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강연제목: Motion-contrast optical microscopy and its applications

Abstract: The motion of biological cells is crucial for maintaining the biological functions of living systems. For instance, the flow of blood and the drift of red blood cells (RBCs) through vessel lumens deliver oxygen and nutrients to surrounding tissues, which is essential for tissue viability. This passive or active motion can serve as indicative biomarkers for evaluating cell metabolism and overall health status. Therefore, there is a pressing need to develop optical microscopy techniques to measure these biological dynamics. In this presentation, we introduce recent advancements in microscopy technologies aimed at qualitative and quantitative assessing cerebral blood flow *in vivo*, as well as the motility of ciliated cells in lung organoids *in vitro*.

Brief Biosketch

Woo June Choi received Ph.D. in biomedical optical imaging from the Gwangju Institute of Science and Technology (GIST), Korea, in 2012. He then pursued a research career as a postdoctoral fellow at the Korea Basic Science Institute (KBSI) and the University of Washington, USA, until 2018. He is currently an associate professor in the School of Electrical and Electronics Engineering at Chung-Ang University (CAU), Korea. His research interests include the development of novel optical imaging techniques and methodologies in biophotonics, especially in optical coherence tomography (OCT), motion-contrast microscopy, Raman spectroscopy, and thermoreflectance microscopy (TRM).