Kinetika transformasi fasa pemanasan tetap pada kasus penggetasan temper baja stainless zeron-25(SAF-2507)

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Abstrak

The kinetics of isothermal phase transformation in tempered embrittlement stainless stell zeron-25 (SAF-2507): The kinetics study of phase transformation in stainless steel SAF 2507 heat-treated at 800,850 and 900 oC have been done.Eitheir observation of microstructure for treated materials by an optical or electron microscope confirmed the formation of carbide phase at grain boundaries between ferrite and austenite lead to three phase materials.It is furthur observed that for the three treated tempereture there were no significant change in volume fraction of territe phase found and thus it may be be assumed constant..Hovewer,this was not the case for two other phase in wich volume fraction of carbide phase show an increase and followed by a decrease in in volume fraction of austenite phase.It is then concluded that the carbide transformed from austenite.The number of volume fraction of carbide phase determinet by XRD methods were ranged from 6.0%to20% depends on time andtemperature of treatments.An avrami equation for kinetic sudy of phase transformation weresuccessively used for construction of phase transformation curves from which some kineticparameters of phase transformation were succesfully derived,among them the avarage constantrate reaction(n) equals to about one,the activation energy below 850oC is 304 and for 850oC above is 307 kj/mol.With kinetics constans above,the complete IT diagram for iso embrittlement of stainless steel SAF 2507 was succesfully built theoretically.