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Experimental and simulation study of tension properties of unsaturated reinforced polyester at low temperature

Saad R Ahmed and Sanjeev Khanna
University of Missouri Columbia, USA

The cryogenic properties of polymers have received great attention with new developments in military and petrochemical processes that require operation at low temperature. This paper presents the evaluation of unsaturated reinforced polyester under static and dynamic loading at extreme temperatures. An environmental chamber was used to test the influence of sub-zero process temperatures on the tensile properties of the specimens. Simulation of tensile properties has be conducted by LS-DYNA and compared with the experimental results. Microstructure examination of the specimens after failure is conducted and evaluated.

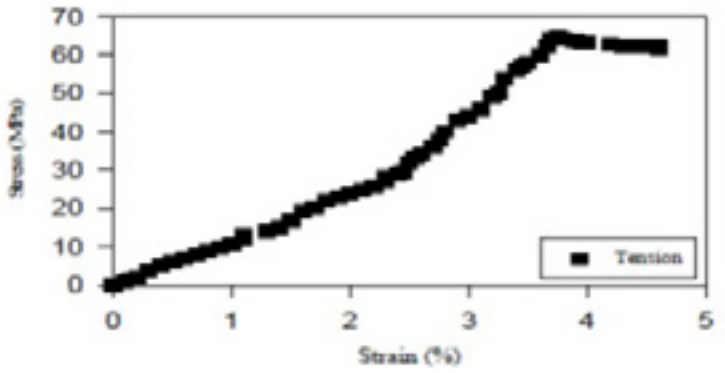

Figure: Typical stress versus strain curves in tension and compression for the polyester resin.

Biography

Saad Ahmed is a PhD candidates in Mechanical and Aerospace Engineering school in University of Missouri Columbia.. Over 7 years, experience of working on a milestone driven as well as economically competitive projects for the development and commercialization of innovative materials. Extensive knowledge and experience in the material characterization and specifications measurement techniques for the industrial materials of manufacturing to provide optimized design. He hands on experience on the experimental and computational fluid dynamics. Creative individual with excellent problem solving skills and practical sense of connecting science and technology:

srazp9@mail.missouri.edu

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