

平成 25 年度 傾斜的研究費（全学分）上位科研費申請支援 研究報告書

【研究費区分】：上位科研費申請支援

【研究代表者所属】：都市環境学部 分子応用化学コース

【研究代表者氏名】：曾湖烈

【研究代表者氏名フリガナ】：ゼン フーリエ

【研究代表者職】：助教

【研究分担者（所属,氏名,職）】

.

【研究課題名】：Construction of portable automatic ELISA system for on-site diagnosis and screening

【研究実績の概要（200 字程度で記入。図，グラフ等の使用も可。）】

With the financial support, we successfully took the first step to develop the automatic ELISA system for on-site diagnosis and screening, and constructed the chemiluminescence immunoassay on multicapillary glass plate to simplify the traditional ELISA process. The boring and tedious washing steps in conventional ELISA procedure was simplified and performed set on the multicapillary glass plate to complete the solution pass through/hold on at the same plate. It is the critical process to simplify the ELISA procedure and construct the automatic ELISA strategy. The basic approach to complete the ELISA on multicapillary glass was confirmed. In the following period, we will carry out the practical automatic instruments for ELISA.

We also have explored the tunable ejection of monodisperse droplets in liquid including oil droplets in water (O/W) and water droplet in oil (W/O), which is the simple approach to generate the liquid droplets in liquid to replace current microfluidics droplet generator in analytical chemistry. It will be a convenient droplet generator to complete the detection of DNA in plasma in seconds, to obtain the on-site inspection of pollutions of river water and the flow rate. The above two applications both could be developed to the compact instruments, and applied in bio-analytical chemistry and environmental analysis.

【科学研究費補助金への応募状況，採択状況】

- 1) 2014 年度 / 平成 26 年度 若手研究 (A) , Synthesis of electro-switchable polymer and its applications 応募済;
- 2) 2014 年度 / 平成 26 年度 挑戦的萌芽研究 Novel western blotting procedure utilized electro-switchable membrane 応募済.

.

【国等の提案公募型研究費，企業からの受託研究費・共同研究費の獲得状況】

・