

30 CODATA / NEWSLETTER

October 1984

Resolutions and Decisions of the General Assembly

Jerusalem June 29-30, 1984



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NEW MEMBERS . . . unanimously accepted the People's Republic of China as a National Member of CODATA and welcomed both the Republic of South Africa and the International Union of Microbiological Sciences which had become Members since the last General Assembly.

REVISED CONSTITUTION . . . unanimously approved the revised version of the CODATA Constitution, subject to approval by the Executive Board of ICSU.

RESTRUCTURING . . . agreed to the restructuring of Committees, Task Groups, and Working Groups as proposed by the Executive Committee. In order to adhere more closely to the Scientific Union nomenclature, former Advisory Committees will be called Commissions, and their purpose will be to aid in the general planning, guidance, and criticism of the CODATA Task Groups and Working Groups. Task Groups and Working Groups will conduct specific short-term projects.

TASK & WORKING GROUPS . . . the following Task Groups (TG) and Working Groups (WG) were renewed for the period 1984-1986:

- TG Chemical Thermodynamic Tables
- TG Data for the Chemical Industry
- TG Fundamental Constants
- TG Critically Evaluated Phase Equilibrium Data
- TG Hybridoma Data Bank
- TG High Pressure Data
- WG Data for Surveillance of Active Volcanoes
- WG Multisatellite Thematic Mapping
- WG Coordination Protein Sequence Data Banks

. . . the following new Task Groups and Working Groups were established:

- TG Geothermodynamic Data
- TG Referral Data Base
- TG Microbial Strain Data Network
- WG Environmental Data Needs (new WG to replace Environmental Sciences Data Standards)

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The Committee on Data for Science and Technology (CODATA) was established in 1966 by the International Council of Scientific Unions.

Working on an interdisciplinary basis, CODATA seeks to improve the quality, reliability, processing, management, and accessibility of data of importance to science and technology.

JERUSALEM INTERNATIONAL CODATA CONFERENCE EXCELS

At least 256 scientists from 20 countries—Australia, Austria, Belgium, Canada, France, F.R.G., Italy, Japan, Malaysia, Netherlands, Norway, Poland, Portugal, Republic of South Africa, Spain, Sweden, Switzerland, United Kingdom, United States, and Israel—participated along with 57 members of their families June 24–28, 1984. Many of the participants were newcomers to CODATA conferences.

This ninth biennial Conference, held at the Israel Academy of Sciences and Humanities, was hosted by that organization and the Van Leer Foundation. The Israel National Committee for CODATA organized the Conference, assisted by the Scientific Program Committee consisting of ten representatives from various nations and disciplines, mostly Western bloc. The quality of the program was excellent and, although the temptation to take touristic advantage of this historically rich site was high, the sessions were generally well-attended.

The scientific program of the Conference was comprised of plenary lectures, symposia, and sessions. Virtually all 203 papers were of interdisciplinary interest. Symposia, involving 104 papers, dealt with specific, narrowly-defined, and well-framed numerical data topics, most within the conventional scientific subdisciplines. All symposia were formulated and organized by experts in various disciplines who recruited their own speakers, presided over them, and guided discussion. Symposia titles were: Statistical and Scientific Data Management; Numerical Data Retrieval in Science and Technology; Automatic Information Retrieval in the Sciences; Compilations in Elementary Particle Physics; Numerical Data for Energy Systems; . . . for Nuclear Energy; . . . for Energy Conversion Projects; Selection of Physio-

chemical Data of Actinide Compounds; Efforts and Progress in Evaluation and Compilation of Phase Diagrams; Phase Equilibria—Databanks and Process Calculations; Phase Equilibria—Correlations and Predictions; Industrially Oriented Process and Thermodynamic Data Projects; Role of Sequence Data in Immunoglobulin Diversity and Biosynthesis; Nucleic Acid and Protein Synthesis; Nucleic Acid and Protein Sequence Analysis and Evaluation; X-Ray Structure, Storage, and Retrieval and Correlation of Protein Nucleic Acid Structural Data; Towards a Human Protein Map; Data Needs for Genetic Engineering/Biotechnology; New Approaches to the Presentation of Oceanographic and Environmental Data; Data on Chemical Composition of Oceans; Atmosphere Modeling; Databases in Ecology and Systematics; and Management and Analysis of Numerical Data in Geochemical Exploration.

