

シンポジウム

2026年10月17日(土) 13:50 ~ 15:20 | 第5会場

[SY6] シンポジウム 6 『多言語同時翻訳セッション』 国際的視野で育む薬剤師の実践力：AI、ICT、公衆衛生を軸に」

座長兼オーガナイザー：川崎 直人(近畿大学薬学部 教授)

[SY6-2] Smartphone-Based Quantification of Chemicals and Pharmaceuticals for School Environmental Health Management

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The development of green pharmaceutical analysis has increasingly focused on environmentally benign and human health-friendly approaches to minimize the adverse impacts associated with chemical usage and production. Various strategies have been implemented, including the miniaturization of analytical procedures and the substitution of hazardous chemicals with safer alternatives. Vegetable oils have been developed as natural solvents to replace conventional organic solvents in the analysis of active pharmaceutical ingredients (APIs), including diphenhydramine and chlorhexidine. In addition, smartphone-based colorimetric methods have been established for the determination of several APIs, such as ciprofloxacin, tetracycline, amoxicillin, ampicillin, benzalkonium chloride, and peracetic acid, enabling practical applications in pharmaceutical quality control. Furthermore, smartphone-based colorimetric techniques have been developed for the determination of nitrate-nitrogen, phosphate-phosphorus, and potassium in soil samples, as well as nitrogen dioxide and ozone in ambient air. The integration of miniaturized analytical approaches with smartphone-based detection contributes to sustainable development in Thailand, particularly with respect to SDGs 4, 6, 10, 12, and 14.

学校環境衛生管理のためのスマートフォンを用いた化学物質および医薬品の定量分析

グリーンファーマシューティカルアナリシスは、環境や人体への負荷低減を目的とした分析法開発であり、分析操作の小型化や有害化学物質の代替が進められている。本講演では、植物油を用いた医薬品分析や、スマートフォン比色分析による医薬品成分、土壌成分、大気汚染物質の測定法を紹介する。これらの小型分析技術とスマートフォン検出法の統合は、タイにおけるSDGs達成に貢献する持続可能な分析技術として期待されている。

【略歴】

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- ・研究分野：グリーンかつ持続可能な医薬・化学分析、天然由来活性医薬品成分（NAPIs）、骨関連疾患のシグナル伝達経路
- ・スマートフォンを活用したダウンスケール分析法および天然由来活性医薬品成分（NAPIs）の探索・開発分野において、国際的に論文発表および学会発表を行っている。