Thermal Management Applications in Aerospace and Defense

Thermal Management Expo Panel 2026



Arya Hakimian, MSc

Application Scientist

C-Therm Technologies

C-THERM

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Who We Are

World leader in thermal conductivity instrumentation, specializing in non-destructive thermal analysis solutions that empower researchers, manufacturers, and quality control professionals across various industries.

SIMPLIFYING THERMAL CONDUCTIVITY TESTING FOR THE MATERIALS OF TOMORROW

Experts
Thermal Conductivity

#1
Leader in Transient Methods

2,000+
Customers Worldwide

50+
Distribution Partners

C-THERM

TRIDENT

1 instrument, 4 methods for

Thermal Conductivity (k)

(It's better to have options.)



AVAILABLE METHODS



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More Ways to Measure Thermal Conductivity

In partnership with ZFW Stuttgart — exclusive North American distribution



ZFW TIM-Tester

- TIM characterization per ASTM D5470
- Gap fillers, pads, greases, adhesives, films
- Precise optical gap measurement
- Compression, expansion, and cyclic testing

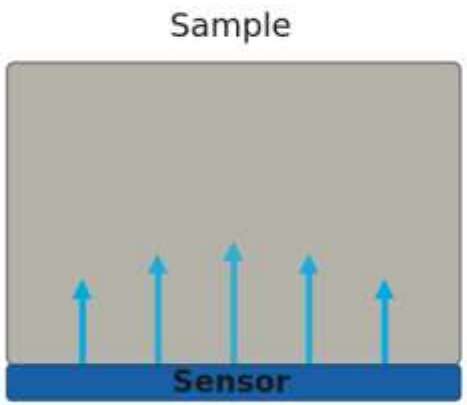
Learn more

ctherm.com/zfw-tim-tester

ASTM D5470, simplified

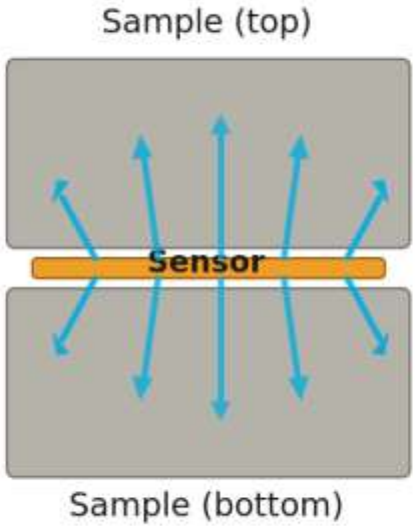
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Method Geometry Shapes the Measurement