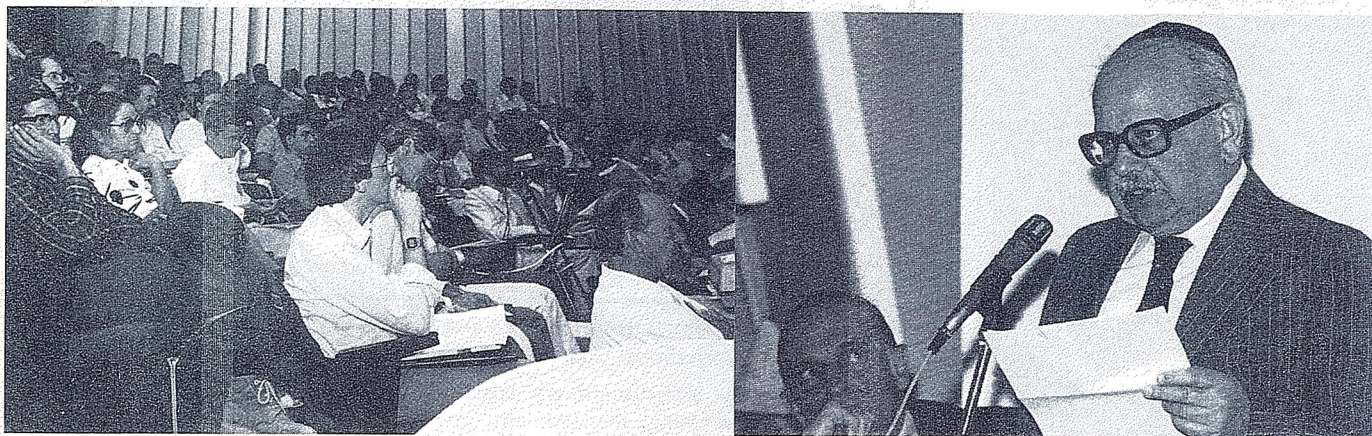
The 94 contributed papers were presented in six sessions: Methodology of Scientific Consolidation and Processing of Data (9 papers); Computerized Databases, Technology, and Management (28); Computer Techniques in Data and Systems Analysis (9); Numerical Information Systems in Materials Science, Technology, and Engineering (21); Numerical Information Processing in Biosciences (9); and Numerical Data Processing in Geosciences (18).

The conference papers thus are seen to reflect the broadened subject interests of the overall CODATA program. The number of papers on interdisciplinary subjects as well as on statistical methods, data handling, and computer methods showed an increase over the last conference. Several of the invited symposia and technical sessions were carried out in parallel sessions, and a poster session gave opportunity for interactive paper presentation methods.

The Conference occurs at a time when the role of CODATA in the coordination, management, and processing of numerical data programs and in the application of new technologies in data handling is in a period of transition. Although the various disciplines of the physical sciences retain their dominant interest in the numerical data field, awareness of the importance of numerical data has greatly expanded in several subdisciplines in the life, nutritional, environmental, oceanographic, atmospheric, and earth sciences. Symposia topics were selected to give a higher exposure to these new subdisciplines in the CODATA family which are in need of extra encouragement. These symposia clearly demonstrate that many important advances are being made in these areas. Moreover, they demonstrate that progress in the treatment of numerical data and in the management of databanks in these areas depends greatly on the developments in other—already well-established fields—such as chemistry and physics.

A large number of papers were given by participants from the Western countries, many from the United States. No Soviet representatives were present and a general absence of Eastern bloc representatives was felt. However, the conference did count five participants from Poland. Naturally, the conference provided good opportunity for inclusion of several papers from participants of the host country. In fact, A.S. Kertes, the Chairman of the Organizing Committee of the program, indicated that of the more than 250 participants, more than 25 % were Israeli scientists. At the previous conference in 1982 in Jachranka (Poland), the reverse was true. There was a near absence of U.S. participants and an absence of Israeli

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(left) The participants at the Conference's Opening Session in the Academy amphitheater. (right) Dr. E.E. Urbach, President, Israel Academy of Sciences and Humanities, provides greetings at the Opening Session. Professor Steven Kertes (Conference and Session Chairman, Israel, the Hebrew University of Jerusalem) is seated at left.



