



Ting-Yu Huang

Dissertation Defense College of Criminal Justice Department of Forensic Science Doctor of Philosophy, Forensic Science

Development of Nanomaterials in Solid Phase Microextraction and Application of Artificial Intelligence for Ignitable Liquids Detection and **Classification in Forensic Fire Debris Analysis**

This study aimed to improve the efficiency of sample extraction and data analysis for fire debris samples. Nanomaterials-based solid phase microextraction and intelligent classification systems were developed and applied to simulated sample matrices. Results demonstrated that the proposed methodologies could analyze ignitable liquids in different samples and types (with or without matrix interferences). Those methodologies are intended to assist the current test methods for ignitable liquids analysis adopted by forensic laboratories.

Event Information March 28, 2024 1:00 PM CST Email forensics@shsu.edu Dr. Geraldine Monjardez to attend

Committee Members Dr. Jorn (Chi-Chung) Yu (Chair) Dr. Patrick Buzzini Dr. Qingzhong (Frank) Liu