23RD JAPANESE CONFERENCE ON CALORIMETRY AND THERMAL ANALYSIS WAS HELD IN HIROSHIMA UNIVERSITY

October 12–14, 1987

The following lectures were presented:

Thermal properties of zein protein from corn.
J. MAGOSHI, K. KASAMO, S. NAKAMURA* and K. NURAKAMI
(National Institute of Agrobiological Resources and *Kanagawa University)

A DSC study of the conformational transitions of schizophyllan in mixtures of water-DMSO.
S. KITAMURA, T. KUGE snd *J. M. STURTEVANT
(Department of Agricultural Chemistry, Kyoto Prefectural University, and Department of Chemistry, Yale University)

Phase transition of water-pullulan and -relative polysaccharides.
H. YOSHIDA*[1], T. HATAKEYAMA*[2], H. HATAKEYAMA*[3]
(*[1]Tokyo Metropolitan University, *[2]Research Institute for Polymers and Textiles and *[3]Industrial Products Research Institute)

The confirmation of the formation of clathrate-like hydrate of tetraisopenthylammonium polyacrylate by differential scanning calorimetry.
H. NAKAYAMA
(Faculty of Engineering, Yokohama National University)

Heat capacity and glass transition of tetrahydrofuran clathrate hydrate.
O. YAMAMURO, M. OGUNI, T. MATSUO and H. SUGA
(Department of Chemistry and Chemical Thermodynamics Laboratory Faculty of Science, Osaka University)

Heat capacity and molecular motion of clathrate hydrates encaging xenon and ethylene oxide.
O. YAMAMURO, Y. P. HANDA*, M. OGUNI and H. SUGA
(Department of Chemistry and Chemical Thermodynamics Laboratory Faculty of Science, Osaka University and *Division of Chemistry, National Research Council of Canada)

John Wiley & Sons, Limited, Chichester
Akadémiai Kiadó, Budapest

Plenary Lecture 1

Microcalorimetric study of the self-association of amphiphilic substances in solution.
HENRI TACHOIRE
(University Provence, France)

High sensitive DSC analysis of UV-irradiated DNA.
K. TAKAHASHI, A. KISHI, A. MAEZONO, H. FUKADA* and K. TAKAHASHI*
(ULVAC Co. Ltd., and *Laboratory of Biophysical Chemistry, College of Agriculture, University of Osaka Prefecture)

Helix-coild transition of plasmid DNA by adiabatic differential scanning microcalorimetry.
Y. MAEDA, K. TAKAHASHI* and E. OHTSUBO
(Institute of Applied Microbiology, University of Tokyo and *Shinku-riko, Inc.)

Thermodynamics of peptide hormone ((Nle^{21}]−CRF).
H. UEDAIRA, S. KIDOKORO*, S. OHASHI, T. KOKUBO and A. WADA*
(Res. Inst. for Polymers and Textiles and *Fac. of Sci., Univ. of Tokyo)

Thermal behavior of cancer cells.
K. AMAYA
(National Chemical Laboratory for Industry)

Proton ordering in hexagonal ice (VII).
Y. MIYAZAKI, D. KANEKO, T.MATSUO and H. SUGA
(Department of Chemistry and Chemical Thermodynamics Laboratory, Faculty of Science, Osaka University)

Thermal study of amorphous 1-pentene.
K. TAKEDA, M. OGUNI, T. MATSUO and H. SUGA
(Department of Chemistry and Chemical Thermodynamics Laboratory, Faculty of Science, Osaka University)

Thermodynamics properties of thiophene-benzene solid solutions (II).
N. OKAMOTO, M. OGUNI and H. SUGA
(Department of Chemistry and Chemical Thermodynamics Laboratory, Faculty of Science, Osaka University)

Excess enthalpies of $C_6H_{12}+C_6D_{12}$ and $CH_2CL_2+CD_2Cl_2$.
T. KIMURA and S. TAGAKI
(Department of Chemistry, Kinki University)

Thermodynamic Properties III. The mixtures of decalin + hexane isomers.
K. OHNISHI, J. FUJIHARA* and S. MURAKAMI
(Dep. of Chem. Fac. of Sci. Osaka City Univ. and *Fac. of General Educ. Osaka Industrial Univ.)

