

TECHNOLOGY READINESS LEVEL: 5

TECHNOLOGY HAS BEEN TESTED IN AN OPERATIONAL ENVIRONMENT.

US PATENT #S

7,667,833

8,294,886

TECHNOLOGY SUMMARY

This technology is a new technique for parabolic trough mirror alignment based on the use of an innovative Theoretical Overlay Photographic (TOP) approach. It is a variation of current methods used on parabolic dish systems and involves overlay of theoretical images of the Heat Collection Element (HCE) in the mirrors onto carefully surveyed photographic images and adjustment of mirror alignment until they match. The TOP approach promises to be practical, straightforward, and inherently aligns the mirrors to the HCE. Alignment uncertainty with this technique is predicted to be less than the mirror slope error.



Additionally, a module-to-module alignment method is used to align multiple solar trough concentrators to provide superior optical performance. Any module-to-module misalignment can be corrected by adding the necessary relative module adjustment to the TOP alignment of the module mirrors.

POTENTIAL APPLICATIONS

- Clean energy production
- Electric Utility
- Alternative energy options

TECHNOLOGICAL BENEFITS

- Simple & easy to implement
- Increased efficiency & power
- Environmentally friendly
- Renewable resource
- Reduced cost
- Increased alignment accuracy

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

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or visit

<https://ip.sandia.gov>