Corrosion impact of AA6061/clay composite for industrial application

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N. E. Udoye[1,a)], O. S. I. Fayomi[2], A. O. Inegbenebor[1], S. T. A. Okolie[3], , J. O. Dirisu[1], *and* T. C. Jen[4]

ABSTRACT

The search for novel products with enhanced function is increasing daily due to technological innovation. The development of products is crucial to minimize the exorbitant price of material acquisition and better performance of developed material. The research was carried out on samples of clay kaolinite pulverized to obtain 75 µm. 75 µm of clay was blended with AA6061 in.different composition to produce 4 samples as follows: sample A 2 % clay with 98 % aluminium alloy, B, 4 % clay 96 % aluminium alloy, C, 6 % clay 94 % aluminium alloy, D, 8 % clay 92 % aluminium alloy. Each sample was analysed for mechanical properties. Polarization test carried out in 0.75 M of H_2SO_4 on the composite shows enhanced corrosion susceptibility. Corrosion analysis of clay inserted in AA6061 revealed improved corrosion performance. Also, the changes in microstructure through SEM show that the integration of clay in AA6061 aluminium alloys minimizes corrosion impacts.