

## عنوان مقاله:

Elastic characterization of porous bone by ultrasonic method through Lamb waves

## محل انتشار:

فصلنامه مواد پیشرفته و فرآوری، دوره 5، شماره 2 (سال: 1396)

تعداد صفحات اصل مقاله: 14

## نویسندگان:

lahcen Mountassir - Faculty of sciences, Ibn Zohr University Agadir

Touriya Bassidi - Faculty of Science, Ibn Zohr University Agadir

Hassan Nounah - Faculty of Science, Ibn Zohr University Agadir

## خلاصه مقاله:

The object of this research is to characterize the porous bones by an ultrasonic method using Lamb waves. In recent years, the characterization of such materials has attracted many authors and takes a perfect place in the field of medicine. It requires the development of more efficient technology for getting the necessary quality and security. This paper aims to exploits the dispersion curves of the Lamb wave, as a new originate alternative, to characterize the porous bone. The method used in this work is modeled using the Schoch theory for the measurement of the ultrasonic parameters, namely the longitudinal and transversal velocities, and densities, then we deduce the mechanical properties of samples with different porosity in a theoretical way. The theoretical results were compared with experimental data, and it is found that the predicted values were of the same order of measurement as experimental measurements. The correlation coefficient between the experimental ultrasound velocities and the theoretical velocities predicted by Schoch theory was  $R=0.96$ .

## کلمات کلیدی:

Bone, Porous materials, Elastic properties, Lamb waves, Ultrasound

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1282707>

