

Workshop on Electromagnetics of Microwaves, Submillimeter and Optical Waves XX

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The main goal the Conference is to discuss the recent developments and applications of laser, optical and electromagnetic technologies in engineering, medicine and

biology, material and environmental sciences, nanotechnology, nonlinear dynamics, laser systems, laser spectroscopy and molecular modeling. The main attention will be paid to fundamentals and general approaches of description of nonlinear and nonstationary electromagnetics for optics, biomedicine, active and passive photonics and metamaterials, interactions with nonlinear media, inhomogeneous scattering media, photonic crystals, tissue phantoms, and various types of tissues *in vitro* and *in vivo*. Another trend is the nonlinear dynamic and electronics applications to various engineering and practice problems.

Topics

The scientific program will include but is not restricted to the following topic areas:

- Antennas and propagation
- General electromagnetic field theory
- Nonstationary electromagnetics, pulse generation and propagation
- Nonlinear electromagnetics and electronics
- Diffraction and scattering of waves
- Resonators, waveguides, transmission line discontinuities and units
- Microwave, millimeter, sub-millimeter and optical wave radio physics and electronics
- Electromagnetic methods in optics
- Electromagnetics in biomedical applications
- Electromagnetics for condensed and artificial media, metamaterials, photonic crystals, left-handed materials
- Nonlinear dynamics
- Sensors and measurements
- Boundary value problems and algorithms