



Sandia National Laboratories

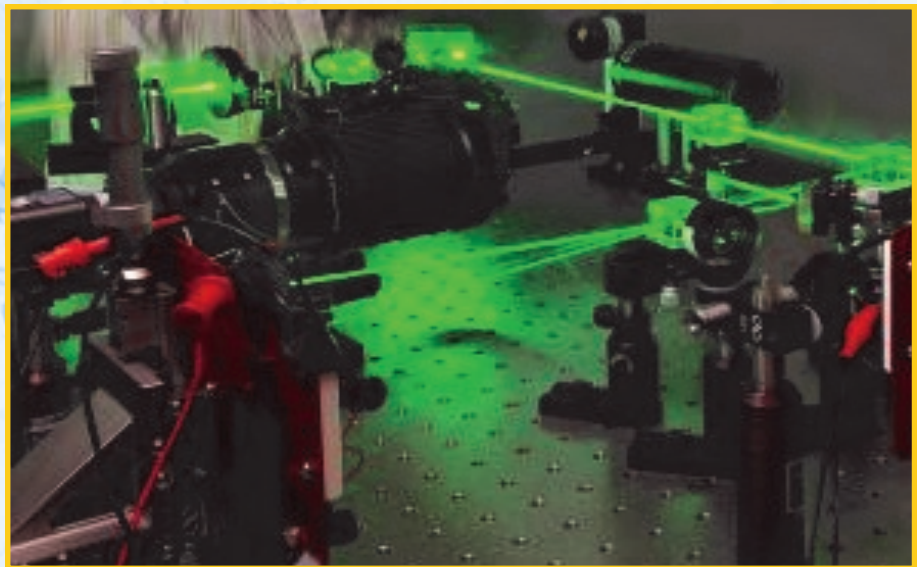
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# Multiple Ultrashort Pulse Laser Source

## Summary

Moderate energy multiple pulse laser sources would benefit a variety of applications from laser machining to gas ionization for remote sensing and directed energy. The benefit in multiple pulse technologies comes from the ability of laser pulses to interact with material conditions created by earlier pulses.

Currently available laser systems with lower repetition rates are less beneficial because either the conditions created by earlier pulses have decayed by the time subsequent pulses arrive or the pulse energy is too low to allow significant interactions. Pulse durations with the Sandia invention are much less and is much more flexible than competing high-average power systems.



## Licensing & Partnering Status:

Various license and partnering options are available. Please contact the Intellectual Property department to discuss.

## Technology Readiness Level:

Sandia estimates this technology's TRL at approximately level 2. The concept and application has been formulated and basic principles have been observed and reported.

## BENEFITS

- Sandia system has much higher repetition rates than competing high-average power systems
- Sandia technology's operational ranges are not currently available commercially
- Burst-mode design is much more flexible and allows potential interest to a larger technology base

## APPLICATIONS

- Precise laser machining
- Rapid laser imaging systems
- Gas ionization for remote sensing
- Directed energy
- Femtochemistry
- Medical imaging

## U.S. PATENT PENDING ON SD#

- 11612

## INTELLECTUAL PROPERTY & LICENSING CONTACT

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