🔥 International Symposium on Thermal Characterization of Materials and Devices (THERM-CHAR 2026)

Within the Framework of the International Congress INTERM

April 5–7, 2026

🔧 Symposium Overview

The International Symposium on Thermal Characterization of Materials and Devices (THERM-CHAR 2026) focuses on experimental and analytical methods used to measure, model, and optimize thermal behavior across a wide range of materials and applications.

Thermal properties play a critical role in energy conversion, electronic packaging, thermoelectrics, biomaterials, and advanced manufacturing. This symposium provides a platform for researchers to discuss cutting-edge thermal testing techniques, equipment innovations, and thermal transport mechanisms from nanoscale to bulk systems.

🧩 Symposium Tracks

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1. 🔬 Thermal Transport & Fundamental Mechanisms

• Phonon and electron heat transport
• Lattice thermal conductivity modeling

• Thermal boundary resistance & interface heat transfer
• Heat dissipation in nanostructures and thin films

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2. 🧪 Thermal Property Measurement Techniques

• Laser Flash Analysis (LFA) for thermal conductivity & diffusivity
• Differential Scanning Calorimetry (DSC)
• Thermogravimetric Analysis (TGA)
• Differential Thermal Analysis (DTA)
• Hot-wire and hot-disk techniques
• Transient plane source (TPS) methods
• 3ω method for thin films

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3. 🌡️ High-Temperature & Extreme-Environment Testing

• Thermal stability of ceramics, metals, composites
• Oxidation and thermal degradation
• In situ thermal testing under controlled atmospheres
• Fire resistance and thermal shock evaluation

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4. ⚙️ Thermal Characterization in Specialized Systems

• Thermoelectric materials (ZT determination, PF, κ measurement)
• Energy storage materials (battery safety, thermal runaway studies)
• Electronic packaging & heat sink characterization
• Polymer and composite thermal mapping
• Laser-induced graphene (LIG) and carbon-based materials

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5. 🚀 Advanced and Emerging Techniques

• Infrared thermography and thermal imaging
• Time-domain thermoreflectance (TDTR)
• Frequency-domain thermoreflectance (FDTR)
• Scanning thermal microscopy (SThM)
• AI-assisted thermal property prediction and inverse modeling