



Title: A POCT to rapid detect GBS with highly sensitivity

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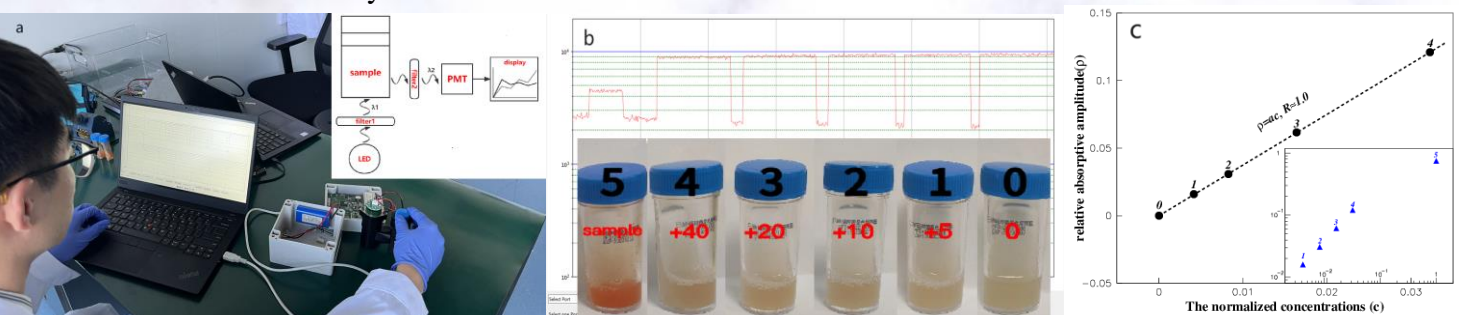
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Abstract:

Group B streptococcus (GBS) is a leading cause of invasive neonatal infections and a significant pathogen in immunocompromised adults. Screening of GBS colonization in pregnant women determines the need for antibiotic prophylaxis in that pregnancy. In recent years, there has been rapid expansion in the availability of chromogenic media for the detection of GBS. These culture media contain enzyme substrates linked to indoxyl chromogens, and the target microorganisms are characterized by specific enzyme systems that metabolize the substrate, resulting in release of the chromogen. Subsequently, the indigoid dye formed upon oxidation and dimerization of indoxyl molecules in the presence of oxygen precipitates within the colonies, leading to typical brightly contrasting colors (shown in Fig.b). Therefore, the amplitude of the contrasting is positively to concentration of GBS. However, the traditional visual identity usually needs at least 72 h to determine whether the GBS colonize, thus, a rapid highly sensitive detection of GBS is urgent. Here, we set up a POCT (shown in Fig.a) with specific spectral absorption (λ_2) of chromogenic culture media to replace the traditional visual identity of GBS, the measurable absorbed amount of light is indirectly proportional to the concentration of GBS (shown in Fig.c), which greatly improved the sensitivity of GBS detection, and decreased the time to identify it.



Biography:

Prof. Yao-Gen Shu received his Bachelor of Electronic Engineering in July 1985 at Zhejiang University, and then worked on industrial automation till 1999. He received his Ph. D in 2004 at the Department of Physics of Xiamen University. From 2004 to 2009, he worked as a Postdoctoral with Prof. Zhong-Can Ou-Yang at the Institute of Theoretical Physics (Chinese Academy of Sciences) and Prof. Pik-Yin Lai at the National Central University (Taiwan) respectively. From 2010 to 2019, he worked as an assistant Professor in Institute of Theoretical Physics (Chinese Academy of Sciences). In 2020, he moved to Wenzhou Institute (University of Chinese Academy of Sciences) and be promoted to Professor. His research focuses on molecular motors, biosensor, nanodevices, and so on. Currently, he have developed some highly sensitive, rapid and quantitative detection methods about biomarkers.