Thermodynamic properties of mixtures containing acetone(III), molar excess isobaric heat capacities.
K. YAMANAKA, H. OGAWA and S. MURAKAMI
(Department of Chemistry, Faculty of Science, Osaka City University)

Excess enthalpies of 2-alkanone + DMSO.
M. HIROTA, T. KIMURA and S. TAKAGI
(Department of Chemistry, Kinki University)

Heat capacity measurement under hydrostatic pressures between 0.5 K and 20 K.
K. TAKEDA
(Dept. of Applied Science, Fac. of Engineering, Kyushu Univ.)

Heat capacity anomalies of several paramagnetic trinuclear complex compounds at very low temperatures.
M. NAKANO, Z. TAN, M. SORAI and H. SUGA
(Chemical Thermodynamics Laboratory, Faculty of Science, Osaka University)

Rotational states of NH_4^+ in KBr lattice.
T. FUJIWARA, A. INABA and H. CHIHARA
(Department of Chemistry, Faculty of Science, Osaka Univ.)

Heat of wetting of zirconium phosphate in amine solution.
M. HATTORI, Y. YOLOYAMA and S. YAMANAKA
(Department of Chemistry, Faculty of Engineering, Hiroshima University)

Surface electrostatic field strength of TiO_2, effect of chemisorbed H_2O.
Y. SUDA and T. MORIMOTO
(Okayama University)

Development of small scale adiabatic calorimeter (700 °C), and calorimetry and inorganic materials and minerals.
T. MIZOTA
(Dept. Mining and Mineral Engineering, Yamaguchi University)

AD calorimetric study of $AgCrS_2$.
H. KAWAJI, T. ATAKE and Y. SAITO
(Research Laboratory of Engineering Materials, Tokyo Institute of Technology)

Measurement of high-temperature heat content of III–V compounds by using drop-calorimeter.
KATSUNORI YAMAGUCHI*, KIMIO ITAGAKI** and AKIRA YAZAWA**
(*Graduate Student, Tohoku University, Sendai, **Research Institute of Mineral Dressing and Metallurgy, and Tohoku University, Sendai)

Measurement of enthalpy of solution of ilmenite-type $MgSiO_3$ by calvet type calorimetry.
T. ASHIDA*[1], S. KUME*[1], A. NAVROTSKY*[2] and E. ITO*[3]
(*[1]College of General Education, Osaka Univ., *[2]Department of Geological and Geophysical Sciences, Princeton Univ. and *[3]Institute for Study of the Earth's Interior, Okayama University)

Thermal behaviour and reactivity of the surface layer of powders by emanation thermal analysis. (III) ETA of various iron oxide and aluminium oxide powders.
T. ISHII
(Dept. of Applied Chemistry, Fac. of Engineering, Hokkaido University)

Thermal behaviour and reactivity of the surface layer of powders by emanation thermal analysis. (IV) ETA of solid solution formation in systems Fe_2O_3–Al_2O_3.
T. ISHII
(Dept. of Applied Chemistry, Fac. of Engineering, Hokkaido University)

Thermal stability of fibrous zeolites.
H. MATSUMOTO, A. YAMAZAKI and R. OTSUKA
(Department of Mineral Industry, School of Science and Engineering, Waseda University)

Oxidation of chromium sulfides.
X. SHIGEGAKI, S. K. BASU, H. HINODE and M. TANIGUCHI
(Department of Chemical Engineering, Tokyo Institute of Technology)

