Events

28TH ANNUAL CALORIMETRY CONFERENCE AND 4TH ANNUAL NORTH AMERICAN THERMAL ANALYSIS SOCIETY MEETING WORCESTER, MASS., USA, JUNE 12–15, 1973

Plenary lectures

Huffman Memorial Lecture: The thermodynamics of Berthollides

R. HULTGREN
(Department of Materials Science and Engineering, University of California, Berkeley, California)

A potpouri of solid state decomposition kinetics
P. K. GALLAGHER
(Bell Laboratories, Murray Hill, New Jersey)

Mettler award presentation and address: Calorimetry of liquid crystals — the contributions of different methods
E. M. BARRALL, II
(IBM Research Laboratories, San José, California)

Calorimetry in biochemistry

Testing of the NBS clinical microcalorimeter
E. J. PROSEN and R. N. GOLDBERG
(Physical Chemistry Division, National Bureau of Standards, Washington)

Microcalorimetry assay for glucose in human serum and plasma
R. N. GOLDBERG, E. J. PROSEN, R. N. BOYD, B. R. STAPLES and G. T. ARMSTRONG
(Physical Chemistry Division, National Bureau of Standards, Washington)

Use of microcalorimetry for kinetic study of enzyme catalyzed reactions
L. BERGER, E. J. PROSEN and N. N. REHAK
(National Heart and Lung Institute, Laboratory of Technical Development, Bethesda, Maryland)

Fine structure in thermal growth patterns of bacteria
B. R. STAPLES, E. J. PROSEN, R. N. GOLDBERG and G. T. ARMSTRONG
(Physical Chemistry Division, National Bureau of Standards, Washington)

Flow microcalorimetry as a tool in the study of thermodynamics and kinetic parameters in enzyme reactions
A. E. BEEZER, T. I. STEENSON and H. J. V. TYRELL
(Chemistry Department, Chelsea College, London, England)

Calorimetric detection of bacteriological contamination of thermoprocessed food packages
D. A. MIKELSON and R. A. LAMPI
(U.S. Army Natick Laboratory, Natick, Massachusetts)

Lysozyme and polystyryl-lysozyme binding to glucosamine oligomers
H. D. BROWN, R. O. STASIW, G. BARTLING, S. K. CHATTOPADHYAY and J. W. ZAUN
(Biochemistry Section, Cancer Research Center, Columbia, Missouri)

Calorimetry of binding in the Fe(III)-transferrin complex
J. S. BINFORD, JR. and J. C. FOSTER
(Department of Chemistry, University of South Florida, Tampa, Florida)

The effects of dilution on cell suspensions
A. P. FLETCHER
(Department of Chemistry, American National Red Cross, Blood Research Laboratory, Bethesda, Md)

The heat of binding of 2,3-diphosphoglycerate and inositol hexaphosphate to hemoglobin as a function of the hemoglobin oxygenation state
D. P. NELSON and L. A. KIESOW
(Experimental Medicine Division, Naval Medical Research Institute, Bethesda, Maryland)

Enthalpy of oxidation of flavin mononucleotide
N. V. BEAUDETTE and N. R. LANGERMAN
(Department of Biochemistry and Pharmacology, Tufts University School of Medicine, Boston, Massachusetts)

Thermodynamics of interaction of nitrophenyl haptens with antibodies and myeloma proteins
M. F. M. JOHNSTON, B. G. BARISAS, H. N. EISEN, S. J. SINGER and J. M. STURTEVANT
(Department of Chemistry, Yale University, Department of Biology, University of California, San Diego; and Department of Microbiology, Washington University)

The importance of calorimetric data and the Gibbs–Helmholtz relation in the study of ligand binding to multi-site biopolymers
C. NIEKAMP, J. M. STURTEVANT and S. F. VELICK
(Department of Chemistry, Yale University and Department of Biochemistry, University of Utah)

