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DESCRIPTION

The aim of the *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: laser-tissue interaction, photoacoustics for medical application, PVDF film sensor

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Area of expertise: clinical photoacoustic/ultrasound imaging, molecular imaging and contrast agents, intraoperative photoacoustic microscopy, multimodal and multiscale imaging

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

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Area of expertise: imaging, sensing, monitoring, tomography, spectroscopy, microscopy, laser (all associated with biomedical applications)

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Area of expertise: photoacoustic microscopy, photoacoustic endoscopy, intravascular photoacoustics, atherosclerosis imaging, angiogenesis imaging

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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

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Area of expertise: spectroscopy, microscopy, sensing, photothermics, cytometry, nanomedicine, theranostics

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

GUIDE FOR AUTHORS

INTRODUCTION

Types of article

Submissions covering the research areas mentioned under the section "Aims and Scope" are welcome for publication. Please visit this journal's Aims and Scope for further information: Photoacoustics focuses primarily on original research articles, reviews and short communications (letters).

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

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[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 13.03.03).

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