



TABLE OF CONTENTS

●	Description	p.1
●	Abstracting and Indexing	p.2
●	Editorial Board	p.2
●	Guide for Authors	p.4



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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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Malini Olivo, Singapore Bioimaging Consortium, Helios, Singapore

Area of expertise: photomedicine, nanobiophotonics, optical imaging, bio-sensing

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Area of expertise: multimodal optical molecular imaging, photoacoustic imaging, image reconstruction, photoacoustic devices

Xueding Wang, Dept. of Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA

Area of expertise: biomedical photoacoustics, optical imaging, light-tissue interactions, medical ultrasound

Roger Zemp, Dept. of Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada

Area of expertise: photoacoustic imaging, ultrasound imaging, optical-resolution photoacoustic microscopy, molecular imaging, imaging of gene expression, capacitive micromachined ultrasound transducers, image analysis and reconstruction algorithms, fiber-laser technology, light transport in turbid media, nano-scale photoacoustic and ultrasonic contrast agents

Vladimir Zharov, Arkansas Nanomedicine Center, University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA

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Quing Ching Zhu, Optical and Ultrasound Imaging Lab, Washington University in St. Louis, St. Louis, Montana, USA

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

GUIDE FOR AUTHORS

INTRODUCTION

Types of article

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[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.

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[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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