Kinetics of sulfidation of niobium.
H. KANO, H. HINODE, M. WAKIHARA and M. TANIGUCHI
(Tokyo Institute of Technology)

Oxidation of molten nickel and cobalt sulfides.
Z. ASAKI, H. ABE, K. MURATA and Y. KONDO
(Dept. of Metallurgy, Fac. of Engineering, Kyoto University)

Analysis of sintering behaviour of non-oxide ceramics by high-temperature dilatometer.
O. ABE, S. KANZAKI, M. OHASHI and H. TABATA
(Government Industrial Research Institute, Nagoya)

Thermal analysis of the clathrate compounds formed between metal complex hosts and aromatic guest molecules. (5) Liberation of guest molecule from three-dimensional metal complex host.
T. KITAZAWA, S. NISHIKIORI and T. IWAMOTO
(Department of Chemistry, College of Arts and Sciences, The University of Tokyo)

Kinetic study on thermal dehydration of zinc formate dihydrate under various water vapour pressures.
R. ITO, K. NAGAGATA, Y. ITO and Y. MADUSA*
(Department of Chemistry, Fac. of Chem., Niigata Univ. and *General Education Dept., Niigata Univ.)

Kinetic study on thermal isomerization of $[Ni(1,2\text{-butanediamine})_2]Br_2$ complex. by DSC.
T. MATSUDA, K. HIRASAWA, H. KUME, Y. MASUDA, Y. IHARA* and I. MASUDA**
(Department of Chemistry. Fac. of Science, Niigata Univ. *Laboratory of Chemistry, Faculty of Education, Kanazawa Univ. and **General Education Dept., Niigata Univ).

Thermal decomposition of nitrates.
H. TAGAWA
(Institute of Environmental Science and Technology, Yokohama National Univ.)

Thermal decomposition of alkalinearth metal alkoxides.
T. ISHIHARA, K. AMITA and G. HASHIZUME
(Industrial Research Institute of Hyogo Prefecture)

Low temperature phase relation of $BaZnGeO_4$.
A. HAMANO, T. ATAKE and Y. SAITO
(Research Laboratory of Engineering Materials, Tokyo Institute of Technology)

Kinetic compensation effect between the isothermal and non-isothermal decompositions of inorganic solids.
N. KOGA and H. TANAKA
(Chem. Lab., Fac. of School. Educ., Hiroshima Univ.)

Thermal decomposition of samarium(III) propionate monohydrate.
M. OAGAWA and K. MANABE
(Tokyo Institute of Polytechnics)

Formation of yttrium oxide by thermal decomposition of yttrium hydroxides.
T. SATO*[1], S. IMAEDA*[2] and K. SATO*[2]
(*[1]Alcan International and *[1,2]Shizuoka Univ.)

Thermal decomposition of precipitates by reacting aluminium phosphate solutions with alkali.
T. SATO*[1] and K. SATO*[2]
(Alcan International *[1] and Toyo Ink Manufacturing*[2])

Thermal decomposition of monoethyl metal salts.
T. WATANABE* and H. KURIHARA**
(*Faculty of Humanities and Culture, Tokai Univ., and **Faculty of Science, Tokai Univ.)

Kinetic study of the thermal decompositions of MC_2O_4 (M = Ca, Sr, Ba).
H. TANAKA and N. KOGA
(Chem. Lab., Fac. of School. Educ., Hiroshima Univ.)

Kinetic study of the thermal decomposition of MCO_3 (M = Ca, Sr, Ba).
N. KOGA and H. TANAKA
(Chem. Lab., Fac. of School Educ., Hiroshima Univ.)

Thermal dehydration kinetics of single crystalline copper(II) sulfate pentahydrate.
H. TANAKA and N. KOGA
(Chem. Lab., Fac. of School. Educ., Hiroshima Univ.)