Heat capacities, ligand binding to macromolecules and information theory
R. L. BILTONEN
(Departments of Biochemistry and Pharmacology, University of Virginia, School of Medicine, Charlottesville, Virginia)

Metal ion binding sites on proteins as determined by titration calorimetry
L. D. HANSEN, D. J. EATOUGH, R. M. IZATT and J. J. CHRISTENSEN
(Center for Thermochemical Studies, Brigham Young University, Provo, Utah)

A DSC study of the conformational transition of PBG (poly-γBenzyl-L-Glutamate)
J. SIMON and F. E. KARASZ
(Polymer Science and Engineering, University of Massachusetts, Amherst, Massachusetts)

Differential scanning calorimetry of low energy thermal phenomena in biochemistry
B. CASSEL
(Perkin–Elmer Corp., Norwalk, Connecticut)

Calorimetric studies of human red blood cell membranes
A. T. SCHWARTZ, K. A. LYSKO, W. M. JACKSON and J. F. BRANDTS
(Department of Chemistry, University of Massachusetts, Amherst, Massachusetts)

Characterization of some biopolymeric tissues by DSC
W. T. HUMPHRIES and R. H. WILDNAUER
(Department of Skin Biology, Johnson & Johnson Research, New Brunswick, New Jersey)

Textile fibre characterization by differential thermal analysis
J. S. CRIGHTON and D. A. HOLMES
(University of Bradford, England)

Binary systems of cholesteryl esters
R. J. KRZEWKI and R. S. PORTER
(Polymer Science and Engineering, University of Massachusetts, Amherst, Massachusetts)

Brief report on activities of proposed joint IUPAT—IUB—IUPAB Commission on thermodynamics and biological materials
G. T. ARMSTRONG
(Thermochemistry Section, National Bureau of Standards, Washington)

Low temperatures

Heat capacity of $^{242}PuF_3$ from 10 to 350 K
D. W. OSBORN, H. E. FLOTOW, S. M. FRIED and J. G. MALM
(Chemistry Division Argonne National Laboratory, Argonne, Ill.)

The use of a low temperature adiabatic calorimeter method for the determination of the specific heat of plutonium-242
R. O. A. HALL, J. A. LEE, M. J. MORTIMER and P. W. SUTCLIFFE
(Process Technology Division, A.E.R.E., Harwell, Berke, England

Phase transitions in the hexabromohypoantimonates
S. H. LEE and C. A. WULFF
(Department of Chemistry, University of Vermont, Burlington, Vermont)

Thermophysical properties of molybdenum disulfide, diselenide and ditelluride
H. L. KIWIA, J. J. MCBRIDE and E. F. MESTRUM, JR.
(Department of Chemistry, University of Michigan, Ann Arbor, Michigan)

Thermal analysis

The heat capacity of amorphous linear macromolecules above the glass transition temperature
B. WUNDERLICH
(Department of Chemistry, Rensselaer Polytechnic Institute, Troy, N. Y.)

Determination of the specific heat of four cellulose nitrates by differential scanning calorimetry
L. J. DECKER, J. R. WARD and E. FREEDMAN
(U.S. Army Ballistic Research Laboratories, Aberdeen Proving Ground MD)

Thermal analyses of polymers XIV. Multiple melting phenomena in poly(ethylene terephthalate)
G. W. MILLER
(Owens—Illinois, Inc. Toledo, Ohio)

A differential temperature study of the thermal fusion of adjacent polymer phases
W. A. FRASER, J. C. WHITWELL and B. MILLER
(Textile Research Institute, and Department of Chemical Engineering, Princeton University, Princeton, New Jersey)

New EGA method for the determination of oxidants in coal
F. W. REINHARDT
(Sandia Laboratories, Albuquerque, N.M.)

Thermal decomposition of zinc chromates
R. P. CLARK and F. W. REINHARDT
(Sandia Laboratories, Albuquerque, N.M.)

