

Call for Papers
1st workshop on
Optical microscopy techniques
in conjunction with ICTON
20th Anniversary International Conference on Transparent Optical Networks
July 1 – 5, 2018 – Bucharest, Romania
<http://icton2018.upb.ro/>

Technically (co-)sponsored by University Politehnica of Bucharest

Scope of the workshop

Optical microscopy is regarded as one of the most significant tools in the development of science and technology. Since its initial invention in the late sixteen century, the microscope has earned a reputation of enabling the visualization of objects (or fine structures) that are usually invisible to the naked eye, thus shaping various disciplines such as biology, medicine and materials science. The capability of this technique, to sketch the boundary of microstructures, measure surface morphology and localize specified molecule distributions *in vivo*, has driven modern research. In this moment the lateral resolution that can be achieved by using now classic techniques of scanning laser microscopy such as Confocal Scanning Laser Microscopy (CSLM), Multi-photon Excitation Laser Scanning Microscopy (MPLSM), Second and Third Harmonic Generation Microscopy (SHG/THG), is limited by diffraction and can go as low as 200 nm, depending on the wavelength being used. A similar resolution is available by Coherent anti-Stokes Raman scattering (CARS) microscopy, an imaging technique that can be used to visualize label free samples based on contrast derived from molecular vibrations. A series of super-resolution laser scanning techniques based on fluorescence have emerged in the last two decades, such as Stimulated Emission Depletion Microscopy (STED), Fluorescence Photo activation Localization Microscopy (f-PALM) or Stochastic Optical Reconstruction Microscopy (STORM), succeeding in overcoming the resolution limits imposed by diffraction, offering routine resolutions of ~50 nm, and up to 10 nm in special configurations. Optical resolutions in the same range have become available as well by a scanning probe technique, Scanning Near-Field Optical Microscopy (SNOM), a technique that offers optical information from the near-field of the sample. In the frame of the workshop are presented some of latest innovations in optical microscopy techniques and their application in biology, medicine and the material sciences.

Topics of relevance include but are not limited to:

- Confocal and multiphoton excitation microscopy
- Coherent non-linear microscopies: SHG, THG, SFG, CARS
- Super-resolution nanoscopy imaging: STED, PALM, STORM, GSDIM, SOFI and related techniques
- Adaptive optics for microscopy
- Light sheet microscopy
- OCT, holographic, endoscopy
- Advanced fluorescence imaging/spectroscopy: FRET, FRAP, FLIM
- Structured illumination microscopy
- Near field optical microscopy
- Image processing in optical microscopy
- Correlated microscopy techniques
- Fractal analysis of the microscopy images

Technical Program Committee

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Paper submission

According to ICTON submission rules at <https://www.itl.waw.pl/konferencje/icton/icton2018> (max. of 4 pages in MS Word accompanied by a PDF version), please write OMT in the subject line when submitting your contribution. All accepted OMT papers will be included in ICTON 2018 Proceedings (IEEE publication). Please, send your paper to <https://www.itl.waw.pl/konferencje/icton/icton2018> by March 31, 2018. The authors will be notified on the acceptance by April 30, 2018. Post-deadline papers with very recent results are requested by June 1, 2018.