
CANADIAN THERMAL ANALYSIS SOCIETY

AN AFFILIATE OF THE NORTH AMERICAN THERMAL ANALYSIS SOCIETY

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**24TH CTAS ANNUAL
WORKSHOP AND EXHIBITION**

May 06-07, 2014

Delta Toronto Airport West Hotel

Mississauga, Ontario, Canada



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Tuesday May 6, 2014

Training Session

Alderwood Room

8:00 – 9:00	<i>Breakfast</i>
9:00 – 9:30	<i>Registration</i>
9:30 – 10:30	Thermal analysis of modern molecular materials: pharmaceutical cocrystals, photo-mechanical and thermosalient (jumping) crystals Tomislav Friščić <i>McGill University</i>
10:30 – 11:00	<i>Coffee break, Exhibition & Posters</i>
11:00 – 11:30	Inter-connections in thermal analysis Charles Potter <i>TA Instruments</i>
11:30 – 12:00	Thermal Conductivity Characterization of Advanced Nanocomposites <u>Jarett Nickerson</u> , Robert Bateman <i>C-Therm Technologies Ltd.</i>
12:00 – 13:00	<i>Lunch</i>



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- 13:00 – 13:30 **Influence of experimental parameters on DSC test results**
Robert Pieper,¹ Alexander Schindler,² Andreas Spoerrer²
¹NETZSCH Instruments North America
²NETZSCH-Gerätebau GmbH
- 13:30 – 14:00 **Thermomechanical analysis – the most underestimated technique in thermal analysis**
Markus Schubnell
Mettler-Toledo AG
- 14:00 – 14:30 **Complementing Thermal Analysis with Other Techniques**
D.V. Soldatov, A.J. Smith, F.I. Ali and T. Fillion
University of Guelph
- 14:30 – 15:00 *Coffee break, Exhibition & Posters*
- 15:00 – 15:30 **Characterization of Black Powder using Sensitiveness Testing and a Variety of Thermal Techniques**
C. Badeen, S. Singh, R. Turcotte, R. Bowes
Canmet Canadian Explosives Research Laboratory



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Vendor Presentations

15:30 – 15:45	TA Instruments
15:45 – 16:00	Mettler-Toledo Inc.
16:00 – 16:15	C-Therm Technologies
16:15 – 16:30	Netzsch Instruments Inc.
16:30 – 16:45	Therm Test Inc.
16:45 – 17:00	Setaram

Social Event:

Reception, Exhibition and Poster Presentation

17:00 – 19:00



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Wednesday May 7, 2014

Technical Session

Alderwood Room

- 08:00 – 09:00 *Breakfast*
- 09:00 – 09:30 *Registration*
- 09:30 – 10:15 ***Plenary Lecture***
Elucidating Protein Binding Mechanisms by Variable-c ITC"
A. Mittermaier
McGill University
- 10:15 – 10:30 **Chemical Modeling of Cuprous Chloride Solubility in Ternary CuCl-HCl-H₂O and Quaternary CuCl-CuCl₂-HCl-H₂O Systems up to 90°C**
Michael K. Carlos, Steven L. Palmer, and Vladimiro G. Papangelakis
University of Toronto
- 10:30 – 11:00 *Coffee break, Exhibition & Posters*
- 11:00 – 11:15 **Using Monte Carlo Analyses to Model Thermal Data from Lipid Crystallization Studies**
Michael Tessier, Mark Baker, Laziz Bouzidi, Suresh Narine
Trent University
- 11:15 – 11:30 **Carbon black /TiO₂ supports for polymer electrolyte membrane fuel cells**
Chris Odetola, E. Bradley Easton and Liliana Trevani
University of Ontario Institute of Technology,