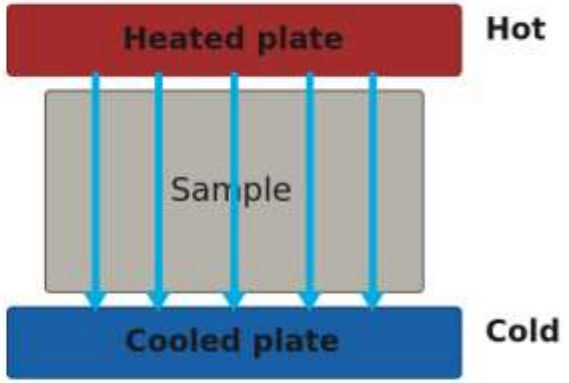
Single-sided transient

MTPS



Double-sided transient

TPS



Dual-plate steady-state

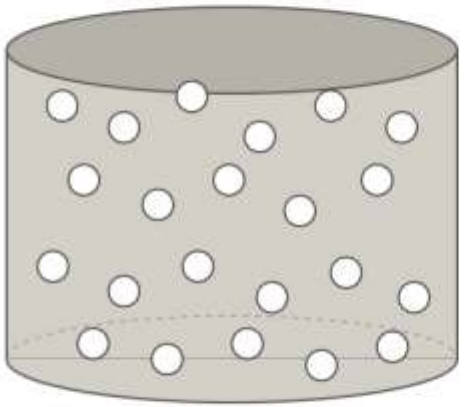
TIM Tester

Heat flow direction

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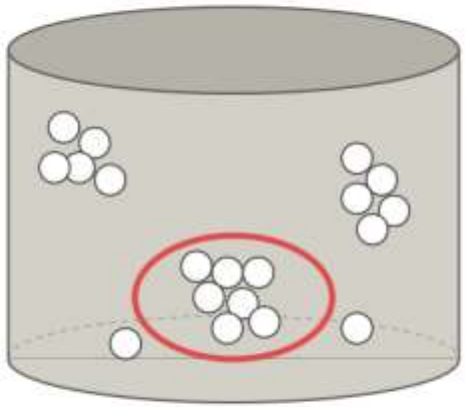
Challenges With Filler Distribution

Well-dispersed



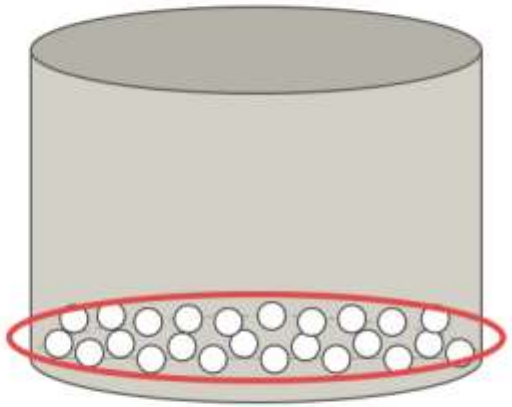
Goal state

Agglomeration



Clusters of filler

Sedimentation



All filler at bottom

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01 Case Highlight

Thermal mapping in TIM development

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MTPS as a Thermal Mapping Tool



This isn't just thermal conductivity. It's a development tool for optimizing dispersion and iterating on formulation.

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Certifying Against the Right Standard

Once your formulation is locked in, these are the standards your TDS values come from.

