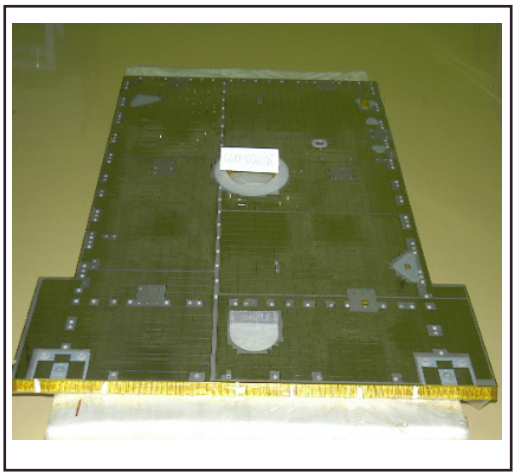
Optical Solar Reflectors

U R Rao Satellite Centre (URSC) of Indian Space Research Organisation (ISRO) has developed Thin film based coating processes for realizing Optical Solar Reflector (OSR). Rear surface of quartz substrate is coated with silver and a protective metallic layer. Front surface is coated with ITO.



Salient Features

Optical Solar Reflector, a second surface mirror, is an important and crucial thermal control element used in spacecraft thermal management. These OSRs are bonded onto the radiator area of the spacecraft panel using an electrically conductive adhesive to provide a high performance radiating surface.

Major Specifications

Sl. No.	Description	values
1	Size	40 x 40 mm
2	Substrate Thickness	75 ± 10 microns
3	Substrate Material	CMX Glass or Quartz Substrate
Thermo-Optical Properties		
4	Solar Absorptance. (α_s)	≤ 0.050
5	IR Emittance (ε_{IR})	≥ 0.75
Electrical Properties		
6	Rear Surface sheet Resistance	≤ 1Ω/Sq
7	Front surface sheet resistance	≤ 5 kΩ/Sq
8	Front to back surface resistance	< 200kΩ.

Technology Transfer

URSC/ISRO offers to transfer this thin film based OSR technology, developed by URSC to industries in India with adequate experience and facilities. Industries interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

Technology Transfer & Industry Coordination Division (TTID),
Programme Planning and Evaluation Group (PPEG),
U R Rao Satellite Centre (URSC), ISRO, HAL Airport Road,
Vimanapura Post, Bangalore – 560 017.
Email-id: tt-icd@ursc.gov.in
Fax No: 080-25205261
https://www.ursc.gov.in/industry/index.jsp