



TECHNOLOGY READINESS LEVEL: 6

US PATENT PENDING

PROTOTYPES HAVE BEEN TESTED AND SHOWN TO WORK IN AN OPERATIONAL LABORATORY ENVIRONMENT, INCLUDING THE INTEGRATION AND DEMONSTRATION OF THE COMPONENTS.

TECHNOLOGY SUMMARY

This technology is an automated system in which the reflection of a mirror, typically for solar applications, is characterized by the slope and slope errors. The system uses a video camera and a PC to create fringe patterns from the reflection of the mirror. These patterns can characterize and better assess the quality of the mirrors for solar applications in a more automated process.

The integration of a screen (such as a TV), computer, and camera allow for real time control and processing while also possessing auto-alignment algorithms embedded into the software which can accurately determine the true position of the facets. Additionally, data can be compared to various standards which gives insight into the character of mirror errors. This system will be an asset for production line characterization for solar mirrors systems while also easily able to extend to other dish, trough, heliostats for tower systems, and rapid automated alignment systems for dish systems.



POTENTIAL APPLICATIONS

- Electric Utility
- Transportation/Automotive
- Solar Energy

TECHNOLOGICAL BENEFITS

- Automated Process
- Rapid characterization of mirrors
- Quality control in manufacturing
- Ability to extend to other types of relevant systems
- Higher efficiency for production of a valuable renewable energy source

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

Refer to SD # 11313

or visit

<https://ip.sandia.gov>