TPS

Thermal conductivity and thermal diffusivity

ISO 22007-2

ASTM E3088

TIM Tester

Thermal conductivity and thermal contact resistance

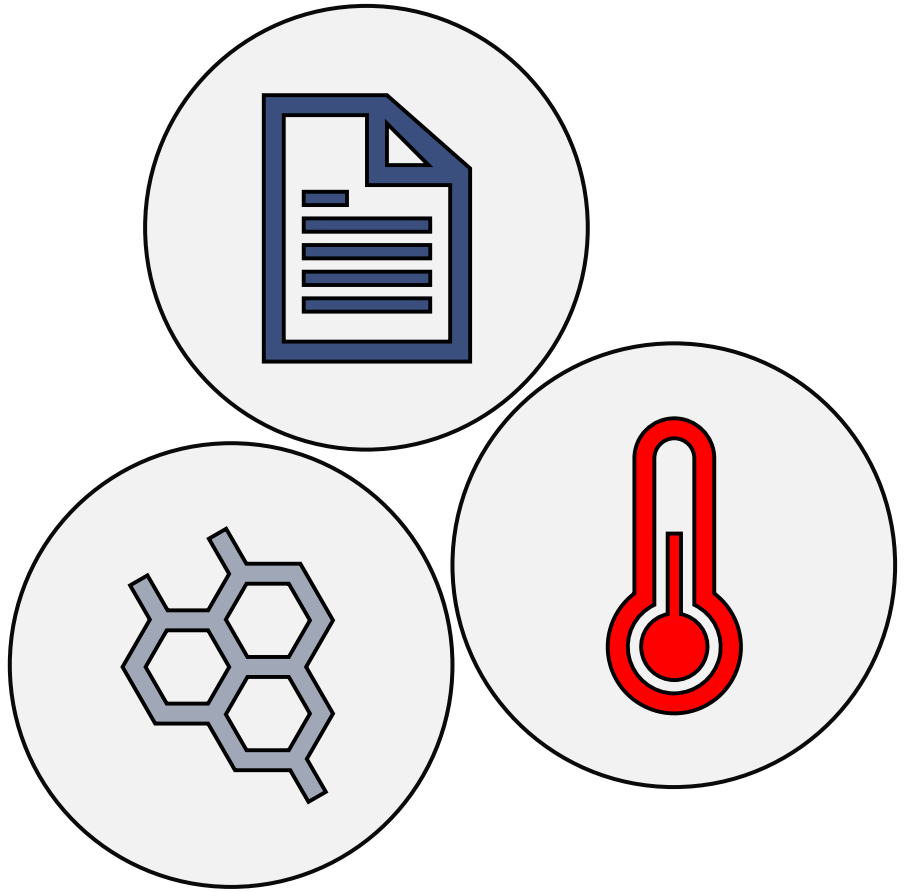
ASTM D5470

> **No method is universally better; choose what your supply chain and industry require.**

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Defense Demands More Than a Datasheet

- Beyond datasheet values
  - Verifying performance under non-standard conditions and temperature ranges
- Cycling, ageing, varied environments
  - Replicating specific environmental conditions and long-term performance
- Consumer-grade isn’t enough
  - Demands for novel materials outside of what is typical in commercial industries