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- 11:30 – 11:45 **Temperature Effect on the Decomposition of Ammonium Bicarbonate - A Possible Draw Agent for Forward Osmosis Application**
Georgios Kolliopoulos, Raphael Soldi Giribaldi, Vladimiro G. Papangelakis
University of Toronto
- 11:45 – 12:00 **Annual General Meeting and Nomination**
- 12:00 – 13:00 **Lunch**
- 13:00 – 13:45 **Plenary Lecture**
Applications of Thermal Analyses to the Development of Thermoplastic Composites and Nanomaterials
Leonardo C. Simon
University of Waterloo
- 13:45 – 14:00 **Trends within the Thermal Decomposition of Glycine Oligomers**
A. J. Smith, F.I. Ali and D.V. Soldatov
University of Guelph
- 14:00 – 14:15 **Intramolecular Cyclization of Leucyl-alanine and Alanyl-leucine, a Thermally Induced Solid State Reaction**
F.I. Ali and D.V. Soldatov
University of Guelph
- 14:15 – 14:30 **Application of thermal analysis in producing and studying alloy catalysts for direct alcohol fuel cells**
M. R. Zamanzad Ghavidel and E. Bradley Easton,
University of Ontario Institute of Technology
- 14:30 – 15:00 *Coffee break, Exhibition & Posters*
- 15:00 – 15:15 **DSC and TGA for competitive product analysis**
Charles Potter
TA Instruments



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15:15 – 15:30

NETZSCH DSC 214 Polyma: automatic evaluation and identification of dsc curves

Robert Pieper,¹ Alexander Schindler² and Andreas Spoerrer²

¹NETZSCH Instruments North America

²NETZSCH-Gerätebau GmbH

15:30 – 15:45

Simplifying the characterization of glass transition and softening points of clay composites via a horizontal pushrod dilatometer

Jarett Nickerson, Adam Harris and Robert Bateman

C-Therm Technologies

15:45 – 16:00

A novel storage interface for TGA-GC/MS analysis

Markus Schubnell

Mettler-Toledo AG

16:00 – 16:15

Anatomy of a soda bottle

Charles Potter

TA Instruments

16:15 – 16:30

Thermal instability of process chemicals used in the manufacture of commercial explosives

C. Badeen¹, Z. Kazi², W. Benaissa³, S. Singh¹, R. Turcotte¹, I. Alilovic⁴

¹Canadian Explosive Research Laboratory, Ottawa, ON

²University of Ottawa

³Institut National de l'Environnement Industriel et des Risques (INERIS), France

⁴Orica Mining Services, Kurri Kurri, Australia

16:30 – 16:50

Synthesis, characterization and various application of magnetic nanoparticles

S. C. Mojumdar^{1,2}, A. More³, V. M. S. Verenkar³

¹University of Guelph, Guelph, ON

²Trencin University of A. Dubcek

³Goa University



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Poster Session

Alderwood Room

Thermally Induced Physical and Chemical Transformations in a Series of Solid Dipeptides

F. I. Ali, M. Ignacio, A. J. Smith and D. V. Soldatov
University of Guelph

Characterization of the new nitrogen-rich compound TTP

Elena Sebastiao, Dominique Laniel, Cyril Cook, Serge Desgreniers, Iliia Korobkov, Glenn Facey, Muralee Murugesu
University of Ottawa

A new, imperfectly reversible thermosalient crystal

José G. Hernández,(a) Cristina Mottillo,(a) Ian S. Butler,(a) Oxana V. Magdysyuk, (b) Robert E. Dinnebier (b) and Tomislav Friščić.(a)
(a) McGill University, (b) Max-Planck Institute for Solid State Research

Commissioning and comparison of a heat flux calorimeter for energetic materials

M. Yao¹, S. Singh², R. Turcotte²
¹*Nanjing University of Science & Technology*
²*Canadian Explosive Research Laboratory*

Nanocrystalline cellulose/carbon modified paste electrochemical sensors

Tanya Fernandes, Fereshteh Samiee, and Liliana Trevani
University of Ontario Institute of Technology

Thermochemistry and mechanochemistry for energy efficient, low-solvent syntheses of organometallic pharmaceuticals

Jessica Wong, Neil A. J. Macdonald, Cristina Mottillo, Ian S. Butler and Tomislav Friščić
Department of Chemistry and FRQNT Centre for Green Chemistry and Catalysis, McGill University, 801 Sherbrooke St. W., H3A 0B8 Montreal, Quebec