

Abstract Submitted  
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**Elastic Waves in Binary Solid Liquid Mixtures, Similarities at Macro and Nano Scales** HASSON M. TAVOSS<sup>1</sup>, Valdosta State University — Stress wave propagation in solid liquid mixtures at ultrasonic frequencies, in some cases, resembles wave propagation behaviors of materials at nanometer or atomic scales. For instance, it can be shown that wave; dispersion, attenuation, and cutoff-frequency effects depend on the same structural parameters as those observed at nano or atomic levels and can have similar interpretations at both scales. It follows that, to investigate theoretical models of wave and matter interactions at nano scale it is more convenient to use, as experimental tools, the readily analyzable models of propagation at macro-scales. Experimental findings on elastic wave propagation in the mixtures of liquid and solid particles will be presented and discussed. Results of wave dispersion, attenuation, band-pass, and cutoff frequency measured for ultrasonic waves in inhomogeneous mixtures of solid and liquid will be presented showing these similarities at the radically different scales.

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