

## Compact solution for implementation of various laser based techniques into optical microscope

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*We present a method that provides an easy implementation of a laser beam into optical microscope without modifications of the original optical path of the microscope. Its applications in optical trapping, laser dissection, FRAP and Raman microspectrometry will be presented.*

In the nowadays optical microscopy techniques it is essential to have a flexible tool than enables fast and easy implementation of various sources of radiation into optical microscope. It is highly appreciated if such modifications can be done by the operator without special skills in optical components adjustment. We developed two such modules, one with implemented laser source and the other connected to the laser by an optical fiber connector. The module is placed in between the microscope body and the objective and therefore no modification of the microscope is needed. Our concept allows using arbitrary source of laser radiation, but the spectral properties of each module cannot be changed when completed. We tested the modules with various laser sources and we proved that they can be used as optical tweezers, optical scalpel, localized source of fluorescence, for example for FRAP technique, or as Raman tweezers. Examples of various applications will be presented.

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### References

- [1] M. Šerý et al, Proceedings of SPIE vol. **6609**, (2007)