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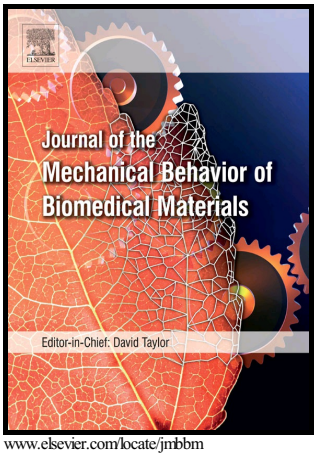

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Valero, C[1*]. , Navarro, B.[1], Navajas, D.[2, 3,4], García-Aznar, J.M.[1]

[1] *Multiscale in Mechanical and Biological Engineering (M2BE), Aragon Institute of Engineering Research, Dept. of Mechanical Engineering, University of Zaragoza, Zaragoza, Spain*

[2] *Institute for Bioengineering of Catalonia, 08028-Barcelona, Spain*

[3] *Centro de Investigación Biomédica en Red de Enfermedades Respiratorias, 28029-Madrid, Spain.*

[4] *Facultat de Medicina, Universitat de Barcelona, 08036-Barcelona, Spain*

*(claraval@unizar.es)

Abstract

The characterization of the mechanical properties of soft materials has been traditionally performed through uniaxial tensile tests. Nevertheless, this method cannot be applied to certain extremely soft materials, such as biological tissues or cells that cannot be properly subjected to these tests. Alternative non-destructive tests have been designed in recent years to determine the mechanical properties of soft biological tissues. One of these techniques is based on the use of atomic force microscopy (AFM) to perform nanoindentation tests. In this work, we investigated the mechanical response of soft biological materials to nanoindentation with spherical indenters using finite