DTA kinetic analysis of metal-oxidant solid state reactions
A. J. BEARDELL and A. D. KIRSHENBAUM
(Feltman Research Laboratory, Pyrotechnics Division Picatinny Arsenal, Dover, N.J.)

Ammonium polyvanadates as intermediate products of thermal decomposition of ammonium metavanadate in the air atmosphere
J. TRAU
(Department of Chemistry, Portland, Oregon)

The thermal decomposition reactions of $[Co(en)_3]Cl_3$ *and* $[Co(en)_3]Br_3$ *complexes*
L. W. COLLINS, W. W. WENDLANDT and E. K. GIBSON
(Department of Chemistry, University of Houston, Houston, Texas and Johnson Space Center, Houston, Texas)

Hydration of $Ca_3SiO_5(C_3S)-K_2CO_3$ *system*
J. N. MAYCOCK and J. SKALNY
(Martin-Marietta Corporation, Baltimore, Md)

Differential thermal analysis of solid state reactions under complete volume confinement
C. CAMPBELL and A. J. BEARDELL
(Feltman Research Laboratory, Pyrotechnics Division, Picatinny Arsenal, Dover, N.J.

The catalytic conversion of SO_2 *to* SO_3 *by fly ash and the capture of* SO_2 *and* SO_3 *by CaO and MgO*
P. MARIER and H. P. DIBBS
(Control Technology Section, Technology Development Branch, Air Pollution Control Directorate, Ottawa, Canada)

Investigation of the main parameters of catalysts for the oxidation of graphite
A. O. WIST and K. D. DAUGHERTY
(Department of Chemistry, University of Pittsburgh)

Determination of the reactivity of CuO on Al_2O_3 *using thermal analysis*
G. W. BAILEY and J. T. WADE
(Esso Research Laboratories, Exxon Company, U.S.A., Baton Rouge, Luisiana)

Thermal characterization of iron oxide films
P. K. GALLAGHER, W. R. SINCLAIR, R. A. FASTNACHT and J. P. LUONGO
(Bell Laboratories, Murray Hill, New Jersey)

The detection of chrysotile asbestos at low levels in talc by differential thermal analysis
J. P. SCHELZ
(Johnson & Johnson, New Brunswick, N.J.)

A dynamic electrothermal analysis technique based on dielectric measurements
J. CHIU
(Plastics Department, E. I. DuPont de Nemours & Co., Inc., Experimental Station, Wilmington, Delaware)

Use of a programmable calculator for on-line interaction with a thermal analysis system
D. CARPENTER and W. W. WENDLANDT
(Technical Equipment Corp., Denver, Colo.; Department of Chemistry, University of Houston, Houston, Texas)

Application of digital integrators to differential thermal analysis
R. H. GORE
(Applications Laboratory, Columbia Scientific Industries, Austin, Texas)

The design and performance of an improved scanning calorimeter
M. J. O'NEILL
(Perkin—Elmer Corporation, Norwalk, Conn.)

Techniques for improving the performance of the Perkin-Elmer scanning calorimeter
E. M. BARRAL II and B. DAWSON
(IBM Research Laboratories, Monterey and Cottle Roads, San Jose, California)

Calorimetric methods for differential scanning calorimetry
J. H. FLYNN
(Institute for Materials Research, National Bureau of Standards, Washington, D.C.)

High-pressure capsules for DCS
E. F. WESTRUM, JR., S. HENRIQUEZ and N. JOHNSTON
(Department of Chemistry, University of Michigan, Ann Arbor, Michigan)

A scanning calorimeter based on a transistor junction
E. L. DOSCH
(Denver, Colorado)

Thermal analysis studies of the decomposition of sodium and potassium tartrates
A. C. GLATZ
(Voland Corp., New Rochelle, N.Y.)