(left) Conference banqueters join with the Jerusalem Folklore Dance Ensemble in dancing the hora. (right) Professor Jacques Emile Dubois—right hand upraised—makes a point during discussion in one of the Conference's popular chemical thermodynamics sessions.

Database Producers' Code

A voluntary code of practice to cover the production of databases has been issued by Eusidic, the European Association of Information Services.

Dealing with selection policy, accuracy, and indexing of data, the code has no legal standing, but such codes have been widely agreed by international bodies to enable problems to be solved and to help online users.

In compiling the code, Eusidic consulted both its members and other representative bodies in the information industry worldwide. Other codes will follow related topics.

Further information may be had by contacting Helen Henderson, Eusidic, PO Box 429, London, U.K. W4 1IJJ.

In Touch with Poland

Short of foreign currency, Polish scientists have been finding it difficult to keep up with advances in the western world.

In areas such as medicine, all branches of engineering and applied science including electronics and computing, biotechnology and information technology, universities have suffered losses of up to 90 per cent of their journal subscriptions. In response, some western academics, such as Mr. Ronald Crawford, registrar of Glasgow's University of Strathclyde, have organized donations of journals to Polish colleagues.

According to Mr. Crawford, writing in *The Times*, online services have also helped. "The British Council in Warsaw is striving to help overcome part of the problem through its computer terminal access to Blaise, Lockheed Dialog, and Pergamon Infoline online information services," he writes.

Message from the President

The Ninth International CODATA Conference and the Fourteenth General Assembly held in Israel in late June 1984, marked a significant stage in the evolution of CODATA since its founding in 1966. Since the last conference held in Poland in 1982, a careful review of CODATA's activities has been conducted.

The Futures Conference held at La Gaillarde, France, in June 1983, evaluated CODATA's scientific program and identified activities for emphasis and strengthening and those which perhaps should be given new directions, cut back, or—alternatively—be referred to the appropriate Unions for action. CODATA must be capable of providing scientists with useful advice on current computer systems for data management. To do this, conferences and training courses are to remain at present levels. In addition, the Conference called for the greater involvement of talented young scientists. Even more importantly, CODATA must maintain and strengthen its interdisciplinary nature.

David Lide, Secretary General, summarized the Futures Conference for the General Assembly in creating criteria for accepting new proposals for scientific projects and for reorganizing CODATA operations into Commissions (for long term advisory functions), Task Groups (with clear objectives and an appropriate time frame for completion of the work), and Working Groups (authorized either by the General Assembly or the Executive Committee on a short term basis or with a view to assessing the need for establishing a Task Group). His proposal for restructuring was approved by the General Assembly and used as a framework for again assessing some of CODATA's current activities. The General Assembly agreed that the Committee for Industrial Data should continue to exist as a Commission and suggested that the Executive Committee investigate the transformation of the Task Groups on Accessibility and Dissemination of Data and Computerized Data Handling into Commissions and to recommend whether or not there is a need for the establishment of these and other discipline-oriented Commissions, i.e. Biosciences, Geosciences, Physics, Chemistry, etc., and other methodology-oriented Commissions, i.e. education.

Some of the conclusions of the La Gaillarde Conference were incorporated into the amended Constitution submitted to the General Assembly. A draft circulated to Delegates in late February of this year resulted in a number of useful, constructive comments which were used as a basis for focussing discussion at the General Assembly. Some substantive issues were resolved and a revised Constitution was approved. The new Constitution reflects more accurately the current mission of CODATA and expands the base for nominating Ordinary Members of the Executive Committee to include those who have served either on CODATA Task Groups or on National Committees. This should assist in bringing new blood into the organization. Meanwhile, continuity in the management of CODATA was safeguarded by specifying that nominations for Officers must come from among those who have

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President's Message

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previously served as Delegates or as Members of the Executive Committee. The Constitution now provides a set of guidelines not only to ensure the orderly conduct of the work of CODATA but, in addition, to foster the development of CODATA into a vibrant and vital force in international science and technology.

Through the extensive efforts of David Watson, Treasurer, and David Lide, Secretary General, CODATA's dues structure was reviewed and a new dues schedule adopted by the General Assembly.

