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Análise da Influência da Deformação Controlada na Transformação Martensítica do Aço Maraging 300

Batalha, L.F.P.(1); Rodrigues, M.V.G.(2); Ferreira, J.C.(2); Reis, G.S.(3); Silva, E.S.(3); Lima, M.N.S.(4); De Abreu, H.F.G.(4); Rodrigues, S.F.(3);
(1) ; (2) UFPI; (3) IFMA; (4) UFC;

This research investigates the effects of adding different niobium contents to maraging steel, focusing on studying hot embrittlement using a Gleeble 563 thermomechanical simulator. Additionally, samples were characterized using Optical Microscopy (OM), Scanning Electron Microscopy (SEM), Energy Dispersive X-ray Spectroscopy (EDS), Electron Backscatter Diffraction (EBSD), X-ray Diffraction (XRD), Vickers Microhardness, and Dilatometry. The results showed a decrease in grain and martensite lath size with increasing Nb content. The addition of niobium led to improved hot embrittlement resistance, enhancing the material's ability to maintain mechanical properties at elevated temperatures. This investigation contributes to understanding the effects of niobium addition on the mechanical and microstructural behavior of this alloy, enabling the development of metallic alloys with enhanced properties for specific applications in the industry.