

HYDRIDES ORIENTATION ON ZIRCONIUM ALLOY

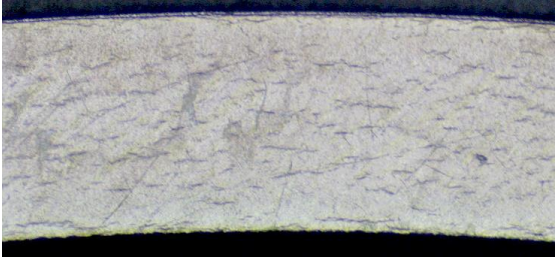


Figure 1: Original image of Zr alloy showing the hydrides at 100X.

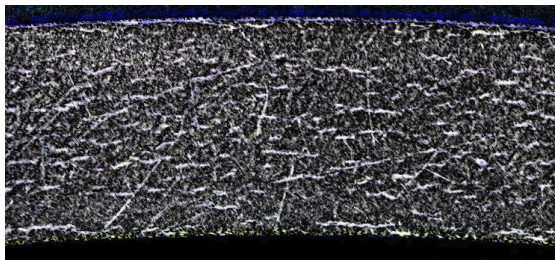


Figure 2: Thin dark objects are highlighted using a gray transformation.

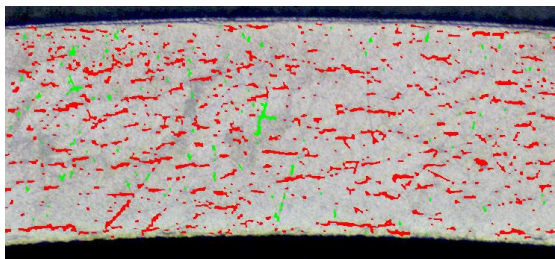


Figure 3: Hydrides are binarized into red bitplane. Radial hydrides are isolated into green bitplane and their count percentage is calculated.

Equipment

Image Analysis System:	Clemex Vision PE
Microscope:	Nikon Optiphot-2
Camera:	Sony DXC 950P
Magnification:	100X

Sample Description

One Zr alloy containing hydrides is submitted for image analysis.

Purpose of Analysis

Demonstrate the ability of the Clemex Vision image analysis system to distinguish and characterize the hydrides in Zr alloy.

Procedure

The analysis was done at 100X and a gray transformation was used to highlight the hydrides. Then hydrides were binarized into red bitplane. Certain binary operations were applied to reconnect and clean the bitplane. Radial hydrides were isolated into green bitplane and their count percentage is calculated.

Results

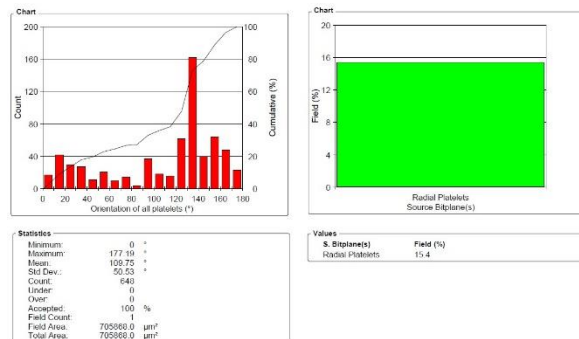


Figure 4: The orientation of all platelets and percentage of radial platelets are determined.