



JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS

AUTHOR INFORMATION PACK

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DESCRIPTION

The *Journal of the Mechanical Behavior of Biomedical Materials* is concerned with the **mechanical deformation, damage and failure** under applied forces, of **biological material** (at the tissue, cellular and molecular levels) and of **biomaterials**, i.e. those materials which are designed to mimic or replace biological materials.

The primary focus of the journal is the synthesis of materials science, biology, and medical and dental science. Reports of fundamental scientific investigations are welcome, as are articles concerned with the practical application of materials in medical devices. Both experimental and theoretical work is of interest; theoretical papers will normally include comparison of predictions with experimental data, though we recognize that this may not always be appropriate. The journal also publishes technical notes concerned with emerging experimental or theoretical techniques, letters to the [editor](#) and, by invitation, review articles and papers describing existing techniques for the benefit of an interdisciplinary readership.

The journal offers online [submission](#), a short time to publication, the opportunity for ample space to develop an argument in full, and the services of referees with expertise in mechanical behaviour and an understanding of the special nature of biomedical materials.

Examples of relevant subjects include: Stress/strain/time relationships for biological materials (natural and engineered ones) Fracture mechanics of hard tissues (such as bone, teeth, and other mineralized tissues, ceramics and metals and various biomedically relevant alloys) Tribological properties of joint materials and their replacements, including coatings and surface modifications Mechanical characterisation of tissue engineering materials and scaffolds, and the investigation of mechanical cues in the context of biological processes The mechanical behaviour of cells, including adhesion and failure Mechanical properties of biological molecules such as proteins, DNA, and other biomolecules Long-term fatigue, creep and wear properties of biomaterials used in implants and similar biomedical materials The behaviour of the human tissues under impact loading and other extreme conditions Additive manufacturing methods of all kinds, for metals, ceramics, polymers, composites, and other biomaterials (in medical, dental, bio-inspired and related fields) Mechanical performance of materials in plants and animals in all natural and engineered ecosystems New techniques for the measurement of mechanical properties in biomedical materials, in both laboratory and clinical practice Computer simulations of material behavior at all time- and length-scales (from molecular to tissue scales), as well as the introduction of new computing techniques (such as machine learning and artificial intelligence) in the modeling and analysis of the mechanical properties of biomedical

materials Clinical case histories related to material performanceMechanobiology, focusing especially on the response of cells and tissues to biophysical stimuli at varied length- and time-scales

The journal publishes papers from the proceedings of the International Conference on the Mechanics of Biomaterials and Tissues; special issues devoted to particular subjects or events will also be considered.

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Examples:

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Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2010. The art of writing a scientific article. *J. Sci. Commun.* 163, 51–59. <https://doi.org/10.1016/j.Sc.2010.00372>.

Reference to a journal publication with an article number:

Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2018. The art of writing a scientific article. *Heliyon.* 19, e00205. <https://doi.org/10.1016/j.heliyon.2018.e00205>.

Reference to a book:

Strunk Jr., W., White, E.B., 2000. *The Elements of Style*, fourth ed. Longman, New York.

Reference to a chapter in an edited book:

Mettam, G.R., Adams, L.B., 2009. How to prepare an electronic version of your article, in: Jones, B.S., Smith, R.Z. (Eds.), *Introduction to the Electronic Age*. E-Publishing Inc., New York, pp. 281–304.

Reference to a website:

Cancer Research UK, 1975. Cancer statistics reports for the UK. <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/> (accessed 13 March 2003).

Reference to a dataset:

[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions. Mendeley Data, v1. <https://doi.org/10.17632/xwj98nb39r.1>.

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