



CHALLENGING LIGHT
FOR OUR PARTNERS

GOLD BLACK FILM DEPOSITION SERVICE

INO is a world-class center of expertise in industrial applications of optics and photonics, and a leading developer and provider of MEMS and MOEMS technologies.

INO is pleased to announce the completion of its in-house gold black deposition facility, which provides coatings for your broadband detection applications.

One of the main advantages of INO gold black is its lower thermal mass and conductance compared to other coatings like paints, electrochemical coatings, and metal and carbon coatings, resulting in excellent detector absorption with rapid thermal response.

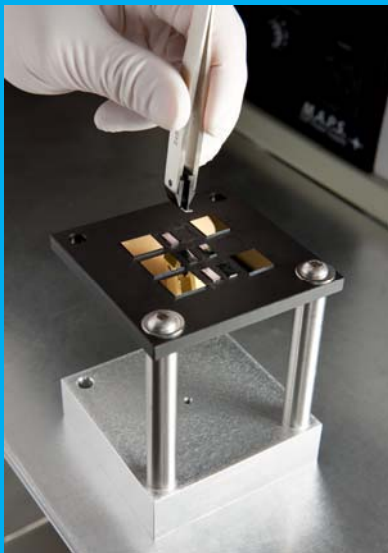
DEPOSITION FACILITY

FACILITY CHARACTERISTICS

- _ Surface to treat: flat (no circular 3D devices)
- _ Sample holder dimensions: 4 cm x 4 cm
- _ Sample holder designed for your application
- _ Customizable main parameters (e.g., temperature and pressure level)



Vacuum chamber system

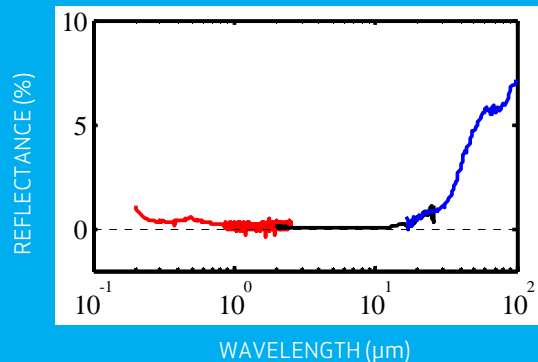


Sample holder

NOMINAL SPECIFICATIONS

- _ Thickness: 25 μm
- _ Optical Absorption > 95% from 0.2 μm to 40 μm
- _ Optical Absorption > 90% from 40 to 100 μm
- _ Density: 0.3% of bulk gold
- _ Compatible with environmental requirements for space and military applications (vibration, shock, and thermal cycling)
- _ Applicable to bolometric, pyroelectric, thermoelectric, and other detectors

GOLD BLACK COATING CHARACTERISTICS

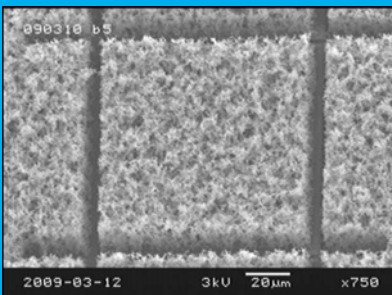


Gold black typical specular reflectance between 0.2 μm and 100 μm

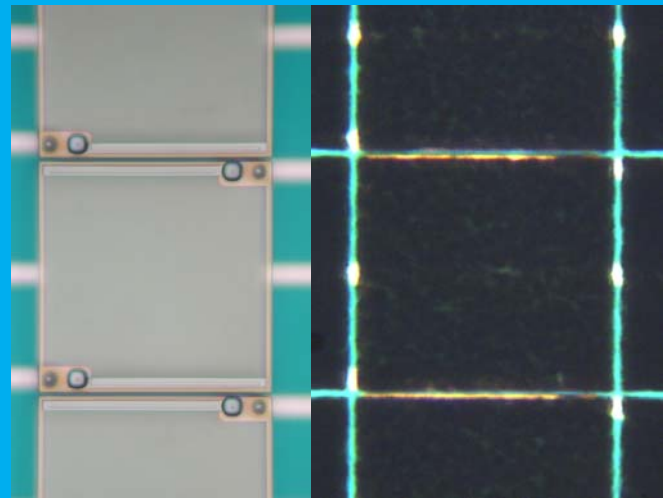
GOLD BLACK FILM RESULTS

DETECTOR INTEGRATION

- _ Integration with microbolometer detectors demonstrated for ESA's EarthCARE Satellite
- _ 30x1 detector broadband FPA integrated with off-the-shelf ROIC
- _ Uniform spectral responsivity between 0.2 μm and 50 μm
- _ Detector thermal capacity increased by less than 50%
- _ Compatible with laser micromachining process for pixel definition
- _ Blackened pixel fill factor higher than 90%



Scanning electron micrograph of laser-trimmed gold black



Before

After

PRV-090095