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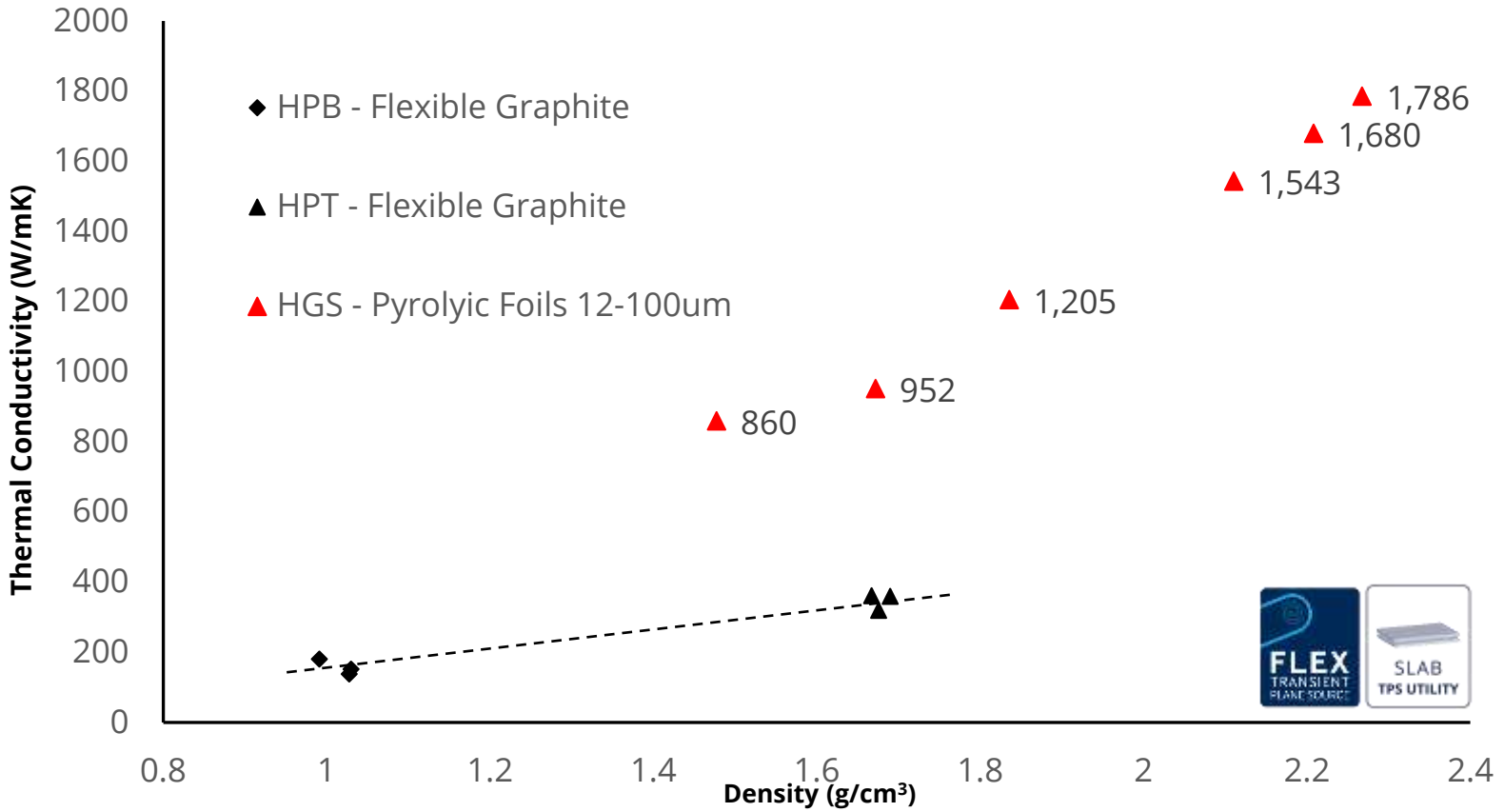
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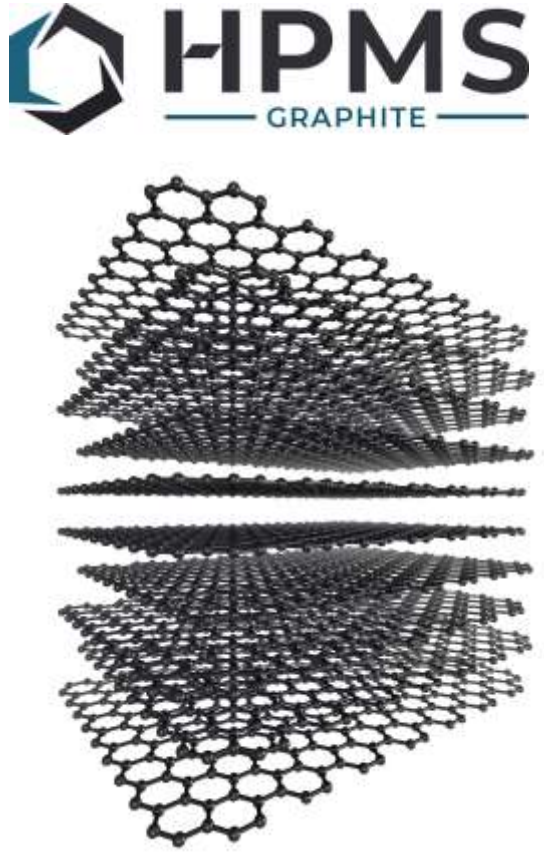
02 Case Highlight

Novel High-k Heat Spreaders

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TPS Testing of Thin High-k Heat Spreaders





