

〔国際会議発表〕

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国際会議名	2024 IEEE Biomedical Circuits and Systems Conference (BioCAS)	
国際会議主催者	IEEE Circuits and Systems Society (CAS)	
開催地	西安市/中国	
渡航期間	2024 年 10 月 23 日～2024 年 10 月 28 日（6 日間）	
発表論文名	Effects of Excitation Light Polarization with Front-Light Structure on Lensless Fluorescence Imaging	

〔国際会議の概要〕

The 2024 IEEE Biomedical Circuits and Systems Conference (BioCAS) took place from October 24 to October 26, 2024, in Xi'an, China. This event served as a leading international forum for interdisciplinary research that connects biomedical sciences, engineering, and physical sciences. The conference highlighted innovations in medical devices and healthcare technologies, promoting collaboration among researchers, engineers, and clinicians to enhance human health.

- ・ The key themes included advancements in biomedical circuits and systems with a focus on healthcare innovation, life sciences applications, and emerging technologies.
- ・ The conference program included technical sessions, poster presentations, and keynote speeches, highlighting innovative advancements and encouraging discussions about future trends in the field.

Additionally, this year was significant as it marked the 20th anniversary of the BioCAS conference series, celebrated during the event.

〔参加の目的〕

Our lab is committed to understanding the complex mechanisms of the brain, with the conclusive goal of improving treatments for human brain diseases. To achieve this, we have independently developed an implantable micro-imaging device with a lens-less structure that allows us to observe fluorescence living organisms inside the brain with minimal damage. At the BioCAS conference, I intended to spread out our highly novel device and our new strategy for increasing the effectiveness of lensless fluorescent imaging, such as the front-light structure, in my accepted paper. After the presentation, I look forward to receiving insights and ideas from the audience to improve its performance further.

〔意義〕

During the event, I seek to gain and update insights into the latest advancements and trends in health-promoting research from other participants. Especially on computational imaging techniques to reconstruct high-resolution fluorescent images and the application development of sensor devices with other participants. I hope it pushes the boundaries of

what is possible and keeps our research at the forefront of medical engineering advances.

〔自分の発表の状況・反応と得られた成果・効果〕

At the conference event, I presented my research as part of the poster program in the device and system section on 2024 October 24th. My presentation schedules were from 9:30 a.m. to 10:30 a.m. and from 4:00 p.m. to 4:30 p.m. In addition to my section, there were several intriguing poster themes, including brain-computer interfaces, wearables and implantables, and biosignal recording and processing. A photograph of me with my poster is included at the bottom of this document.

During my presentation, I had a wonderful opportunity to discuss and exchange ideas with fellow presenters and specialists from various fields, such as circuit and system design for neural imaging applications and advanced biomedical signal processing. These discussions were especially insightful, with attendees asking thoughtful questions and providing suggestions that offered new perspectives to address the existing trade-offs in fluorescent imaging systems. Based on these interactions have become a great guide to achieving my research goals with effective advancement.

In addition to presenting my work, I made connections with many attendees, particularly researchers from my generation. These relationships continued beyond the conference, idea-sharing, and mutual consultation on our work.

Lastly, attending the BIOCAS conference was an inspiring and motivating experience. It not only strengthened my commitment to achieving my research objectives but also reinforced my drive to promote harmony between man and machine in the future.

