

生物医学中的光学/光子方法

【项目描述】：在过去的几十年里，单分子实验方法得到了广泛应用，因为它们可以在单分子水平上直观、定量地研究生物相互作用的动态，而这是冷冻电镜等其他模式无法实现的。此外，作为生物医学领域的一种光学/光子方法，单分子 TIRF (全内反射荧光) 显微镜系统已成为一种最佳方法，通过检测单分子 FRET (荧光共振能量转移) 或跟踪单分子荧光团，可提供大量其他单分子方法无法比拟的实验数据。然而，对于某些生物过程来说，直接连接体内生物现象仍然受到限制。因此，我们在此提出一种被改进的单分子 TIRF 系统平台，它可以更密切地研究体内生物过程，从而提供更好的医学洞见。本项目将创建一种新方法，将以前的过程进行整合和合并，并开发一个符合我们要求的新平台，因此要求所有成员具有挑战性和创新性。

【职位概述】：我们正在寻求一位基础扎实、自我驱动，对基础数学理论和应用感兴趣，且愿意合作并具备独立研究思考能力的科研助理。理想的候选人至少应具有交换代数和同调代数方面的基础知识储备，并有过相关或其他代数领域方面的科研经历。候选人将在环与代数方面开展基础研究工作，通过与团队成员的密切合作，在国内外相关领域期刊上发表相关学术论文。通过聚焦性科研延展项目 (FREE)，候选人将有机会获取开展研究工作所需的专业技能和素养，从而增加申请博士或硕士研究生项目获批的可能性。

【职位要求】：

- 任何工程或科学领域或相关领域的硕士或学士学位，侧重于生物或生物医学科学或工程、生物物理。
- 有光学方面研究经验者优先。
- 有实验测试和设计经验者优先。
- 有生物或生物医学技术方面的经验。

有关此职位的问题，请联系 Dr. Jeungphill Hanne，邮件地址：jeungphill.hanne@scupi.cn

An Optical/Photonic approach in the Biomedical science

Project Description: Over the past few decades, single-molecule experimental methods have been widely used because they can visually and quantitatively examine the dynamics of biological interactions at the single-molecule level, which is not possible with other modes such as cryo-electron microscopy. Moreover, as an Optical/Photonic approach in the biomedical science, the single molecule TIRF (Total Internal Reflection Fluorescence) microscope system has been a flagship method and enabled to provides a great amount of the experimental data incomparable to the other single molecule methods by detecting single molecule FRET (Fluorescent Resonance Energy Transfer) or tracking single molecule Fluorophore. However, for some biological processes, it has been still limited to directly connect the *in-vivo* biological phenomena. Therefore, here we propose an improved platform of the single molecule TIRF system, which can more closely study on the *in-vivo* biological processes, which thereby provide the better medical insight on it. Since this project encompasses the creation of a new method, which incorporates and merges the previous processes and develop a new platform to fit our requirement, all the members are required to be challengeable and innovative.

Job Description: We are seeking a highly motivated and active research fellow specializing in any field of Engineering or Science, or related field with a focus on the bio, or biomedical science or engineering. The ideal candidate will be one who is very willing to learn the new technologies, or areas in science and furthermore consider this is his, or her own project (Ownership). The research fellow will play a key role in executing this project by managing, designing, implementing, performing the experiment and analyzing the data. Collaborating closely with a diverse team of researchers and engineers, you will actively contribute to the development and submission of research papers in decent reputable journals. Throughout the experience as a Focused Research Extended Experience (FREE) research fellow, you will be able to cultivate the relevant research and practical skills in a focused and extensive manner such that enhancing your chances for advancing graduate studies or getting a long term well-paid industrial job.

This position commences in or after early 2024, with individuals anticipated to initiate their responsibilities no later than Spring 2024. The term of employment spans two years, and the contract is structured for annual renewal.

Qualifications:

- Master's or Bachelor's degree in any field of Engineering or Science, or related field with a focus on the bio, or biomedical science or engineering, biophysics.
- Plus on the experience with the Optics.
- Plus on the experience with the experimental test, and design.
- Plus on the experience of the biological or biomedical technologies

For questions regarding this position, please contact Dr. Jeunghill Hanne, at jeunghill.hanne@scupi.cn