It is also clear that the current proliferation of mini- and micro-computers in the scientific community gives CODATA the opportunity to play a useful role internationally (perhaps more specifically in certain developing countries) in identifying how these might be assessed in terms of both hardware and software and in determining their potential for use under different specified conditions.

The Ninth International CODATA Conference, organized by a scientific committee chaired by Dr. Steven Kertes of Israel, developed a strong interdisciplinary program including a number of significant disciplinary thrusts. The trend to higher quality papers continued, with a number of papers being of extremely high caliber. This conference spearheaded a number of initiatives which may lead to even better conferences in the future. For example, poster sessions and demonstrations were integral parts of the program, and it could well be that the "live" poster sessions will become a key component of future programs. Some of the most significant plenary lectures were prefaced by brilliant introductions which set the stage and outlined the nature of the work to be presented. This greatly assisted those who were not experts to understand and appreciate the research presented.

The excellent facilities at the National Academy of Sciences and Humanities of Israel with its beautiful and tranquil setting did much to foster informal discussion outside of the regular sessions. In addition, the diligence and determination of our Israeli hosts did much to foster the success of the Conference and the interaction and discussion among scientists that are vital to CODATA's goal of promoting interdisciplinary communications.

It is a pleasure to acknowledge the excellent support and guidance provided by Phyllis Glaeser and Sarah Levavasseur of the CODATA Secretariat—not only for the Conference and General Assembly—but also for CODATA's operations throughout the year.

Finally, I would like to express my gratitude to Edgar Westrum for his industrious and highly effective work in preparing the Newsletter. May I urge all of you to drop him a note on news items of potential interest.

General Assembly

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... the following Task Groups and Working Groups were not renewed:

- TG Biothermodynamic Data
- TG Gas Phase Chemical Kinetics
- TG Thermophysical Properties of Solids
- WG Environmental Sciences Data Standards

... renewed the Commission (formerly "Committee") on Industrial Data for the period 1982-84.

... asked the Executive Committee to investigate the transformation of the Task Groups on Accessibility & Dissemination of Data and Computerized Data Handling into Commissions and to recommend whether or not there is a need for the establishment of discipline-oriented Commissions, i.e. Biosciences, Geosciences, Physics, Chemistry, etc., and other methodology-oriented Commissions, i.e. education.

FISCAL POLICY ... adopted (after approval of the Treasurer's report) several resolutions regarding payment of dues, established a category model related to the ICSU scale, assigned subscription units, and voted to implement the scheme over a five-year period.

CHOSEN ... elected:

- A. Bylicki (Poland) to a Vice Presidency
- H. Behrens (F.R.G.), M. Carapezza (Italy), Y. Mashiko (Japan) to Executive Committee membership

... reelected:

- J.E. Dubois (France) to a Vice Presidency
- D.G. Watson to the Treasurer's post
- A.E. Bussard (IUIS), H. Haendler (IUNS), and E.F. Westrum, Jr. (IUPAC) to Executive Committee

Executive Committee '85

The 1985 meeting of the CODATA Executive Committee will be held February 6 and 7 at the CODATA Secretariat, Paris. Those planning to make proposals should advise either the Secretariat or the Secretary General, David R. Lide, Jr.



V.E. Hampel (U.S.A., Lawrence Livermore Laboratory) discusses GATEWAY program and demonstrates online system.

European Coal Database

A coal database including properties of various types of coal, liquefaction products, and properties of coal liquids is being produced by a collaboration of German, Belgian, British, and Dutch organizations supported by the EC.

It will eventually be loaded on FIZ Chemie.

More information may be obtained from Dechema, Th.-Heuss-Allee 25, D-6000 Frankfurt, F.R.G.

Conference

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participants while a relatively large fraction of conferees were from Eastern bloc countries.

The next meeting, to be hosted by the Canadians in Ottawa, 14-17 July 1986, will strive for a more balanced East-West representation. The theme chosen for this conference, "Computer Handling and Dissemination of Data", will continue to provide interdisciplinary, bio-, and geosciences with increasing coverage. The Program Chairman is C.B. Alcock, Department of Metallurgy and Materials Science, University of Toronto, Ontario, Canada.

