

## Optical Interactions with Tissue and Cells XXX

This conference has an open **call for papers**:

### SUBMIT AN ABSTRACT

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[Submission guidelines for Authors and Presenters](#)

## Important Dates

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Abstract Due:  
25 July 2018

Author Notification:  
1 October 2018

Manuscript Due Date:  
11 January 2019

## Conference Committee

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## Additional Conference Information

Chair Emeritus: [Duco Jansen](#), Vanderbilt Univ. (United States)

## Call for Papers

The basic mechanisms of laser tissue and cell interactions fall into three categories: photochemical, photomechanical, and photothermal. These mechanisms form a fundamental basis for the field but are now expanded to include the cellular and bio-molecular response to irradiation from lasers and laser systems both in vitro and in vivo. Understanding the fundamental mechanisms of interactions between light, tissue and cells is the basis for the development of future biomedical optic technologies that include both therapeutic and diagnostic applications.

This conference will focus on papers which examine the fundamental mechanisms of the light-tissue interaction, at both the tissue and cellular levels, and their role in the emerging optical technologies for biomedical applications. As a special focus, we invite researchers examining these fundamental mechanisms in the context of nanomedicine. The conference seeks papers regarding both theoretical and experimental approaches, including approaches for advanced numerical simulations. The aim of this conference is to provide a forum for those investigating fundamental physics, biochemistry, and biology in order to seed future engineering approaches. The conference identifies optical technologies that will be useful in addressing problems of biomaterials, tissue engineering and tissue mechanics.

This year's conference will include a special section on Terahertz and Ultrashort Electromagnetic Pulses (uSEP) for Biomedical Applications. This special session aims to highlight (uSEP) and THz source development, biological applications, and fundamental interactions with tissues, cells, and biomolecules. Scientific papers that push the state-of-the-art are solicited.

A preliminary list of session topics is listed below. Please include these terms in abstracts for the purpose of organizing sessions.

- photothermal interactions
- photochemical and photo-oxidative interactions
- photomechanical effects
- mechanisms of pulsed laser ablation
- ultrafast pulsed laser interactions
- fundamental mechanisms in nanomedicine
- optical monitoring of tissue mechanics
- optical properties of tissues



- cellular micro-and nanosurgery
- cellular biomolecular response
- mechanistic studies of laser welding and soldering of tissue
- numerical approaches simulating laser-tissue interactions and response
- nanosecond electric pulse bioeffects
- THz technology, sensing, and biological effects.

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