PLATYPUS TECHNOLOGIES

Better Measurement. Better Performance.

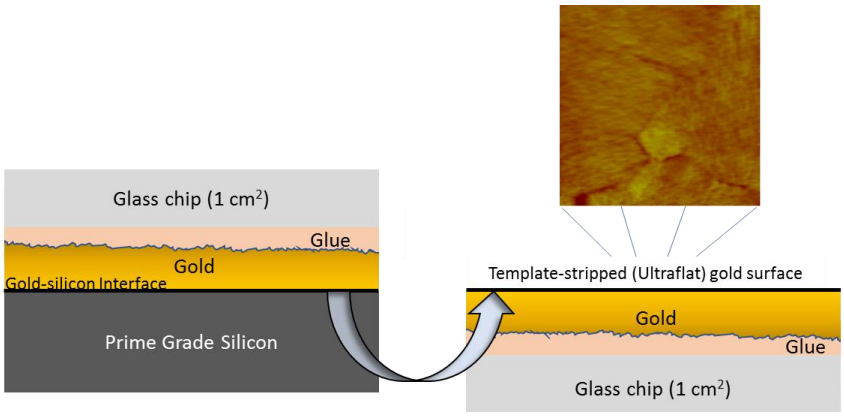
Template-Stripped Chips: Ultra-Flat Gold Surfaces

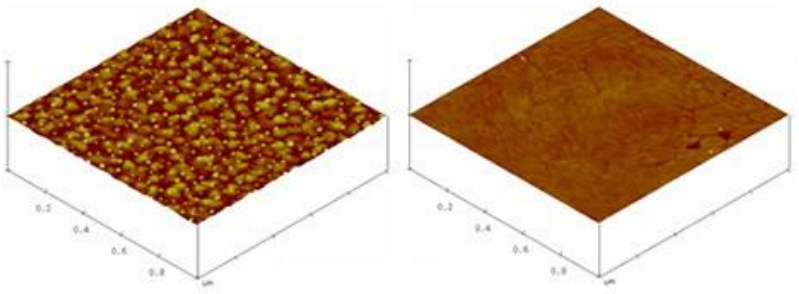
Temple-Stripped Chips: Ultra-Flat Gold Surfaces

Template-stripped gold chips offer a clean, near atomically-flat surface that is ideal for applications in *self-assembly*, *single-molecule imaging*, *nano*- or *micro-contact printing*, *DNA origami*, or *nano-photonics*. For example, researchers use these surfaces to build nano-antennas, memory devices, quantum-dots, nano-plasmonic devices, and meta-surfaces. Ultra-flat gold surfaces enable high-resolution characterization of single molecules and self-assembled monolayers (SAM) via atomic force microscopy (AFM) or scanning tunneling microscopy (STM).

Details

The chips are fabricated by coating the flattest available prime grade silicon wafers or freshly-split mica. Then, 1-cm^2 glass chips are epoxy-glued to the gold film. The gold surface you use is the one in contact with the silicon or mica substrate, so it is ultra-flat and protected from the atmosphere until you are ready to use it. Platypus Ultra-Flat Gold Chips have a uniform film of gold that covers the entire surface area of the chip.





Standard gold silicon wafer
RMS roughness = 17.3 Å

Ultra-flat gold silicon wafer
RMS roughness = 3.6 Å

Features

- Gold is deposited under high vacuum (10^{-8} Torr)
- 99.999% gold purity
- RMS surface roughness near atomically flat
- Ultraclean gold surface does not required cleaning
- Surface is free from oxygen, organics and other atmospheric contaminants
- Ready to use when you need it

AU.1000.SWTSG

AU.1000.MTSG

Ordering Information

Product Number	Substrate	Gold Thickness	Number of Chips
AU.1000.SWTSG	Prime-grade Silicon	100 nm	20
AU.2000.MTST	Freshly Cleaved Mica	200 nm	5

Examples of Research that Use Platypus Technologies' Ultra-Flat Gold Surfaces:

M. Sajfutdinow et al. "Nanoscale patterning of self-assembled monolayer (SAM)-functionalized substrates with single molecule contact printing", ***Nanoscale***, 2017, 9, pp. 15098-15106

T. Lee et al. "Construction of RNA-Quantum Dot Chimera for Nanoscale Resistive Biomemory Application", ***ACS Nano***, 2015, 9(7), 6675-6682

G. Akselrod et al. "Probing the mechanisms of large Purcell enhancements in plasmonic nanoantennas", ***Nature Photonics***, 2014, 8, pp 835-840

X. Jia et al. "Clarification of surface modes of a periodic nanopatch metasurface", ***Optics Express***, 2018, 26(3), 3004

F. Benedetti et al. "Can Dissipative Properties of Single Molecules be Extracted from a Force Spectroscopy Experiment?" ***BioPhys. J***. 2016, 111(6)

H. Wang et al. "Detection of electron tunneling across plasmonic nanoparticle-film junctions using nitrile vibrations", ***Phys. Chem. Chem. Phys***. 2018, 19(8), pp. 5786-5796