Plenary Lecture 2

Ancient materials and artifacts of asiatic cultures investigated by thermoanalytical methods.
HANS G. WIEDEMANN
(Mettler Instrumente AG, Switzerland)

Microbomb combustion calorimetry of biphenyl.
Y. NAGANO, K. KAWASAKI and M. SAKIYAMA
(Faculty of Science, Osaka University)

Microbomb combustion calorimetry of organic nitrogen compounds.
M. SAKIYAMA, M. UNNO and T. MITSUHASHI*
(Faculty of Science, Osaka Univ. and *Faculty of Science, The Univ. of Tokyo)

Combustion calorimetric study on tetraalkylammonium iodide salts.
Y. NAGANO, M. SAKIYAMA, T. FUJIWARA* and Y. KONDO*
(Dept. of Chem., Osaka Univ. and *Dept. of Appl. Chem., Osaka Univ.)

Thermodynamic behaviour of the system [Co(3-EtO-salen)]-O_2.
N. KURIYAMA and M. SAKIYAMA
(Chemical Thermodynamics Laboratory, Fac. of Sci., Osaka Univ.)

Microwaves and specific heat determination.
E. KARMAZSIN
(Universite Claude Bernard Lyon 1. Department of Applied Chemistry and Chemical Engineering (CNRS UA 417), France)

The study of DSC measurement for specific heat capacity.
K. FUJIMOTO, Y. NISHIMOTO, K. OHSHIRO and Y. ICHIMURA
(Seiko Instruments Inc.)

Determination of heat of fusion for micro samples by means of high sensitivity DSC.
T. NOMAKI
(Toshiba Research and Development Center)

Measuring condisitons of purity determination by DSC.
X. KIDAKA and T. OKINO
(Analytical Application Laboratory, Shimadzu Corp.)

New type of thermoanalytical instrument used gas sensor and its application.
K. EHARA
(Dept. of Polymer Technology, Fac. of Engineering, Tokyo Institute of Technology)

Development and application of differential TG and DTA.
T. SUGIYAMA and T. TSUKAMOTO*
(Mac Science Corp. and *Science University of Tokyo)

TG–FTIR combined system and its application.
M. OHTA, T. OKINO and K. ICHIMURA
(Shimadzu Corp.)

Chemical potential diagram for double oxides and its application to solid oxide fuel cell.
H. YOKOKAWA, T. KAWADA and M. DOKIYA
(National Chemical Laboratory for Industry)

Enthalpy of amorphous oxides
K. KAWAMURA, T. MAEKAWA and T. YOKOKAWA
(Department of Chemistry, Hokkaido University)

The structural relaxation and the thermodynamical analysis for $Tl_2O \cdot 4B_2O_3$ oxide glass.
Q. Xu. KICHIKAWA and T. YOKOKAWA
(Department of Chemistry, Faculty of Science, Hokkaido Univ.)

Thermodynamic studies on transition metal sulfides by EMF method using CaF_2 solid electrolyte.
K. UESIMA, K. HIRAKAWA, T. UCHIDA, M. WAKIHARA and M. TANIGUCHI
(Tokyo Institute of Technology)

Vaporization study on fission produced noble metal alloys by mass-spectrometric method.
T. MATSUI and K. NAITO
(Department of Nuclear Engineering, Faculty of Engineering, Nagoya University)

Heat capacity anomaly of vanadium monoxide.
T. ASANO, T. MATSUI, T. TSUJI, H. INABA and K. NAITO
(Department of Nuclear Engineering, Faculty of Engineering, Nagoya University)

Plenary Lecture 3

Ceramic processing and thermal analysis.
N. MIZUTANI
(Tokyo Institute of Technology)

Calorimetric studies of high-temperature oxide superconductors.
T. ATAKE and Y. SAITO
(Research Laboratory of Engineering Materials, Tokyo Institute of Technology)

Preparation of $YBa_2Cu_3O_y$ thin film by thermal decomposition of painted film.
A. NEGISHI, R. SAKAMOTO, Y. TAKAHASHI, M. KAMINOTO and T. OZAWA
(Electrotechnical Laboratory)

TG–DTA of superconductor ($YBa_2Cu_3O_y$).
R. SAKAMOTO, T. OZAWA, Y. TAKAHASHI, A. NEGISHI and M. KAMIMOTO
(Elektrotechnical Laboratory)

The thermal constant measurements of superconducting materials by AC calorimetry.
T. AZUMI, A. KISHI, R. KATO, H. OKAMOTO and I. HATTA*
(Shinku Rico and *Nagoya Univ.)

