



2018 **MRS**<sup>®</sup>  
**FALL MEETING & EXHIBIT**  
 November 25–30, 2018 | Boston, Massachusetts  
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# CALL FOR PAPERS

Abstract Submission Opens—May 14, 2018  
 Abstract Submission Deadline—June 14, 2018

REMINDER: In fairness to all potential authors, late abstracts will not be accepted.

## Symposium TP02: Thermal Analysis—Materials, Measurements and Devices

Thermal analysis determines the physical and chemical properties of materials. It provides insights into chemical bonding, microstructure, order-disorder reactions, and phase transitions, and how these respond to thermal and processing history. Recent advances in instrumentation, techniques and applications have facilitated new areas of study, as well as allowing old questions to be re-addressed, especially with the progress in ultrafast scanning and micro- and nanocalorimetry. These new methods are being applied to measurements of thin films, glasses, semiconductors, nanomaterials, biomaterials, and reactive and energetic materials. Propagating ideas across different materials classes will facilitate the development of new products and enhance the measurement capabilities for thermal analysis.

Designing high performance and cost competitive electronics requires careful consideration of not only electrical but also thermal domains, and this symposium will serve as a bridge between semiconductors/devices and thermal analysis. This symposium will provide a platform for worldwide scientists/researchers to discuss thermal properties of various materials, novel measurement methods for thermal analysis including integration with other methods (e.g. TEM, ToFMS, XRD) and combinatorial methods, and thermal management of devices.

### Topics will include:

- Fast scanning thermal analysis and instrumentation metrology
- Micro- and nano-scale thermal analysis
- Thermal behavior of nanoconfined glasses or crystallizable materials
- Thermal characterization of semiconductors and nanoelectronic devices
- Thermal characterization of 2D layered materials and clusters
- Thermal characterization of biomaterials, protein-folding
- Thermochemical properties of inorganic and hybrid materials
- Thermodynamics, kinetics in thermal analysis
- Combinatorial methods for thermal analysis
- Thermal characterization of reactive and energetic materials
- Prediction of lifetime based on thermal analysis

A tutorial complementing this symposium is tentatively planned. Further information will be included in the MRS Program that will be available online in September.

### Invited speakers include:

<b>Rene Androsch</b>	Martin Luther University, Germany	<b>James Pomeroy</b>	University of Bristol, United Kingdom
<b>Thomas Beechem</b>	Sandia National Laboratories, USA	<b>Javier Rodriguez Viejo</b>	University of Barcelona, Spain
<b>John Bischof</b>	University of Minnesota, USA	<b>Christoph Schick</b>	University of Rostock, Germany
<b>Peggy Cebe</b>	Tufts University, USA	<b>Ali Shakouri</b>	Purdue University, USA
<b>Andrea Centrone</b>	National Institute of Standards and Technology, USA	<b>Akihiko Toda</b>	Hiroshima University, Japan
<b>Sukwon Choi</b>	The Pennsylvania State University, USA	<b>Joost Vlassak</b>	Harvard University, USA
<b>Jeffery DeLisio</b>	Charles Stark Draper Laboratory, USA	<b>Mary Anne White</b>	Dalhousie University, Canada
<b>Frances Hellman</b>	University of California, Berkeley, USA	<b>Yoonjin Won</b>	University of California, Irvine, USA
<b>Greg McKenna</b>	Texas Tech University, USA	<b>Zichao Ye</b>	Lam Research Corporation, USA
<b>Alexandra Navrotsky</b>	University of California, Davis, USA	<b>Lian Yu</b>	University of Wisconsin-Madison, USA
<b>John Perepezko</b>	University of Wisconsin-Madison, USA	<b>Zhiwu Yu</b>	Tsinghua University, China

### Symposium Organizers

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### Keywords for Abstract Submission

Calorimetry, Combinatorial metrology, Device reliability, Fast scanning nanocalorimetry, Nanoelectronic metrology, Thermal analysis, Thermodynamics and kinetics of materials