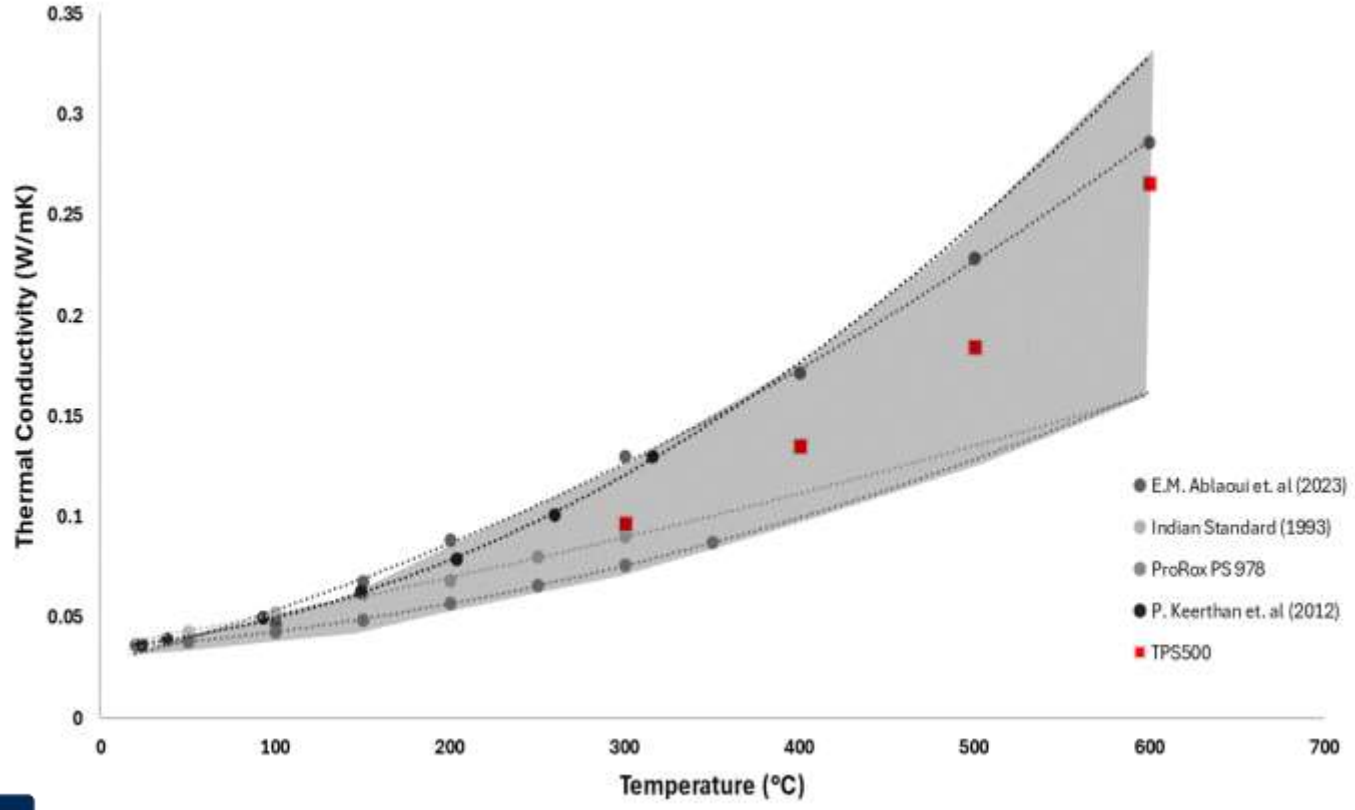
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03 Case Highlight

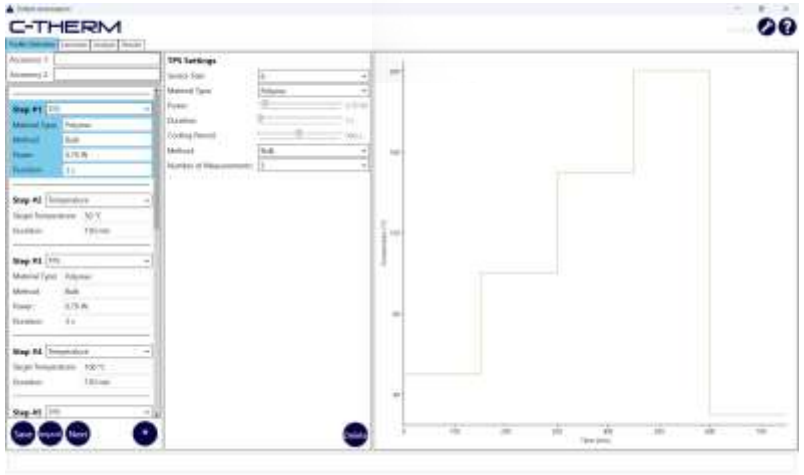
High-Temperature k and Testing Automation

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High-Temperature Testing Automation







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