Phase Equilibrium Workshop/Symposia

Paris, September 1985 ITODYS-CODATA-ICSU

Today's users of phase-equilibrium and related property data expect such data to be available from computerized, evaluated databases without having to retrieve and assess them from dispersed primary literature sources. This trend underlines the need for ensuring the reliability of phase-equilibrium data stored in databases, for establishing the best possible data correlation and prediction methodologies, and for homogenizing phase-equilibrium and related property database contents.

CODATA and IUPAC stimulate these activities by promoting international cooperation among interested parties, and their dedicated task forces have organized three consecutive, closely related meetings in Paris, France, 5-13 September 1985. They are intended to be thought-provoking rather than merely fact-reporting encounters on the measurement, correlation, prediction, computer handling, and dissemination of these data.

Details on the meetings are set forth below.

1. The Second International IUPAC Workshop on Vapor-Liquid Equilibria in 1-Alkanol and n-Alkane Mixtures, 5-7 September 1985

This will serve primarily as a forum for the presentation of principal investigators' endeavors and achievements within the international project of the same name. It will offer a practical embodiment of the ideas underlying the CODATA symposia on phase equilibria and databases, involving—for the two representative classes of organic substances—concrete examples produced within the framework of a truly international project. However, contributions from authors not directly involved in the project will be included in the program if they are germane.

2. The First CODATA Symposium on Chemical Thermodynamic and Thermophysical Properties Data Bases, 9-10 September 1985

Oral presentations, limited in number, will be enhanced by database, micro-computer, and online demonstrations and by bench/stand exhibits (to be continued throughout the three meetings). Here again, emphasis will be on panel discussions and also on the academic-industrial-commercial dialog. Descriptions of well-developed databases, general principles of database management and strategy systems, methods for improving the quality and reliability of database contents, standardized formats for interchange of information and similar topics are planned. Panel discussions will provide a free forum for delving deeply into the subjects suggested by the participants themselves. All chemical thermodynamic and thermophysical property databases, i.e. those covering property data not only for molecular (organic) but also for inorganic (metal, salt, ceramic, etc.) systems will be considered.

3. The Second CODATA Symposium on Critical Evaluation and Prediction of Phase Equilibria in Multicomponent Systems, 11-13 September 1985

Plenary lectures will summarize the current state of research and practice and will deal with subjects of general interest for organic as well as inorganic systems. Short contributions and posters are limited essentially to molecular (organic) systems. Contributions will be presented briefly by their authors during the sessions. Both oral and poster contributions will be grouped by subject matter and summarized by session rapporteurs who will highlight the major

problems involved and submit them as topics for general discussion.

The sessions have been organized by the Institut de Topologie et de Dynamique des Systèmes (ITODYS) (Université Paris VII, CNRS) under the sponsorship of IUPAC's Commission on Thermodynamics and Subcommittee on Thermodynamic Tables together with CODATA's Task Groups on Phase Equilibrium Data, on Chemical Thermodynamic Tables, on Property Data on High Pressure Phases, on Data for the Chemical Industry, and the Commission on Computer Use. An Advisory Committee chaired by Prof. J.E. Dubois and a Scientific Program Committee chaired by Dr. H.V. Kehiaian are responsible for the program.

To receive the Third Circular and preliminary registration form, please contact: Dr. Henry V. Kehiaian; Université Paris VII - CNRS; Institut de Topologie et de Dynamique des Systèmes; 1, rue Guy de la Brosse; 75005 Paris, FRANCE. Telephones: 33-1-707-11-65 or 336-25-25, ext. 60-53. Telex: 630553 F. Cable: ICSU PARIS 016.

Top Weatherwoman

Margaret Courain—a CODATA regular—does not just talk about the weather. She is doing something about it!

As Deputy Assistant Director for Information Services for the USA's National Oceanic and Atmospheric Administration she is involved in gathering vast amounts of weather information and stockpiling it for retrieval in many forms and formats.

"Passionately fond" of science but not a "laboratory-type", she has found since she started her job at NOAA in 1981 a gold mine of environmental data ranging from marine geology to solar glaciology—all to be homogenized into a coordinated, accessible system.



(left) I. Schechter (Israel, Weizmann Institute of Science) discusses germline diversification for protein sequence data session. (center) A.E. Bussard (France, Institut Pasteur), Session Chairman, delivers an introductory address for biosynthesis session. (right) M. Krichevsky (U.S.A., National Institutes of Health) awaits a question following his presentation.



