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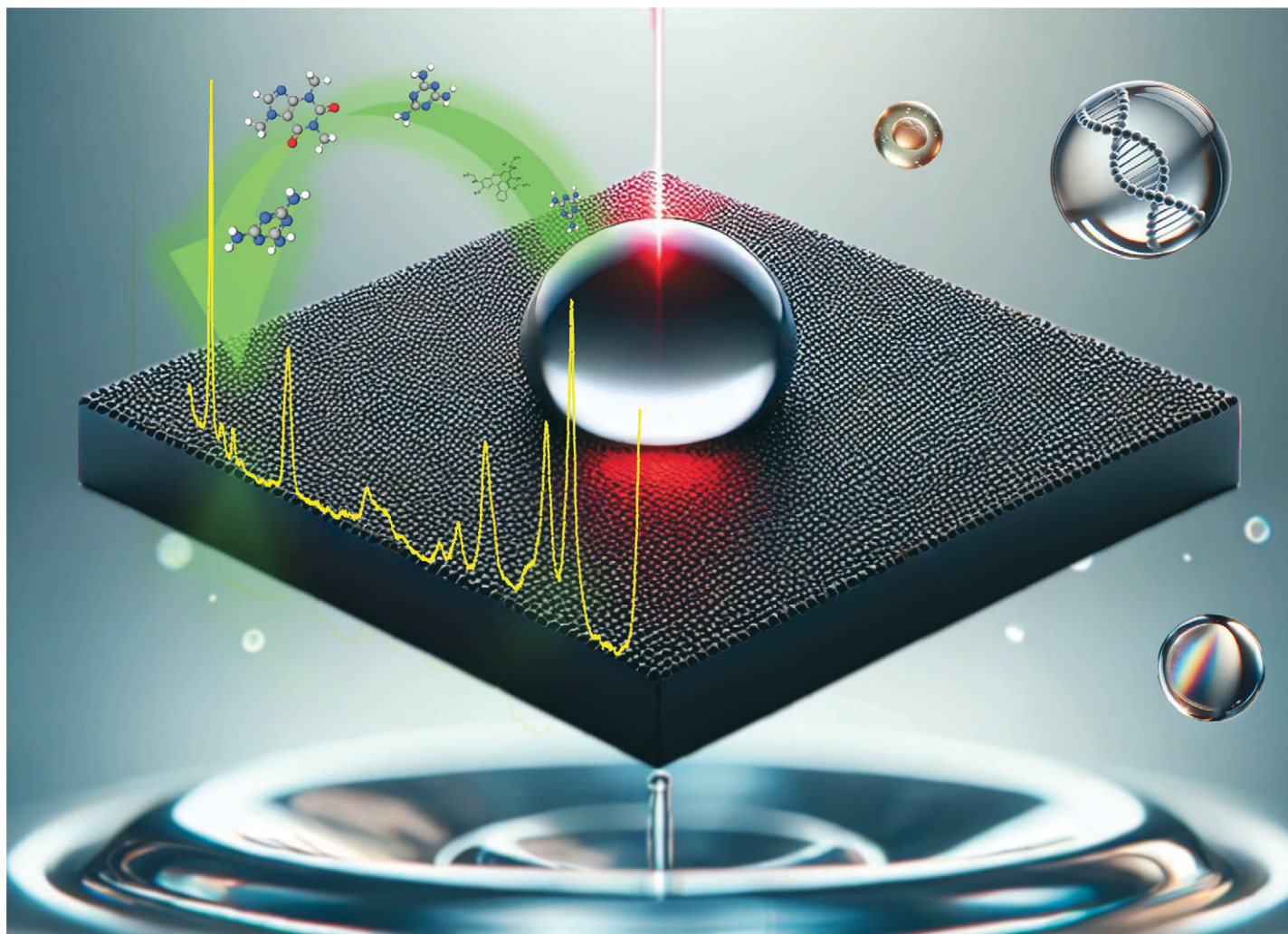
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Showcasing research from Professor Chia-Wen Tsao's laboratory, Department of Mechanical Engineering, National Central University, Taoyuan City, Taiwan

Utilization of microdroplets as optical lenses for surface-enhanced Raman spectroscopy (SERS) enhancement on localized silver nanoparticle-decorated porous silicon substrates

Our study introduces an innovative approach that enhances SERS performance by utilizing water microdroplets as optical lenses on localized silver nanoparticle-decorated porous silicon (LocAg-PS) substrates. This method leverages the hydrophobic properties of the LocAg-PS substrate to precisely position microdroplet lenses over silver nanoparticles decorated pads, forming a plano-convex-like lens that optimizes laser focusing and light collection. Our findings demonstrate that this approach not only increases SERS signal intensity but also improves reproducibility, offering a rapid and cost-effective solution for advanced SERS analysis. Copyright holder: Chia-Wen Tsao.

As featured in:



See Chia-Wen Tsao and Zi-Yi Yang,
Lab Chip, 2024, **24**, 5184.