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**The 33rd Annual Conference on Thermal Analysis and Applications
North American Thermal Analysis Society (NATAS)**

Sheraton Universal Hotel, Universal City, California

**Technical Program
Monday, September 19th, 2005
Studio Suites II-III
Larry Judovits, Arkema Inc., Presiding**

NATAS apologizes to the authors of the following paper that was errantly omitted from last year's proceedings:

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- 1620 to 1640 Rigid Amorphous Fraction of Polymer Nanocomposites and Semicrystalline Polymers 918
Schick, C.; Thomas, S; Sargsyan, A; Wurm, A; Thomas, S

**Energetic Materials/Thermal Hazards
Wednesday, September 21st, 2005
Studio Suite IV**

David Jones, Queenie Kwok, Canadian Explosives Research Lab, Co-chairs

- 0920 to 1000 Effective Use of Differential Scanning Calorimetry 920
Fruip, D.J.; Elwel, T.I
- 1000 to 1020 Linking Batch Processing Steps with Reactive Chemicals Hazard Evaluation and Testing 935
D.J. Leggett
- 1020 to 1040 **Break**
- 1040 to 1100 Development of Inherently Safer Processes by Using Laboratory Calorimeters 943
Venugopal, B.; Kohn, D.Y.
- 1100 to 1120 Development of In-House Thermoanalytical Testing Techniques 948
L.D. Tuma

- 1120 to 1140 Optimizing Conditions in Multi-Utilization of Chicken Waste as Energy Source 955
Ozao, R.; Whitely, N.; Chen, M.H.; Pan, W.P.
- 1140 to 1200 Reactive Hazards of Cumene Hydroperoxide Incompatibility with Hydroxides 956
Hou, H.Y.; Duh, Y.S.; Lin, W.H.; Wang, Y.W.; Shu, C.M.
- 1200 to 1320 **Lunch**
- 1400 to 1420 Development of a New Analytical Method for the Evaluation of Hazards from Slow Decomposition of Waste Streams and Process Solutions 963
T.P. Vickery
- 1420 to 1440 Thermal Hazards and Safe Scale-Up of Reactions Containing Dimethyl Sulfoxide 972
Lam, T.T.; Vickery, T.; Tuma, L.
- 1440 to 1500 Assessing Contaminated Hydrogen Peroxide for Safe Storage and Transportation using the FTAI 983
Raines, J.C.; Schmidt, J.P.; Burelback, J.P.; Fauske, H.K.
- 1500 to 1520 An Evaluation on Thermokinetic Parameters for Hydrogen Peroxide at Various Concentrations by Differential Scanning Calorimetry 988
Chen, K.Y.; Lin, C.M.; Kao, C.S.; Wang, Y.W.; Shu, C.M.
- 1520 to 1540 **Break**
- 1540 to 1600 Flammability Studies of 3-Methyl Pyridine-Water System 997
Yun, R.L.; Chang, Y.M.; Lin, C.H.; Hu, K.H.; Shu, C.M.
- 1600 to 1620 Evaluation of Adiabatic Runaway Reaction and Vent Sizing for Emergency Relief from DSC Calorimetry 1017
Wang, Y.W.; Duh, Y.S.; Shu, C.M.
- 1620 to 1640 Thermal Hazard Evaluation for Methyl Ethyl Ketone Peroxide Mixed with Inorganic Acids 1032
Tseng, J.M.; Duh, Y.S.; Chang, R.H.; Shu, C.M.

**Thermal Conductivity
Wednesday, September 21st, 2005
Producer Room**

Nancy Mathis and Karina Schmidt, Mathis Instruments, Ltd., Co-chairs

- 0920 to 0940 Mathis Effusivity Sensor Package (ESP) Technology: Principles of Operation 1045
*Michael Emanuel**

0940 to 1000 Synthesis, Thermal Conductivity, TGA/DTA, AFM, 29Si NMR and 13C NMR Spectral Studies of Calcium Silicate Hydrate–Polymer Nanocomposite Materials 1046
Mojumdar, S.C.; Raki, L.; Mathis, N.; Schimdt, K.; Lang, S.

1000 to 1020 **Break**

1020 to 1040 Thermal Conductivity of Exfoliated Graphite Nanocomposites 1056
Fukushima, H.; Drzal, L.T.; Rook, B.P.; Rich, M.J.

1040 to 1100 The Characterization of Thermal Interface Materials Using Thermal Conductivity for Within Sample and Batch to Batch Variation Analysis 1063
Qiu, R.; Schmidt, K.; Harris, A.; Chaplin, G.

1100 to 1120 A Conversion Method of DSC Melting Curve to Crystalline Length Distribution in Polymers 1070
N. Tanaka

Tutorials

Wednesday, September 21st, 2005

Producer Room

R. Bruce Prime, www.primethermosets.com, Chair

1400 to 1440 Differential Scanning Calorimetry (DSC) 1075
L.C. Thomas

1440 to 1500 Fast Scan DSC 1084
S. Goth

1500 to 1520 Thermogravimetric Analysis (TGA) 1085
L.E. Waguespack

1520 to 1540 **Break**

1540 to 1600 Basics of TMA 1086
K.P. Menard

1600 to 1620 The Use Of Dynamic Mechanical Analysis In Materials Analysis 1091
J.C. Duncan

1620 to 1700 Establishing Good Laboratory Practices in Thermal Measurements 1092
Riga, A.T.; Seyler, R.

Reference Materials/Calibration

Wednesday, September 21st, 2005

Writer/Director Room

Donald Archer, NIST, Chair

0920 to 1000 Evaluation of Isothermal Titration Measurements on Biological Interactions 1095

Schwarz, F.P.; Eisenstein, E.

1000 to 1020 Calibration of the DSC on Cooling 1101
Sauerbrunn, S.; Zemo, M.

1020 to 1040 Control Charting for Optimization of Instrument Calibration 1108
Potter, C.A.; Verdonck, E.

1040 to 1100 **Break**

1100 to 1120 FlexCal, Calibrate Once for All Conditions 1109
Weddle, B.; Zemo, M.

1120 to 1140 Automated Calibration System for DSC and TGA 1119
Blaine, R.L.; Marcozzi, C.L.

1140 to 1200 New NIST-traceable Standards for Calibration and Validation of
Differential Scanning Calorimetry 1126
Archer, D.G.

1200 to 1320 **Lunch**

1400 to 1420 NIST 8456 Ultra-High Molecular Weight Polyethylene as a Reference
Material for Dynamic Mechanical Analysis 1132
Blaine, R.L.; Bin Wadud, S.

1420 to 1440 The Anatomy of an ASTM Standard 1138
Sauerbrunn, S.; Zemo, M.

1500 to 1520 Interlaboratory Studies of Test Methods; Case: ASTM International
Standard Method E2160 1143
Archer, D. G.