2021/5/12

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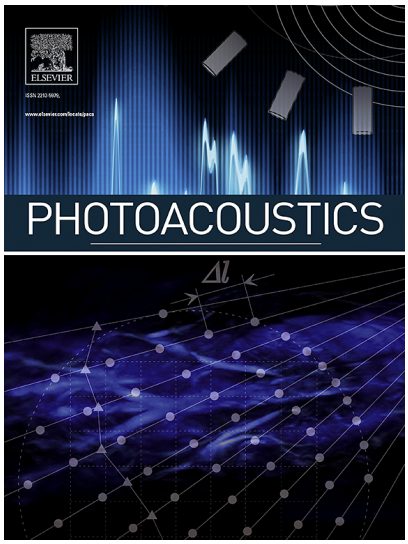
【News】A collaborative research paper on Acoustic X with Cambridge University is published

CYBERDYNE INC. [Tsukuba, Ibaraki, CEO: Yoshiyuki Sankai (the "Company")] announces that a peer-reviewed research paper on Acoustic X (photoacoustic imaging device that utilizes LED array light source) is accepted for publication in the Photoacoustics journal. Professor Sarah Bohndiek and Dr. James Joseph from VISION lab in Cancer Research UK Cambridge Institute (Group led by Professor Bohndiek) and two members working as researchers of the Company, Mithun Kuniyil Ajith Singh and Naoto Sato are the authors of this paper.

This article is the first peer-reviewed journal paper written by the related members of the Company and Cambridge University together and is accepted for publication in Elsevier-Photoacoustics journal, one of the top science journals in the field of photoacoustics. The chief editor of this prestigious journal is Prof. Alexander Oraevsky, one of the pioneers in the field of biomedical photoacoustic imaging.

1) Title of the paper:
Technical validation studies of a dual-wavelength LED-based photoacoustic and ultrasound imaging system

Link to the paper
https://www.sciencedirect.com/science/article/pii/S2213597921000288



2) Authors:
James Joseph, Ph.D.,
Mithun Kuniyil Ajith Singh, Engineering scientist,
Naoto Sato, Research manager,
Sarah E. Bohndiek, Ph.D.,

Link to Cancer Research UK Cambridge Institute
https://www.cruk.cam.ac.uk/research-groups/bohndiek-group

Link to Bohndiek Group website
http://www.bohndieklab.org/

3) Abstract:

Recent advances in high power, pulsed, light emitting diodes (LEDs) have shown potential as fast, robust and relatively inexpensive excitation sources for photoacoustic imaging (PAI), yet systematic characterization of performance for biomedical imaging is still lacking. We report here technical and biological validation studies of a commercial dual-wavelength LED-based PAI and ultrasound system. Phantoms and small animals were used to

assess temporal precision. In phantom studies, we found high temporal stability of the LED-based PAI system, with no significant drift in performance observed during 6 h of operation or over 30 days of repeated measurements. In vivo dual-wavelength imaging was able to map the dynamics of changes in blood oxygenation during oxygen-enhanced imaging and reveal the kinetics of indocyanine green contrast agent inflow after intravenous administration (Tmax~6 min). Taken together, these studies indicate that LED-based excitation could be promising for future application in functional and molecular PAI.

<Link>
journal homepage：https://www.journals.elsevier.com/photoacoustics