

Reusable Gold Nanostars Substrates for Signal Amplification for Diagnostics

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Principal investigator

Ulyana Shimanovich

Faculty of Chemistry

Department of Molecular Chemistry and Materials Science

Overview

Numerous spectroscopic techniques rely on signal enhancement from nanoparticles linked to analyte molecules. However, existing surface-enhanced spectroscopies (SES) typically use nanoparticles dispersed in solution, making them unsuitable for solid substrates. This technology introduces spiked gold nanostructures (nanostars) embedded directly on solid-state surfaces to enhance spectroscopic signal detection. Unlike traditional solution-based SES methods, these stable and reusable nanostars enable high-sensitivity signal amplification directly on solid substrates.

Applications

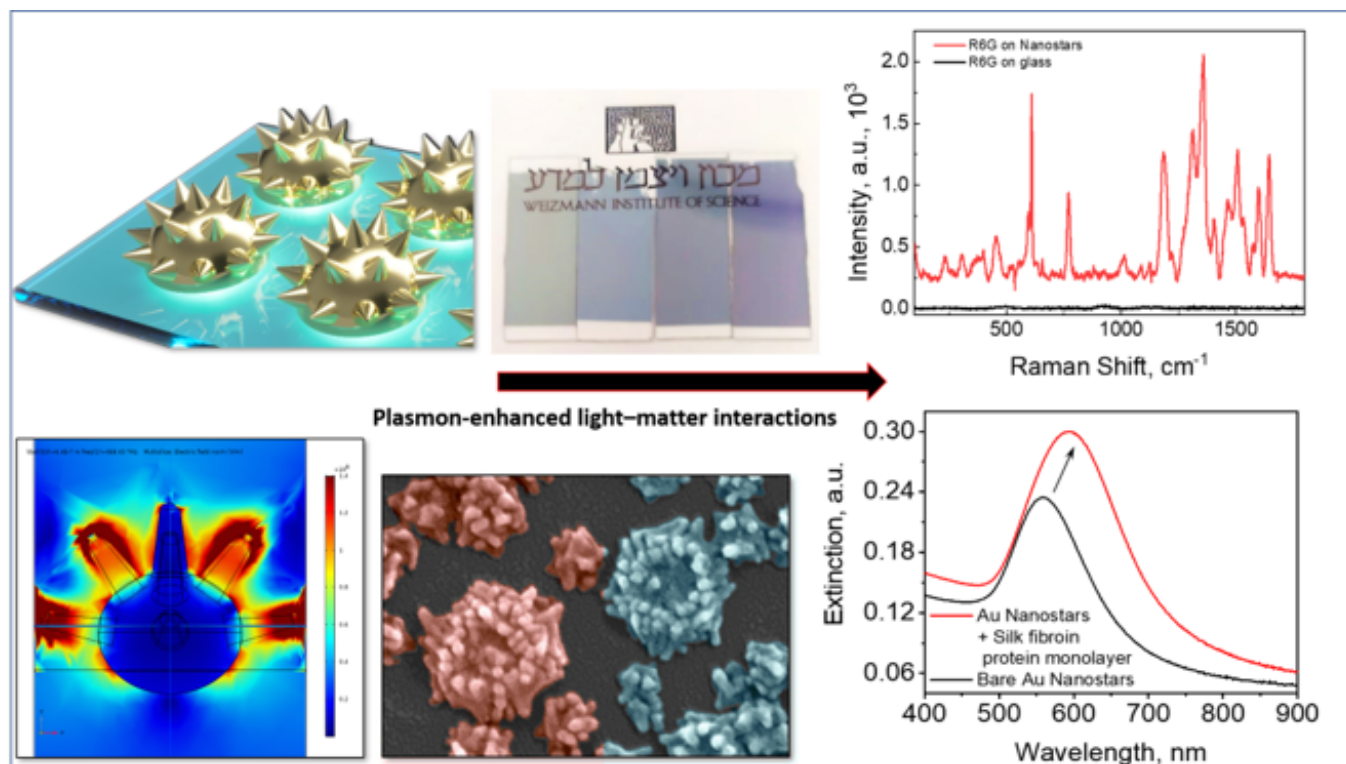
- Signal amplification for spectroscopic techniques: SERS, SECD, LSPR, SEFS
- Medical and chemical diagnostics and treatment
- Catalytic processes
- Optical filters
- Integration into microfluidic devices

Differentiation

- Stable & Reusable
- High Scalability
- Enhanced Signal/Noise
- Simple fabrication
- Compatible with lithographic techniques

Development Stage

The technology has been successfully demonstrated for enhancing spectroscopic signals, including SERS, SECD, and LSPR, using small active molecules.



Patent Status

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