

**OP 430**

Microstructure and Hydrogen Embrittlement Sensitivity of TC4 Titanium Alloy  
Welded Joint with Narrow Gap

**Xudong Feng**, Yu Shi

*Lanzhou University of Technology, Lanzhou, China*

The effects of the organizational characteristics and morphological distribution of Ti-6Al-4V alloy welded joint on their resistance to hydrogen embrittlement were investigated. The  $\beta$ -phase continuity of the base material (BM) was poor, and the large volume of the striped  $\alpha$ -phase hindered hydrogen diffusion. Consequently, the BM has low hydrogen embrittlement sensitivity. The basket-like phase distribution of the weld material (WM) had better  $\beta$ -phase continuity and higher phase boundary density compared with the BM, providing a more convenient channel for hydrogen diffusion and more hydrogen absorption sites. Therefore, the WM had a high hydrogen embrittlement sensitivity.