



**BLOOH SOLUTION**  
LTD.

BS – ULTRA-THIN

## **GOLD COATINGS**

DURABLE NANOLAYER PROTECTION  
FOR AEROSPACE, OFFSHORE, AND  
MEDICAL SYSTEMS





## INTRODUCTION: GOLD COATINGS FOR EXTREME DEMANDS

---

In environments where conventional materials fail due to corrosion, oxidation, or thermal stress, ultra-thin gold coatings offer a groundbreaking solution. Thanks to their exceptional stability and conductivity, gold nanolayers are setting new standards in surface protection for demanding fields such as aerospace engineering, offshore infrastructure, and medical components.

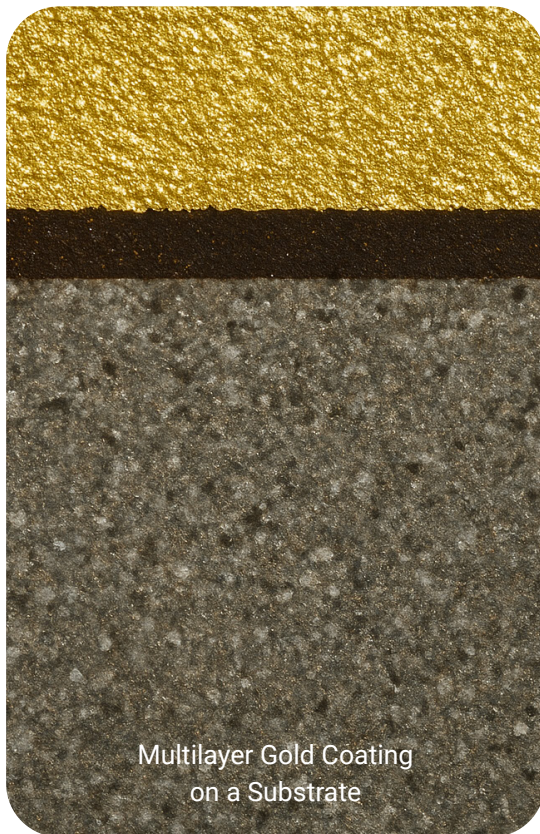
**BLOOH Solution Ltd.** has developed a specialized class of gold-based coatings enriched with ruthenium, combining extreme thinness with long-term material integrity. These layers ensure corrosion resistance without compromising weight or flexibility—providing engineers and system developers worldwide with a new level of safety.

Our goal is to make next-generation systems safer, more durable, and more efficient.

# BS-BREAKTHROUGH

BLOOH Solution leverages over a decade of experience in applied materials science and high-vacuum technology to develop ultra-thin gold coatings for critical industrial applications. Our coatings are produced through a multi-step process: magnetron sputtering, ruthenium pre-treatment, and nanoscale smoothing ensure optimal adhesion, surface coverage, and durability.

Unlike traditional electroplating, BLOOH Solution coatings deliver uniform thickness even on complex microstructures, preventing performance loss due to micropores or uneven layers. They are chemically inert, biocompatible, and specifically designed to maintain electrical conductivity even under oxidative and saline conditions.



## Validated In-House Testing Procedures:

- Thermal cycling from  $-80^{\circ}\text{C}$  to  $+700^{\circ}\text{C}$
- Salt spray exposure over 1,000 hours
- Long-term mechanical stress and scratch resistance
- Current load testing under varying AC and DC conditions

