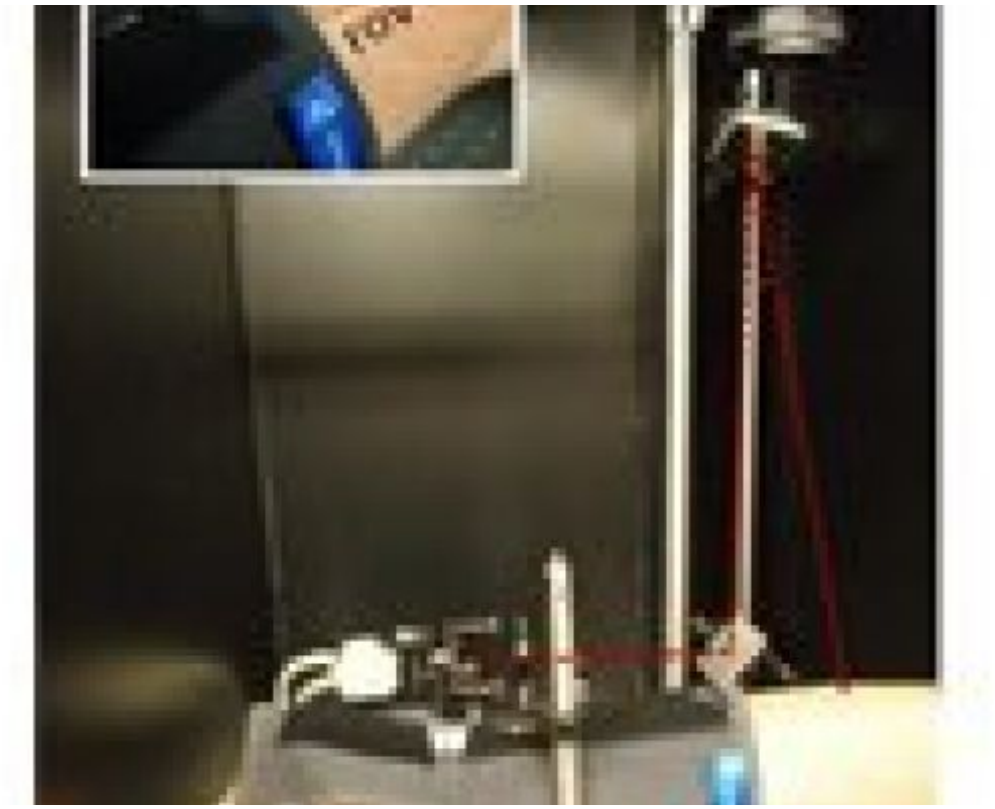


Speckle contrast optical spectroscopy

A new non-invasive, diffuse optical method for measuring microvascular blood flow in tissue

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ICFO Researchers Claudia Valdes and Hari Varma from the Medical Optics group led by Professor Turgut Durduran, in collaboration with Professor Joseph Culver of Washington University in St. Louis, MO (USA) introduce a new, non-invasive, diffuse optical technique, speckle contrast optical spectroscopy (SCOS), for probing deep tissue blood flow using the statistical properties of laser speckle contrast and the photon diffusion model for a point source.

This work has been published in *Biomedical Optics Express*.

The feasibility of the method was tested in tissue simulating phantoms and demonstrated in

vivo measurement in a human forearm muscle. The method promises to be a cost-effective, practical alternative to other similar methods and as demonstrated in an accompanying paper will allow a tomographic 3D imaging of blood flow in tissues.