

Optical technologies in Skin Cancer research

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Skin cancer is one of the most common malignancies globally. The incidence of melanoma and non-melanoma skin cancer has increased worldwide in recent decades. Skin biopsy based on clinical assessment is the current gold standard care for screening malignancy suspicious skin lesions. Recent reviews have shown several excised skin lesions suspected of malignancy were nonmalignant. With considering biopsy complications, it is needed multiple random biopsies in the case of extended suspicious lesions.

By developing optical biosciences, visualization, characterization and quantification of normal and pathological samples has been accessible using non-ionizing "light-based" technologies including optical imaging and spectroscopy. Based on the light-tissue interaction optical technologies can provides structural and functional information on target samples.

Various types of optical imaging can be applied for early cancer screening, guided biopsies and monitoring therapies. In addition, optical spectroscopy techniques also as non-ionizing, non-

destructive, and real-time technology for characterizing biological tissue and samples. The sample is illuminated with visible-NIR light and the optical features of the tissue can be described on the basis of its absorption and scattering properties. Optical spectroscopy has shown to improve screening and monitoring practices in the field of skin cancers.

Biography

Afshan Shirkavand, is an Expert in the field of [Medical Physics](#), [Biomedical photonics](#) and an author of more than 30 publications, and book in therapeutic applications of LLLT; Dr. A Shirkavand has been young scientist awardee of the first international MEFOMP and also award winner of the Tehran Province National Elites Foundation. She is currently a faculty member of [Medical laser](#) department of [Medical Laser Research Centre](#) (MLRC), ACECR in Iran.

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