

## ● Infrared Thermal Forming Process

### Oak Ridge National Labs

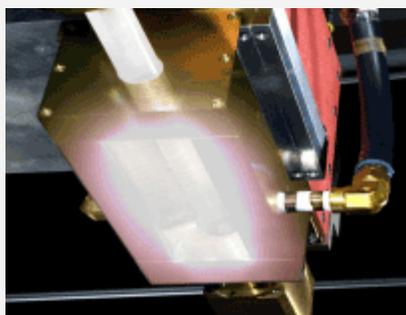
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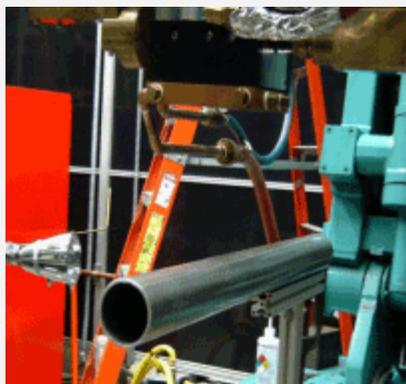
#### Goal:

To implement IR thermal forming as a pre-form method for aluminum tubes prior to hydroforming to reduce vehicle weight and achieve greater fuel economy.



#### Benefits:

- Avoids wall thinning, wrinkling, and buckling that is intrinsic to the current mechanical forming process.
- Heat input distribution is tailored to utilize localized heating sufficient to form tube.
- Eliminates the need for expensive straightening equipment.
- Reduced vehicle weight and higher fuel economy.



#### Accomplishments:

45° bend angle possible.

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