

COLLOIDAL SERS SUBSTRATE

Chemical synthesis of colloidal SERS substrates

APPLICATIONS

- Explosives trace detection
- Drugs trace detection
- Pollutants trace detection
- Forensics : anti-counterfeiting

INTELLECTUAL PROPERTY

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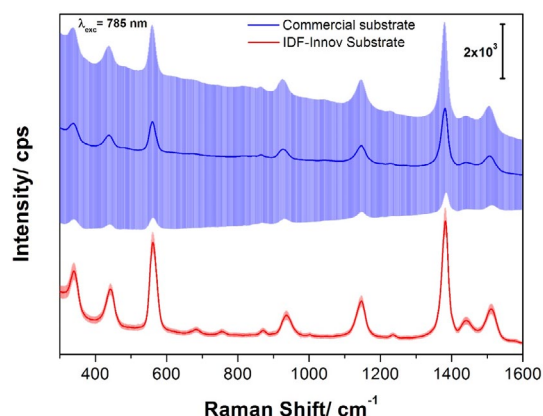
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Raman spectroscopy ■ Self-organization of nanoparticles ■
Trace detection ■ SERS : surface enhanced Raman spectroscopy

PRESENTATION

Every type of molecule has a distinct «Raman signature» that can be enhanced by special surfaces called SERS substrates, standing for "Surface Enhanced Raman Spectroscopy". SERS techniques are useful to detect molecules at very small concentrations (pico or femtomoles per litre). The SERS substrate can either be generic or designed for special applications, such as trace detection of explosives, drugs or pollutants.

Common techniques to produce SERS substrates involve lithography processes, and are thus rather costly. On top of that, measures lack of reproducibility. Our invention is based on a bottom-up colloidal synthesis, as the substrate results of the self-organization of metallic nanorods. Measures are more reproducible and reliable than most commercial substrates with far less variability, hence allowing a better ability to discriminate and to detect traces (see picture).



Comparisons with Ocean Optics using Thiram 500 μ M ©

COMPETITIVE ADVANTAGES

- Reproducibility of measures
- Designed to be cheap
- Shelf time > 7 months