The 6th International Conference on Welding, Non Destructive Testing and Materials and Alloys Industry (IC-WNDT-MI'18)

2018

Determination of the elastic parameters of thermoplastic composites using the indentation technique

A. Mokhtari, N. Tala-ighil, A. Brick Chaouche, Y.A. MASMOUDI

Abstract : this work deals with the application of the macroindentation technique to the determination of the elastic parameters of composite with polypropylene matrix and reinforced with ductile and brittle fibers. The aim is to obtain a representatives average values taking into account the influence of the holding time and type of the used reinforcement (ductile or brittle reinforcement) on the overall elastic modulus of the studied polymers. To do this, the diameter of the indenter used ischosen relatively large (diameter of 16 mm) and the load equal to 6 kN. The various results obtained made it possible to see the effects of the holding time and the type of reinforcements used on the evolution of the elastic modulus of the reinforced composite

Keywords : thermoplastic composites, macro-indentation test, viscoplastic behavior