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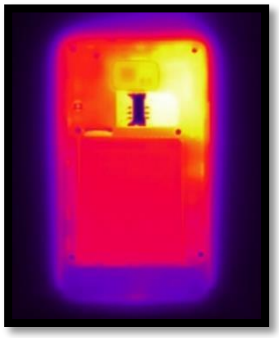
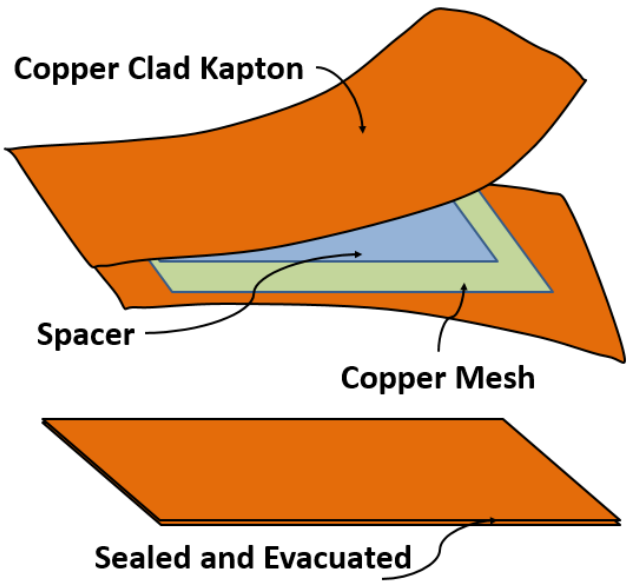
Kelvin Thermal Technology



The world today would not be the same without electronics. Smart phones and tablets are an essential part of the human experience and continue to play an integral role in our society and culture. The drive to offer *more* continues and manufacturer's of electronics face a never ending struggle between delivering greater computing power and managing the heat generated. Excessive heat robs products of performance, reduces the product lifetime and, worst of all, impacts the user experience. The drive to thinner and smaller more abstract form factors adds to the challenge. Our (Thermal Ground Plane) offers an extremely thin [0.25mm] thermal management technology that provides extensive improvements over other thermal management methods. The Kelvin Thermal IP and know-how are closely related to the science and technology developed through a DARPA-funded Thermal Ground Plane (TGP) Project ($4.5M, 2007-2013 45 person-year) resulting in a solid knowledge and technology base being established.

The flexible TGPs developed by Kelvin Thermal are the most advanced solution for enabling future electronic devices, including smartphones and wearable electronics.



Kelvin Thermal

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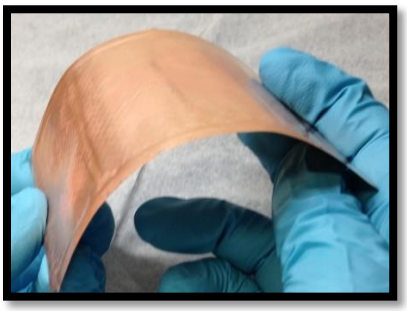

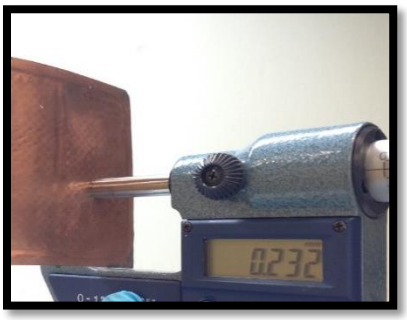

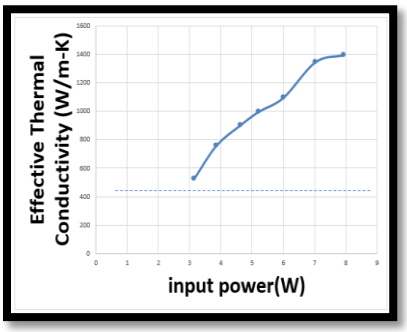

Flexible TGP's effective thermal conductivities are **4X to 10X higher than copper**. Its manufacturability is excellent due to its use of flexible circuit board technologies. TGPs can be designed to fit any cavity making it the most flexible solution to todays form factor challenges enabling linear, curved and asymmetric geometries to be accommodated.

The TGP offers the possibility of being both the thermal as well as electrical substrate with better thermal performance and greater adaptability than simple copper or graphite. The Kelvin Thermal TGP changes the design rules for electronics and enables the next generation of products.

[Kelvin Thermal also offers design engineering services to its clients.]

Founders

Y. C. Lee

- Ph.D. in Mechanical Engineering, University of Minnesota, 1984.
- AT&T Bell Labs at Murray Hill, 1984-1989.
- University of Colorado Boulder, 1989-present; Professor of ME.
- Research on system integration of microelectronic, microwave, optical and MEMS/NEMS devices.
- ASME InterPACK Achievement Award 2013; Editor of ASME J. of Electronic Packaging (2014-19)

Ronggui Yang

- Ph.D in Mechanical Engineering, MIT, 2006.
- University of Colorado, Boulder, 2006 – present; Associate Professor of ME.
- Research on thermal management, thermoelectrics, modeling and characterization of electrical and thermal transport at small scales.
- 2008 TR35 Award; 2010 ASME Bergles-Rohsenow Young Investigator in Heat Transfer
- Chair for ASME Nanoengineering for Energy and Sustainability Steering Committee

Kelvin Thermal owns TGP intellectual property and holds exclusive licenses to other TGP intellectual property developed by the University of Colorado in conjunction with DARPA.