The practice of obtaining kinetic data by DSC
A. DUSWALT
(Hercules Incorporated, Wilmington, Delaware)

Dolomite for the determination of atmosphere control in thermal analysis
J. W. SMITH, D. R. JOHNSON and M. MUELLER-VON MOOS

Low and high temperature

Adiabatic calorimetric study of azulene from 5 to 400 K. Gradual onset of orientational disorder
I. J. BRINK and E. F. WESTRUM, JR.
(Department of Chemistry, Hope College, Holland, Michigan; Department of Chemistry, University of Michigan, Ann Arbor, Michigan)

Heat capacities and transitional behavior of crystalline and liquid o-, and m-carboranes
S. HENRIQUEZ, E. F. WESTRUM, JR. and R. W. RUDOLPH
(Department of Chemistry, University of Michigan, Ann Arbor, Michigan)

The enthalpy of liquid sodium to 1300 *K by drop calorimetry*
D. R. FREDRICKSON and M. G. CHASANOV
(Argonne National Laboratory, Argonne, Illinois)

Design of a high temperature calorimeter and determination of some thermodynamic properties of alpha and sigma phases in the V—Cr—Fe system
I. MALINSKY and F. CLAISSE
(Department of Natural Resources, Ste Foy, Quebec, Que.)

High temperatures

The heat capacity of liquid bismuth and tin
C. R. BROOKS
(Chemical and Metallurgical Engineering Department, The University of Tennessee, Knoxville, Tennessee)

Measurement of the enthalpy of liquid uranium with a liquid argon calorimeter
H. P. STEPHENS
(Sandia Laboratories, Albuquerque, New Mexico)

Transition thermodynamics of a long-range nematic liquid crystal
J. T. S. ANDREWS
(Liquid Crystal Institute, Kent State University, Kent, Ohio)

Design and instrumentation

New principles of calorimetric design
H. WEBER
(Eidg. Techn. Hochschule Zurich, Switzerland)

A cell model for isoperibol calorimeters
K. L. CHURNEY, E. D. WEST and G. T. ARMSTRONG
(National Bureau of Standards, Washington D.C.)

Analytical consideration of the distribution error in a twin-bridge isothermal calorimeter
W. P. SCHIMMEL, JR. and A. B. DONALDSON
(Sandia Laboratories, Albuquerque, New Mexico)

Construction of a heat conduction scanning microcalorimeter
P. D. ROSS and R. N. GOLDBERG
(NIAMDD — National Institutes of Health, Bethesda, Maryland; Physical Chemistry Division, National Bureau of Standards, Washington D.C.)

An automatic system for precise temperature and power measurements for calorimetry
H. L. DANEMAN, P. CHIRGWIN and J. L. MCGILL
(Leeds and Northrup Company, North Wales, Pennsylvania)

A. C. and D.C. measurements on germanium and platinum thermometers
D. L. MARTIN
(Division of Physics, National Research Council of Canada, Ottawa)

Calorimeters for measurement of the energy of high-power laser pulses
S. R. GUNN
(Lawrence Livermore Laboratory, Livermore, California)

Thermokinetic studies in heterogenous catalysis by means of heat-flow calorimeters
P. C. GRAVELLE
(Institut de Recherches sur la Catalyse, C.N.R.S. 69100 Villeurbanne, France)

Combustion calorimetry

The enthalpies of formation of Mo_2C and Mo_3C_2 by fluorine bomb calorimetry
G. K. JOHNSON, W. N. HUBBARD and E. K. STORMS
(Argonne National Laboratory, Argonne, Illinois; Los Alamos Scientific Laboratory, Los Alamos, New Mexico)

The enthalpy of formation of hafnium dioxide
A. N. KORNILOV, I. M. USHAKOVA and E. J. HUBER, JR., C. E. HOLLEY, JR.
(Moscow State University, Moscow, U.S.S.R.; University of California, Los Alamos Scientific Laboratory, Los Alamos, New Mexico)

The heats of combustion and formation of [4.5] *spirodecane*, [5.5] *spiroundecane, and* [5.6] *spirododecane*
D. J. SUBACH, M. E. BELL and B. J. ZWOLINSKI
(Thermodynamics Research Center, Department of Chemistry, Texas A & N University, College Station, Texas)

