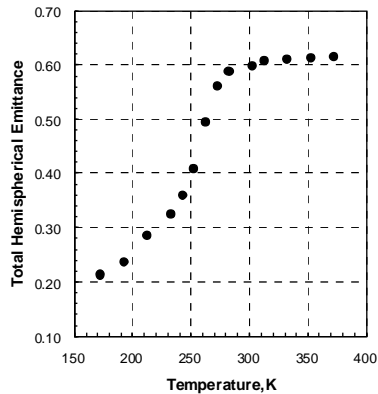
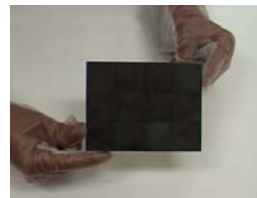


Smart Radiation Device (SRD)



SRD Bulk Tiles on the MUSES-C Asteroid Sample Return Mission



Features

- Inherent variable emittance
 - >0.6 @300K
 - <0.3 @ 220K
- Low mass, thin tile shaped:
 - 40mmx40mmx0.07mm (Typical)
 - approx. 450 grams/m²
- No moving parts
- No electric power
- Containing no organic matter
- Stable in space environment:
 - No damage by UV, electrons and protons equivalent to 10 years in GEO

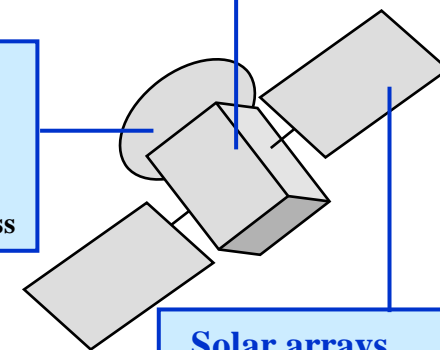
Spacecraft System Application

Spacecraft body

- Conservation of heater power
- Suppression of temperature drop during eclipse
- Suppression of bulk temperature change due to solar intensity variation

Antennas

- Suppression of thermal deformation
- Mitigation of thermal stress



Solar arrays

- Mitigation of thermal stress
- Reduction of thermal snap at the beginning and end of eclipse

System Benefits

- Reduction of TCS Mass
- Heater Power Conservation
- Reliability improvement by mitigation of temperature stress

➔ **Reduction of the Total System Mass**