## Core Technologies from BLOOH Solution:

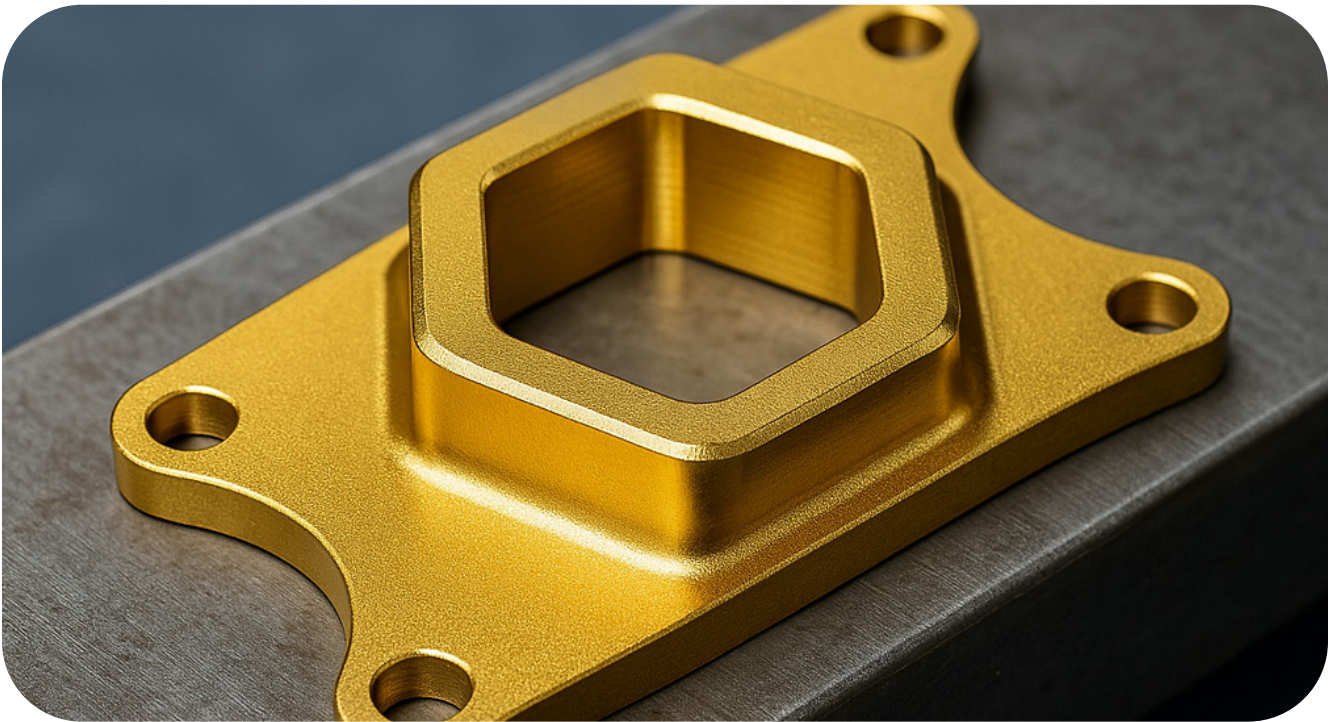
- Ruthenium-stabilized interlayers to prevent delamination
- Precision layer tuning for high-frequency contacts
- Nanoporosity control for optimized insulation and conductivity
- Biostable surfaces for long-term clinical applications

BLOOH Solution gold nanocoatings are already in use in safety-critical sectors—from jet propulsion and cleanroom biosensors to unmanned maritime systems. Every layer we apply is a step toward safer, smarter systems.

# PORTFOLIO

## MODEL AU-COAT 50X

A gold nanolayer with 99.99% purity, specially designed for aluminum and titanium components in aerospace applications. The coating is optimized for high-stress structures exposed to atmospheric and chemical fatigue. Its composition minimizes surface defects and maximizes lifespan—ideal for critical connection points.



## TECHNICAL SPECIFICATION

**Gold Purity:** 99.99% (5N)

**Layer Thickness:** 50–100 nm

**Adhesion Strength:** >30 MPa (with Ru interlayer)

**Application Method:** Magnetron PVD

**Surface Roughness:** <2 nm RMS

**Electrical Conductivity:** >41 MS/m

**Max. Operating Temperature:** 600 °C

**Additional Benefit:** Enhances fatigue resistance and reduces microcrack formation in thin-walled aircraft components.



# PORTFOLIO

## MODEL AU-SHIELD MARINE

Gold-based protective coatings for offshore and underwater electronics with maximum oxidation resistance. The formulation includes stabilizing alloying additives for use in saline, high-pressure environments—ideal for marine energy systems.



## TECHNICAL SPECIFICATION

**Gold Content:** 98.5% + alloyed passivators

**Coating Thickness:** 80–120 nm

**Salt Spray Resistance:** >1,000 hours (ASTM B117)

**Dielectric Strength:** >1.2 MV/m

**Operating Depth:** Up to 1,000 m

**Surface Coverage:** >95%

**Application Surfaces:** Copper, bronze, circuit boards

**Additional Benefit:** Ensures electrical reliability in underwater sensor networks and tidal power plants.



# DRIVING INNOVATION FORWARD!

---



**FOR MORE INFORMATION  
PLEASE CONTACT:**



BLOOH Solution Ltd.  
1055 Dunsmuir St  
Vancouver, BC V7X 1L4

Tel: +1 604 260 6692