Heats of combustion and formation of some sugars and sugar hydrates
M. E. BELL, D. J. SUBACH and R. C. WILHOIT
(Thermodynamics Research Center, Department of Chemistry, Texas and A & M University, College Station, Texas)

The enthalpies of combustion and formation of n-butylbenzene, the diethylbenzenes, the methyl-n-propyl-benzenes, and the methyl-iso-propylbenzenes
W. D. GOOD
(Bartlesville Energy Research Center, Bureau of Mines, U.S. Department of the Interior, Bartlesville, Oklahoma)

A micro combustion calorimeter and an ampoule technique for 5 to 10 mg samples
M. MANSSON
(Thermochemistry Laboratory, Chemical Center, University of Lund, Sweden)

Solution calorimetry

Recent calorimetric studies on compounds of interest in reactor chemistry
P.A.C. O'HARE and H. R. HOEKSTRA
(Argonne National Laboratory, Argonne, Illinois)

Precision solution calorimetry at high dilution: thorium nitrate
L. R. MORSE
(School of Chemistry, Rutgers University, New Brunswich, N.J.)

Heats of solution of anilines in water
J. MULLENS and P. HUYSKENS
(Laboratory of Physical Chemistry, University of Louvain (K.U.L.) 3030-Heverlee, Belgium)

The heats of solvation of some sterically hindered phenols
B. D. KYBETT and T. R. KRISHNAN
(Department of Chemistry, University of Saskatchewan, Regina, Saskatchewan, Canada)

Heat capacities of aqueous 1 : 1 electrolytes in water
J. E. DESNOYERS, G. PERRON, J. L. FORTIER and P. A. LEDUC
(Department of Chemistry, Université de Sherbrooke, Sherbrooke, P.Q. Canada)

Calorimetric studies of mixed ligand metal complexes
I. TINGPO and G. H. NANCOLLAS
(Chemistry Department, State University of New York at Buffalo, Buffalo, New York)

Characteristics of a new geochemical calorimeter
J. E. BAUMAN, JR. and DON ZEBOLSKY
(Department of Chemistry, University of Missoure, Columbia; Department of Chemistry, Creighton University, Omaha, Nebraska)

The semi automatic thermometric titration of nitric acid in the presence of hydrolyzable ions
E. VAN DALEN
(Arvida Research Centre, Aluminium Company of Canada, Ltd., Arvida, Que., Canada)

Solution chemistry

The thermodynamics of tris(hydroxymethyl)aminomethane(tris) in n-methylpropionamide (NMP) and water
J. S. FALCONE, JR. and R. G. BATES
(Department of Chemistry, University of Florida, Gainesville, Florida)

The strength of binding of nitrogen to osmium and ruthenium complexes
G. D. WATT
(Kettering Research Laboratories, Yellow Springs, Ohio)

A calorimetric study of molybdenum complexes as models for molybdo-enzymes
G. D. WATT, W. NEWTON and J. MCDONALD
(Kettering Research Laboratories, Yellow Springs, Ohio)

Phase change

Thermodynamics of vaporization and vapor association of molybdenum pentafluoride
T. B. DOUGLAS and R. F. KRAUSE, JR.
(National Bureau of Standards, Washington D.C.)

Thermodynamic and phase equilibria investigation of hexafluorobenzene solid addition compounds
J. B. OTT, J. R. GOATES and J. REEDER
(Department of Chemistry, Brigham Young University, Provo, Utah)

Data estimating and cataloging

Computer implementation of a second order additivity method for the estimation of chemical thermodynamic data
W. H. SEATON and E. FREEDMAN
(Tennessee Eastman Company, Kingsport, Tn; U.S. Army Ballistic Research Laboratories, Aberdeen Proving Ground, MD.)

The catalog of thermochemical properties
G. T. ARMSTRONG
(Physical Chemistry Division, National Bureau of Standards, Washington, D.C.)