



**Showcasing research from Professor Yen-Wen Lu's laboratory, Department of Biomechatronics Engineering, National Taiwan University.**

High efficiency sperm enrichment from forensic mock samples in bubble-based acoustic filtration devices for short tandem repeat (STR) analysis.

This paper introduces innovative techniques in microfluidics, employing acoustic streaming and bubble dynamics. It significantly addresses filter fouling, enhances cross-flow efficiency, and improves cell separation. Focusing on enriching sperm with large disparity ratios, the research substantially upgrades STR analysis, marking a major leap in forensic and biological research. This breakthrough offers novel, effective solutions for complex analytical challenges.

**As featured in:**



See Yen-Wen Lu *et al.*,  
*Lab Chip*, 2024, **24**, 434.