



SERS Substrates

Surface Enhanced Raman Spectroscopy

Ocean Optics SERS (surface enhanced Raman spectroscopy) substrates are easy to use and provide great value for high-sensitivity Raman measurements.

Manufactured using an innovative new technique, our gold SERS substrates let you make fast, repeatable SERS measurements for the identification and quantification of SERS-active analytes. Typical applications include trace level detection of explosives and narcotics and precision screening of food ingredients for controlled additives such as melamine and pesticides. SERS substrates also can be used for authentication and anti-counterfeiting applications using SERS-active taggants.





At a Glance

Substrate material: Gold nanoparticles

Active area: 5 mm diameter

Format: Microscope slide format (standard); other form factors available

Sensitivity: ppm to ppb level sensitivity for wide range of analytes

Measurement speed: Sample to results within seconds

Substrate shelf life: ~30 days

Value-priced package: 5 substrates per pack



Key Applications

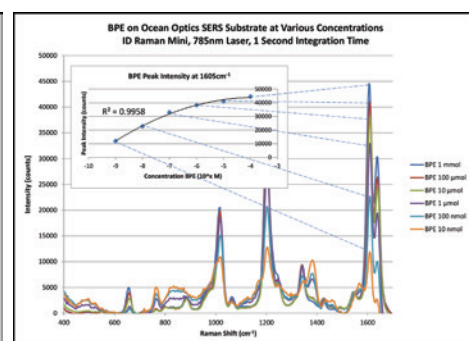
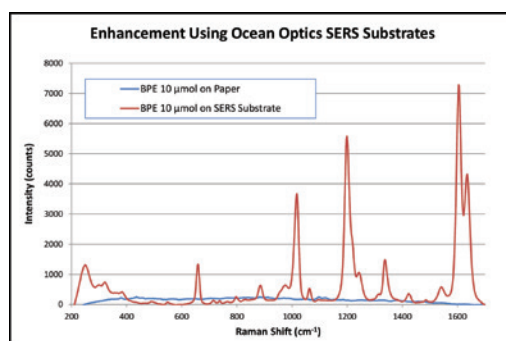
Detection of explosives. Being able to identify trace levels of explosives allows us to better screen for threats at security checkpoints or on the battlefield.

Detection of narcotics. Fast identification of drugs in the field is a real boon for those combating drug-related crime. Often only small residues of a sample can be collected from a crime scene. SERS also opens up a potential route for fast roadside drug screening of drivers using saliva samples.

Food safety. Certain additives such as melamine found in milk powder can be extremely harmful even at very low concentrations. Using SERS, we can qualify and quantify the level of dangerous trace elements in our food supply chain.

Anti-counterfeit tagging. High value products that are subject to duties and taxes — petrol is one example — are often the target of piracy and fraud. By adding a small amount of a SERS-active taggant to the unadulterated product, detecting the presence of the taggant becomes an instant indicator of authenticity.

Biological research. SERS can be used to identify and characterize biological samples including proteins, DNA and bacteria.



Advantages of Ocean Optics SERS Substrates

High sensitivity. Substrates deliver great results and have demonstrated superior sensitivity for a range of analytes when tested against competitor substrates

Great stability. Highly stable substrates require no special handling and can be stored at room temperature

Reliable reproducibility. Highly reproducible and easily scaled manufacturing methods enable sensitive measurements at an affordable price

Customized form factors. Unique production techniques can be tailored to impart specificity to particular analytes (on demand) and custom form factors such as swabs and coatings

Easy to use. For great flexibility, substrates work reliably with the complete range of Ocean Optics Raman instruments

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