



### TABLE OF CONTENTS

|   |                                 |            |
|---|---------------------------------|------------|
| • | <b>Description</b>              | <b>p.1</b> |
| • | <b>Abstracting and Indexing</b> | <b>p.2</b> |
| • | <b>Editorial Board</b>          | <b>p.2</b> |
| • | <b>Guide for Authors</b>        | <b>p.4</b> |



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### 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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- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.

- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.

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

**You are urged to visit this site; some excerpts from the detailed information are given here.**

#### *Formats*

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

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):

EPS (or PDF): Vector drawings, embed all used fonts.

TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.

TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.

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

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

#### *Figure captions*

Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

#### **Tables**

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

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Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

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### *Reference style*

*Text:* Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.

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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