



Biomedical Optics in Cell Biology

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Message from the Guest Editors

Dear Colleagues,

Biomedical optics play an increasing role in the diagnosis and treatment of patients, as well as in advanced studies in cell biology. In the latter case, novel methods of 3D microscopy based on various kinds of illumination patterns (wide field, focused laser beam, structured, or light sheet) are adapted for investigations of 3-dimensional cell cultures, tissues or whole organs. In addition, laser-assisted micromanipulation, e.g. optical tweezers or optoporation techniques, have been revealed as helpful tools for diagnosis or treatment of single cells. In vitro diagnostics often requires methods of (super-resolution) microscopy, hyperspectral imaging or fluorescence lifetime imaging as well as application of opto-acoustic methods, high-content reader systems or optical biosensors. Deconvolution, automated image processing and machine learning have become valuable tools for the evaluation of large data sets. Contributions on all these and related techniques, as well as their application to various fields of cell biology, are welcome in this Special Issue.





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Message from the Editor-in-Chief

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