



## TECHNOLOGY

# Transient Liquid Phase High Temperature Solder Paste Attach

## OVERVIEW

Solder is a metal or metallic alloy used, when melted, to join metallic surfaces together. The most common alloy is some combination of tin and lead. Certain tin-lead alloys have a lower melting point than the parent metals by themselves. The most common alloys used for electronics work are 60/40 and 63/37.

Today there is an increased interest in lead-free soldering technologies. This interest is of course driven by both legislation in Europe and the US and commercial activities in Japan.

The two most frequently aired complaints that industry expresses in moving to lead-free solder is that such compositions require higher processing temperatures and the solder does not flow as readily as lead-containing solder. Higher temperatures destroy component parts and poor wettability (flowability) produces inferior contacts.

A researcher at the University of Maryland has invented a solder paste composition comprised of two metal components that can be processed as a solder at a temperature well below temperatures that would cook electronic parts and yet after processing can withstand temperatures as high as 690 degrees C., thus the Application Temp ( $T_a$ ) to Processing Temp ratio is much greater than 1. Conventional compositions have ratios less than 1.

For further information, please contact the Office of Technology Commercialization, (301) 405-3947, E-mail: [otc@umd.edu](mailto:otc@umd.edu).

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## Additional Information

### INSTITUTION

University of Maryland, College Park

### PATENT STATUS

Patent(s) pending

### LICENSE STATUS

Contact OTC for licensing information

### CATEGORIES

- Chemical

- Microelectronics

## **EXTERNAL RESOURCES**

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