



# Silver Nanoparticle SERS Substrates for Raman Spectroscopy



Environment



Food



Medical



Narcotics



Pharmaceuticals



Enhanced detection of  
trace molecules in minutes

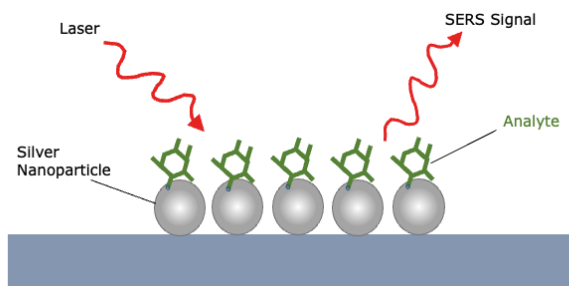
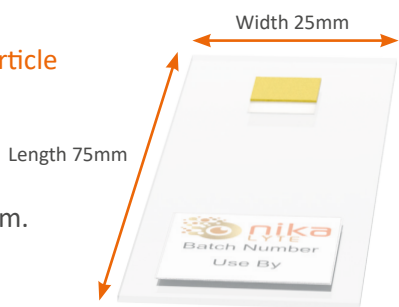
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# Enhanced detection of trace molecules in minutes

## Specifications

Nikalyte Ag nanoparticle SERS substrate.

Dimensions:  
(LxW) 75mm x 25mm.



Surface Enhanced Raman Spectroscopy (SERS) using silver nanoparticles.

<b>SERS active material</b>	Silver nanoparticles
<b>Sensitivity</b>	ppm to ppb
<b>Laser wavelength</b>	785nm
<b>Max laser power density</b>	20W/cm <sup>2</sup>
<b>Analyte application area</b>	4mm x 8mm
<b>Active area</b>	8mm x 8mm
<b>Pack size</b>	5 substrates
<b>Lifetime</b>	3 months

## ...Data

### High Signal Enhancement

Achieve several orders of magnitude signal enhancement compared to standard Raman with Silver SERS substrates, enabling identification of trace levels of molecules in the ppb and ppm range.

### Food Safety

SERS enables fast and low-cost identification of food additives and adulterations, including Tartrazine, Melamine and Caffeine. Fig.1. shows the Raman enhancement for Caffeine solution when measured with silver SERS substrates compared to standard Raman.

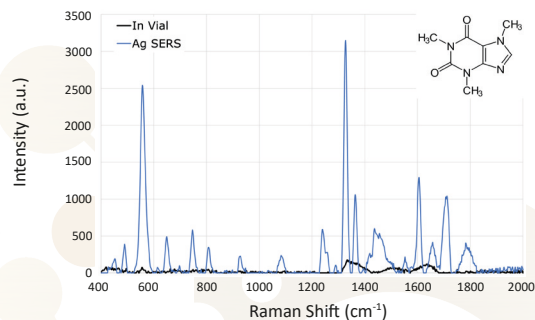


Fig.1. SERS signal enhancement for 1000ppm Caffeine solutions (blue) compared to standard Raman (black) measured at 785nm.

### Biological

Detect trace levels of a wide range of biological molecules including proteins, peptides and other indicative biomarkers using silver SERS. High Raman enhancement is demonstrated for common dyes including Rhodamine 6G and 1, 2, di(4-pyridyl)ethylene, more commonly known as BPE.

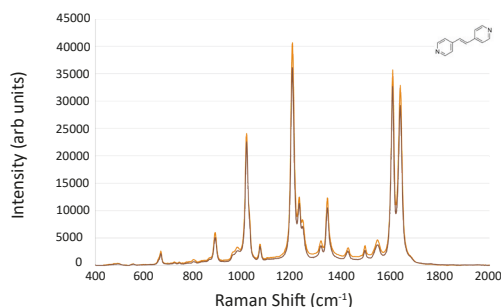


Fig. 2. SERS measurement repeatability for 1000ppm BPE solution measured for 4 different silver SERS substrate at 785nm.

For SERS research the Nikalyte NL50 is the perfect nanoparticle tool visit [www.nikalyte.com](http://www.nikalyte.com)

For further information please contact: [sales@nikalyte.com](mailto:sales@nikalyte.com)

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