

# Customizable SERS substrates dedicated for life science and diagnostic research

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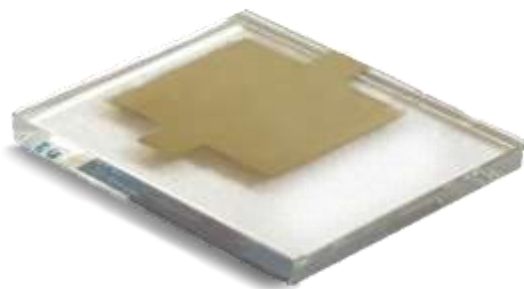
Surface-Enhanced Raman Spectroscopy (SERS) is gaining popularity in the field of life science as it allows us to obtain the fingerprint of a specific substance or even cell type. Thus, SERS is now intensively studied as a promising tool for diagnostic [1], [2] and pathogen identification. SERS-based biosensors and microfluidic systems may be fast and accurate platforms for detecting cancer, food contamination [3], and even viruses identification.

We recently developed sensitive and repeatable SERS silver and silver-gold substrates dedicated for potential use in biosensors and microfluidic systems in diagnostic and life science research. Our platforms are made by the electrodeposition of silver and gold nanoparticles on ITO glass. Our substrates have dimensions dedicated to 96-well plates and give great enhancement in SERS measurements after compound deposition in a small volume and a low concentration (ppm to ppb) of an analyzed solution. Additionally, thanks to a precise laser plotter, we can obtain defined dimensions of substrates. It is especially desirable for the development of “Lab-on-a-Chip” type platforms. Our substrates can exhibit different surface properties on custom demand - hydrophilic or hydrophobic. Hydrophilic substrates give excellent enhancement of aqueous solutions, whereas hydrophobic are dedicated to alcoholic solutions.

## REFERENCES

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## FIGURES



**Figure 1:** Customizable SERS substrate with nanoparticles surface on ITO glass.