

Computer Simulations of Stress Corrosion Studies of Quartz Particulate Reinforced ZA-27 Metal Matrix Composites

Authors : K. Vinutha

Abstract : The stress corrosion resistance of ZA-27 / TiO₂ metal matrix composites (MMC's) in high temperature acidic media has been evaluated using an autoclave. The liquid melt metallurgy technique using vortex method was used to fabricate MMC's. TiO₂ particulates of 50-80 μm in size are added to the matrix. ZA-27 containing 2,4,6 weight percentage of TiO₂ are prepared. Stress corrosion tests were conducted by weight loss method for different exposure time, normality and temperature of the acidic medium. The corrosion rates of composites were lower to that of matrix ZA-27 alloy under all conditions.

Keywords : autoclave, MMC's, stress corrosion, vortex method

Conference Title : ICRM 2015 : International Conference on Robotics and Mechatronics

Conference Location : Singapore, Singapore

Conference Dates : September 10-11, 2015