

TECHNOLOGY READINESS LEVEL: 4

KEY ELEMENTS OF THE TECHNOLOGY HAVE BEEN DEMONSTRATED IN A LABORATORY ENVIRONMENT.

US PATENT # 6,632,542

6,783,653

TECHNOLOGY SUMMARY

Sandia has developed a new class of solar selective absorber coatings that significantly improve the thermal conversion efficiency of solar units by reducing radiative energy losses from the absorbing elements. Solar absorption coatings applied to components have considerable utility in the design of solar thermal flat-plan collectors and of solar concentrators.

Unlike other coatings that tend to be mechanically fragile which leads to degradation, the coating developed by Sandia is economical, energy efficient, and has limited environmental impact compared to competing processes. These coatings comprise a structured metallic overlayer that has a sub-micron structured designed to efficiently absorb solar radiation, while retaining low thermal emissivity for infrared thermal radiation.



POTENTIAL APPLICATIONS

- Solar Thermal Power Facilities
- Energy Storage
- Photovoltaics

TECHNOLOGICAL BENEFITS

- More economical and environmentally friendly than current processes
- Improved energy efficiency
- Offers protection from mechanical, thermal & environmental degradation
- Efficiently absorb solar radiation while retaining low thermal emissivity

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

Refer to SD # 5828

or visit

<https://ip.sandia.gov>