

Microwave and optical bioelectrodynamics at the nanoscale and molecular level

Michal Cifra, Institute of Photonics and Electronics, Czech Academy of Sciences

Abstract:

First part of the talk will demonstrate how our microwave chips enable probing of electromagnetic properties of microvolume biomolecular solutions and how these properties can be predicted by molecular modeling. In the second part, it will be explained how reactive oxygen species formed in cells and biomolecular systems generate ultra-weak photon emission and how this photon emission can be measured and exploited for non-invasive and label-free monitoring of oxidative processes and stress.