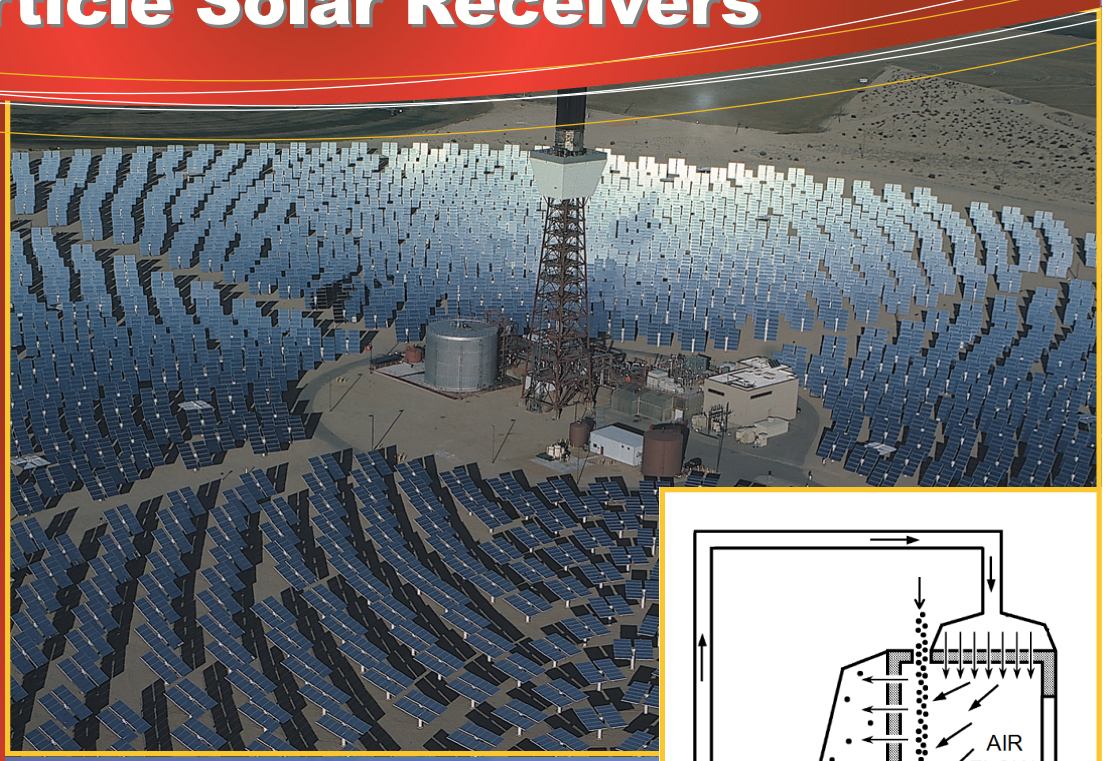
Sandia National Laboratories

Wind Protection for Solid Particle Solar Receivers



MARKET APPLICATION

Solid Particle Solar Receivers

BENEFITS

Increased and Maintained Efficiency of Receivers

Elimination of Absorber Particle Loss

Significant Reduction of Heat Loss

Minimal Energy Consumption to Run

TECHNOLOGY READINESS LEVEL

Sandia estimates this technology at approximately TRL 2. Key concepts and applications of this technology have been formulated.

INTELLECTUAL PROPERTY

US PATENT PENDING
(SD # 10824)

TECHNOLOGY SUMMARY

Solar power tower systems use an array of several thousand heliostats to focus sunlight onto a central receiver tower. Solid Particle Solar Receivers use moving blackened alumina particles to directly absorb the solar energy. External winds can cause significant loss of heat and alumina particles in these systems. This Sandia invention uses a fan to re-circulate the internal cavity air of the Solid Particle Receiver through a filter to collect the alumina particles and absorbed solar thermal energy, avoiding loss of heat and particles.

TECHNICAL LEAD

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