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ISSN: 2213-5979

### DESCRIPTION

The aim of the open access *Photoacoustics* journal (**PACS**) is to publish original research and review contributions within the fast growing field of **photoacoustics (optoacoustics)** and **thermoacoustics**, which exploits optically and electromagnetically excited acoustical and thermal phenomena for visualization and characterization of a variety of materials and biological tissues, including living organisms. While some of the spectroscopic and photothermal applications have reached a mature state, many other research directions experience an explosive growth, in particular **biomedical photoacoustics**, which is currently considered the fastest growing **bio-imaging** modality. The wealth of investigated topics clearly indicates that this field has developed a broad range of tools for fundamental and applied research. The enormous recent progress is greatly supported by the advances in laser technologies, ultrasound detection approaches, development of inverse theory and fast reconstruction algorithms. This progress is also driven by a large number of unmet biological and medical needs that can be addressed by the unique contrast mechanisms available to **photoacoustic (optoacoustic)** methods. These include pre-clinical research and clinical **imaging** of vasculature, tissue and disease physiology, drug efficacy and treatment monitoring, optical anatomy and molecular **imaging** employing fluorochromes, chromophores and nanoparticles. Correspondingly applications span the entire range of biological and medical **imaging** including cancer, cardiovascular diseases, neuroimaging, ophthalmology or **imaging** in immunology, diabetes and obesity, cell trafficking application and a multitude of other biological functions. The multi-disciplinary nature of **photoacoustics** and thermoacoustics is also evinced by the growing contribution from chemistry and nanotechnology where a multitude of novel contrast materials and agents have been constantly developed, from nanoparticles and organic dyes, to targeted agents and genetically expressed markers.

The list of topics of interest includes (but is not limited to) the following. Note that the terms **optoacoustic** and **photoacoustic** can be used synonymously.

- **Photoacoustic / optoacoustic imaging**, tomography
- **Photoacoustic / optoacoustic** mesoscopy and microscopy
- Novel detectors
- Novel laser and light sources and delivery technologies
- Spectroscopy and analysis of compounds
- Signal processing and image reconstruction methods
- Thermoacoustics and microwave-induced **imaging**
- Ultrasound-modulated optical phenomena
- Multi-modality systems involving light and sound

- Contrast agents, nanoparticles, nanotechnology
- Interactions with cells and tissues
- Pre-clinical imaging
- Molecular imaging
- Clinical translation and applications

This journal is a peer reviewed, open access journal.

**Keywords: PACS, photoacoustics, optoacoustics, imaging, photothermal**

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Area of expertise: photoacoustic tomography, cancer detection and diagnosis, devices

## GUIDE FOR AUTHORS

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### INTRODUCTION

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- Submit each illustration as a separate file.

A detailed [guide on electronic artwork](#) is available.

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Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

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#### **Please do not:**

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### *Reference style*

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Example: '..... as demonstrated [3,6]. Barnaby and Jones [8] obtained a different result ....'

*List:* Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

### *Examples:*

Reference to a journal publication:

[1] J. van der Geer, J.A.J. Hanraads, R.A. Lupton, The art of writing a scientific article, *J. Sci. Commun.* 163 (2010) 51–59.

Reference to a book:

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

Reference to a chapter in an edited book:

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

Reference to a website:

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

Reference to a dataset:

[dataset] [5] M. Oguro, S. Imahiro, S. Saito, T. Nakashizuka, Mortality data for Japanese oak wilt disease and surrounding forest compositions, *Mendeley Data*, v1, 2015. <https://doi.org/10.17632/xwj98nb39r.1>.

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