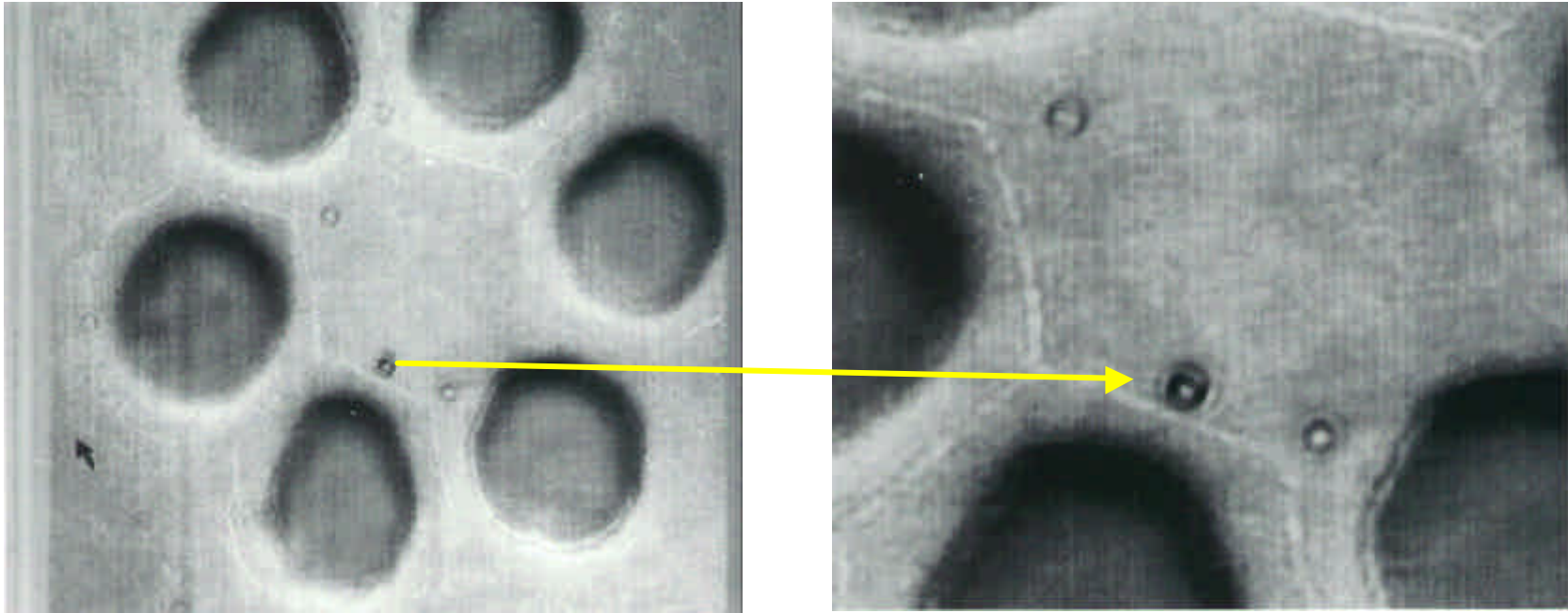


Optical image of fatigue cracks in a bearing alloy



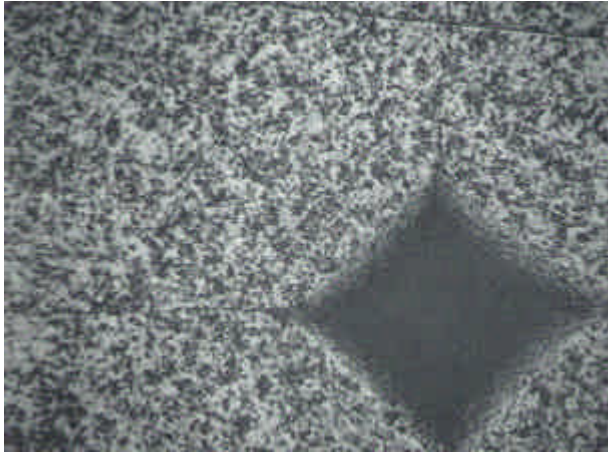
Acoustic image of fatigue cracks in a bearing alloy

# Defects in super conductors

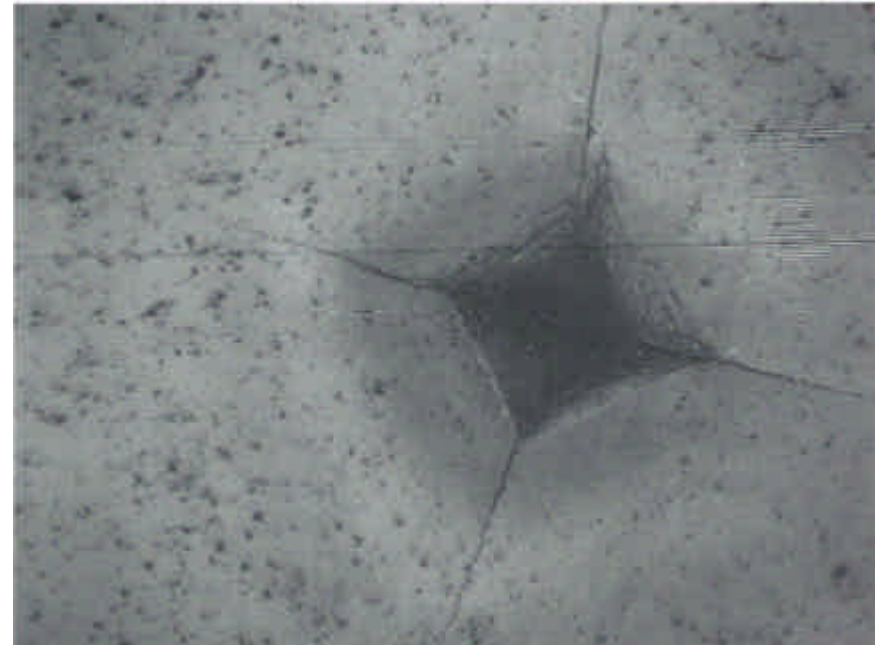


Cross section of superconductors with copper cladding, 100MHz

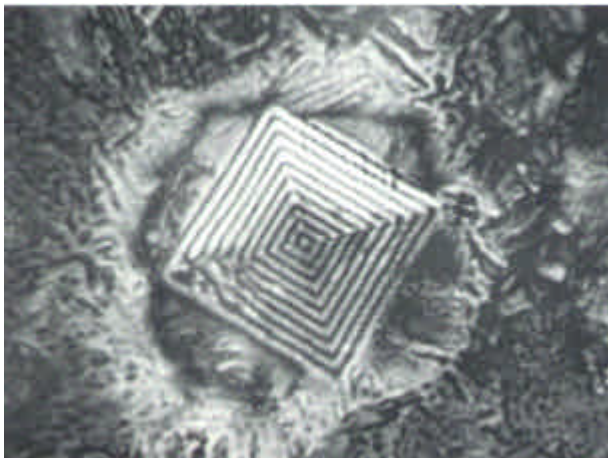
# Ceramics



Vickers hardness indentation. Frequency: 1,3 GHz



Crack propagation and mechanism



## Plastic components



Plastic components with complex shapes are frequently produced by injection molding. Defects and faults, such as material non homogeneities, voids etc. can therefore easily detected.