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INTRODUCTION: SPECIAL ISSUE ON ADVANCES IN BIOPHOTONICS AND BIOMEDICAL OPTICS — PART II

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The 5th Russian−Chinese Workshop on Biophotonics and Biomedical Optics was hosted in Saratov, Russia on 26−28, September, 2012. The bilateral Workshop brought together both Russian and Chinese scientists, engineers and clinical researchers from a variety of disciplines engaged in applying optical science, photonics and imaging technologies to problems in biology and medicine. During the Workshop, 2 plenary lectures, 11 invited presentations, 4 oral presentations and 13 poster reports were presented. A special Internet session with 5 presentations — 1 plenary, 2 invited, and 2 posters, was also organized. This special issue selects some papers from the attendees, and is made up of 12 original research articles and one review. Seven articles have been presented in Vol. 6, No. 1 of JIOHS; this issue presents the remaining six articles.

Various optical methods, such as laser confocal microscopy, backscattered probing and OCT, were used to investigate mesh implants. Different methods can provide different information. Joint usage of various techniques allows researchers to accurately ascertain implant and surrounding tissue conditions, which reduces the risk of relapse probability.[1]

Yanina *et al.* used OCT to monitor dynamical changes in the structure and refractive index distribution of adipose tissue during photodynamic and/or selective photothermal treatment. The results demonstrate that both treatments can induce fat cell lipolysis during a certain period of time after light exposure.[2]

Since Julia Skibina *et al.* firstly reported the hollow core photonic crystal waveguides (PCW) with chirped cladding in *Nature Photonics*, a number of PCW multifunctional optical sensors and sample collectors as well as their biomedical applications for glucose, vitamin sensing, and blood type identification were demonstrated. In this issue, they showed some results on artificial sweetener identification in drinks, which prove the high sensitivity of PCW to the optical properties of liquids filling up the hollow core.[3]

Noise reduction is a very important process when following operations to analyze and recognize tissue structure. In this issue, a new de-noising method for OCT images based on Empirical Mode Decomposition is proposed.[4]

Oliveira *et al.* performed a set of optical measurements, such as total transmittance, collimated transmittance, specular reflectance and total reflectance, to evaluate the dynamical optical clearing efficacy of rat muscle, which will be helpful in exploring the mechanism of tissue optical clearing.[5]

Fiber optical nasopharyngoscope with video recording has become possible to directly visualize the passages of upper and lower airways, but quantitative analysis has been technically challenging. Here, Linghong Deng describes an automatic image processing method that allows batch analysis of the images recorded during the endoscopic procedure.[6]

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