SAND2008-4599P

FBO Title: Partnership Opportunity for Laser Welding

Classification Code: 95 – Metal bars, sheets & shapes
NAICS Code: 332 – Fabricated Metal Product Manufacturing

Sandia National Laboratories has developed and patented a device and method for welding and is seeking partnerships with firms interested in commercializing this method and device: *US 6300591: Method for Laser Welding a Fin and Tube.*

A method of laser welding a planar metal surface to a cylindrical metal surface is provided, first placing a planar metal surface into approximate contact with a cylindrical metal surface to form a juncture area to be welded, the planar metal surface and cylindrical metal surface thereby forming an acute angle of contact. A laser beam, produced, for example, by a Nd:YAG pulsed laser, is focused through the acute angle of contact at the juncture area to be welded, with the laser beam heating the juncture area to a welding temperature to cause welding to occur between the planar metal surface and the cylindrical metal surface. Both the planar metal surface and cylindrical metal surface are made from a reflective metal, including copper, copper alloys, stainless steel alloys, aluminum, and aluminum alloys.

The laser welding technique is used to join thin copper or aluminum plates to copper or aluminum tubes. The laser beam provides a concentrated heat source, allowing for narrow, deep welds and high welding rates. The process makes high volume applications possible with consistent and reliable welding quality ensuring a proper bond between metal plate and tube.

> Partnerships will take the form of commercial licenses. Commercial licensees will have the option to obtain, up to and including, an exclusive license to the intellectual property in a pre-negotiated, defined field of use for reasonable consideration. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under Contract DE-AC04-94AL85000. For further information, please respond to Jonathan Gardner at Sandia National Laboratories by email: jgardn@sandia.gov or FAX: 505-844-8011.