The evaluation of the sonic attenuation in different microstructures

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Abstract
Ultrasonic testing applications are widely used for material characterization. With the advancement in electronics and digital technology, ultrasonic testing parameters, can be measured with high accuracy to provide a reasonable confidence level. Micro structural properties, which control the mechanical properties, affect the ultrasonic propagation factors differently. In order to establish any correlation between mechanical properties and ultrasonic parameters the effects of various microstructural properties on ultrasonic testing parameters must be separated.

There are many new studies focused at the evaluation of microstructure by ultrasonic. This study aims at evaluating the sonic attenuation in different microstructures, determining the correlation between ultrasonic parameters and hardness of the material, which is directly related to microstructure, and practically determining if that the ultrasonic can be used to evaluate materials properties.