Heat capacity of CO adsorbed on graphite at low temperatures.
T. SHIRAKAMI, A. INABA and H. CHIHARA
(Department of Chemistry, Faculty of Science, Osaka Univ.)

Low temperature heat capacity of pentylcyanobiphenyl.
T. ATAKE, H. SHITARA and Y. SAITO
(Research Laboratory of Engineering Materials, Tokyo Institute of Technology)

Heat capacities of lithium, sodium and potassium nitrates by differential scanning calorimetry.
Y. TAKAHASHI, R. SAKAMOTO and M. KAMIMOTO
(Electrotechnical Laboratory)

Linear system theory of calorimeter.
S. TANAKA
(National Chemical Laboratory for Industry)

Application of the deconvolution method to the kinetic studies by conduction type microcalorimeter.
T. YAMANE, S. KATAYAMA and M. TODOKI
(Toray Research Center, Inc.)

A flow micro reaction calorimeter and its application of the study of membrane proteins.
S. MORIMOTO and S. ITOH*
(Research Institute for Polymers and Textiles and *Bioreaction Research Laboratory

AC Microcalorimeter for liquid materials.
H. YAO and I. HATTA
(Department of Applied Physics, Faculty of Engineering, Nagoya University)

Adiabatic calorimeter with built-in electrodes for depolarization current measurement.
I. KISHIMOTO, T. MATSUO and H. SUGA
(Department of Chemistry and Chemical Thermodynamics Laboratory Faculty of Science, Osaka University)

Microcomputer-enhanced temperature control of water bath applied to heat exchange calorimetry.
J. KAWAHITO and S. FUJIEDA
(Department of Chemistry, Ochanomizu University

Estimation of heat loss from the surface of samples in a calorimeter due to free convection.
T. GENKA
(Japan Atomic Energy Research Institute)

Plenary Lecture 4

The importance of calorimetric measurements in providing a firm basis of thermodynamic equilibrium calculations.
P. J. SPENCER
(RWTH Aachen, West Germany)

Visco-elastic measurement of polymer samples using thermomechanical analyser with enhanced function.
K. OSHIRO, N. NAKAMURA, K. KAWASAKI and Y. TERAMOTO
(Seiko Instruments Inc.)

Sample cell for thermoanalytical microscopy
K. S. KUNIHISA and Y. SATOMI
(National Chemical Laboratory for Industry)

A precise resonance frequency measuring apparatus for a magnetic thermometer.
(K. AMAYA
(National Chemical Laboratory for Industry)

Thermal diffusivity measurement by ring-type laser flash.
T. MITSUHASHI*, F. MUTA and Y. FUJIKI
(*National Institute for Researches in Inorganic Materials and Rigaku Keisoku Co., Ltd.)

Wide scattring pyrometer on solar furnace.
T. YAMADA, M. MIZUNO, M. YOSHIMURA* and S. SOMIYA
(Government Industrial Research Institute, Nagoya and *Tokyo Institute of Technology)

Heat capacity and phase transition of the thermochromic copper complex $[Cu(dieten)_2](BF_4)_2$.
A. NISHIMORI and M. SORAI
(Chemical Thermodynamics Laboratory, Faculty of Science, Osaka University)

Phase transition of the mixed-valence complex compound $[Mn_3O(O_2CCH_3)_6(py)_3](py)$.
M. NAKANO, M. SORAI, D. N. HENDRICKSON and J. B. VONCENT
(Chemical Thermodynamics Laboratory, Faculty of Science, Osaka University)

Heat capacities and phase transitions of anilinium bromide and iodide, and their deuterated analogs.
N. ONODA, T. MATSUO and H. SUGA
(Department of Chemistry and Chemical Thermodynamics Laboratory, Faculty of Science, Osaka University)

Structure of water in hydroxypropyl cellulose-water system.
H. YOSHIDA and K. NANBU
(Department of Industrial Chemistry, Tokyo metropolitan Univ.)

Study on the thermal behaviour of the water in food.
T. TAKIGAWA, Y. BABA and A. KAGEMOTO
(Department of Chemistry, Osaka Institute of Technology)

Heat capacity of water sorbed on polymers.
T. HATAKEYAMA*, H. YOSHIDA** and H. HATAKEYAMA***
(*Research Institute for Polymers and Textilgs, **Tokyo Metropolitan University and ***Industrial Products Research Institute)

Pore size distribution measurements in hydrogel by differential scanning calorimetry.
K. ISHIKIRIYAMA and M. TODOKI
(Toray Research Center, Inc.)

DSC measurement of microporous expanded PTFE.
T. SHIMIZU, T. NAKAGAWA and S. ICHIBA
(R&D Department, Daikin Industries Ltd.)

Evaluation of reactivity of epoxy pre-pregs by pressure DSC.
F. MIYAMOTO, K. NAGATA, H. NAKAJIMA and E. JIDAI
(Manufacturing Development Laboratory, Mitsubishi Electric Corp.)

Thermal analysis of curing reaction of epoxy resin with polyfunctional active ester.
S. NAKAMURA, Y. SAEGUSA, H. YANAGISAWA and T. YANAGISAWA
(Faculty of Engineering, Kanagawa University)

Thermoanalytical evaluation on internal stress of epoxy resin(II).
H. ITO, I. TAKAHASHI and K. OKAHASHI
(Manufacturing Development Laboratory, Mitsubishi Electric Corp.)

Thermal decomposition of epoxy resin studied by thermal analysis.
K. NAGATA, F. MIYAMOTO, T. WATANABE and Y. SHIBUYA
(Manufacturing Development Lab., Mitsubishi Electric Corp.)

Calorimetry of aqueous solutions of alcoxyalcohols.
R. KADOWAKI, H. TOUHARA and K. NAKANISHI
(Dept. of Industrial Chemistry, Kyoto University)

Dissolved state of poly(vinylpyrrolidone) in the mixed solvents of water-methanol and water-ethanol.
F. KAWAIZUMI, K. MATSUMOTO and H. NOMURA
(School of Engineering, Nagoya University)

Physico-chemical properties of some acid slats of dicarboxylic acids with short hydrogen bonds(1).
M. FUKAI, T. MATSUO and H. SUGA
(Department of Chemistry and Chemical Thermodynamics Lab. Fac. of Science, Osaka University)

DR. JEAN ROUQUEROL WINS METTLER AWARD FOR 1988

Dr. Jean Rouquerol, Deputy Director of the Center for Thermodynamics and Microcalorimetry, Marseille, France, has been selected as the 21st recipient of the Mettler Award in Thermal Analysis.

Dr. Rouquerol is cited for important fundamental work in the field of adsorption thermodynamics and for the development of new techniques in thermal analysis and microcalorimetry, in addition to services to thermal analysis as President of the French Association for Calorimetry and Thermal Analysis, as chairman of the Science Committee of the International Confederation for Thermal Analysis and as a member of the IUPAC Commission on Thermodynamics.

The Mettler Award for 1988 was presented to Dr. Rouquerol during the 17th North American Thermal Analysis Society Conference at Lake Buena Vista, Florida, October 9–12, 1988.