(left) CODATA Executive Committee's "official" table. (left to right): David G. Watson (Cambridge, U.K., Treasurer), Mme. Phyllis Glaeser (Paris, Executive Secretary), W.W. Hutchison (Ottawa, President), David R. Lide, Jr. (Washington, Secretary General), Jacques E. Dubois (Paris, Vice President), Masao Kotani (Tokyo, Past President). (right) C.B. Alcock (Canada, University of Toronto) (standing left) makes a point regarding the presentation of R.E. Cohen (U.S.A., Rockwell International Science Center) (standing right).

New CODATA Publications

- **Computer Science and Data Banks.** Zdzisław Hippe and Jacques Emile Dubois, Editors.

Papers presented at the Eighth International CODATA Conference, Jachranka, Poland, 4-7 October 1982. (1984). Published for the Institute of Physical Chemistry and the Polish National CODATA Committee by the Polish Academy of Sciences, Warsaw.

- **Fundamental Physical Constants, Physicochemical Property and Phase Equilibrium Data.** Andrzej M. Szafranski and Jack H. Westbrook, Editors.

Papers presented at the Eighth International CODATA Conference, Jachranka, Poland, 4-7 October 1982. (1984). Published for the Institute of Physical Chemistry and the Polish National CODATA Committee by the Polish Academy of Sciences, Warsaw.

Books for the Bookshelf . . .

- **Solubility Data Series.** A.S. Kertes, Editor.^a
- **Alkaline Earth Metal Halates.** H. Miyamoto, M. Salomon, and H.L. Clever, Editors.^{a,b}
- **Alcohols with Water.** A.F.M. Barton, Editor.^{a,c}
- **Beta-Lactams.** E. Tomlinson and A. Regosz, Editors.^{a,d}
- **Handbook of Thermodynamic and Transport Properties of Alkali Metals.** R.W. Ohse, Editor.^e
- **International Thermodynamic Tables of the Fluid State 8: Chlorine (Tentative Tables).** S. Angus, B. Armstrong, K.M. de Reuck, Editors.^f
- **Vapor-Liquid Equilibrium Data Collection, Volume 1, DECHEMA Chemistry Data Series.** J. Gmehling, U. Onken, W. Arlt, P. Grenzheuser, U. Weidlich, and B. Kolbe.^g
 - **Aliphatic Hydrocarbons, Supplement 1 (Part 6c)**^{g,h}
 - **Halogen, Nitrogen, Sulfur and other Compounds (Part 8)**^{g,i}
- **Critical Data of Pure Chemical Compounds, Volume II, DECHEMA Chemistry Data Series.** K.H. Simmrock.^j
- **Heats of Mixing Data Collection, Volume III, DECHEMA Chemistry Data Series.** C. Christensen, J. Gmehling, P. Rasmussen, and U. Weidlich.^k
 - **Binary Systems (Part 1).**^{k,l}
 - **Binary and Multicomponent Systems (Part 2)**^{k,m}
- **Evaluated Vapor Pressures of Pure Organic Compounds, Volume IV, DECHEMA Chemistry Data Series.** M. Schönberg and S. Müller.ⁿ
- **Heat Capacities and Entropies of Organic Compounds in the Condensed Phase.** Eugene S. Domalski, William H. Evans, and Elizabeth D. Hearing.^o
- **The Chemical Thermodynamics of Actinide Elements and Compounds.** F.L. Oetting, Editor.^p
 - **Part 4: The Actinide Chalcogenides.** F. Grønvold, J. Drowart, E.F. Westrum, Jr.^{p,q}
 - **Part 6: The Actinide Carbides.** C.E. Holley, M.H. Rand, and E.K. Storms.^{p,r}
 - **Part 8: The Actinide Halides.** J. Fuger, V.B. Barker, W.N. Hubbard, and F.L. Oetting.^{p,s}
- **Thermodynamic Properties of Halides.** L.B. Pankratz.^t
- **Equilibrium Properties of Fluids and Fluid Mixtures.** Aleksander Kreglewski.^u
- **Some Data Processing in Earth Science.** J.J. Royer, Editor.^v
- **Cartographie Automatique des Champs Pluviométriques Exemple de la Région Algéroise.** J.J. Royer, Editor.^w
- **The Visual Display of Quantitative Information.** Edward R. Tufte.^x
- **Numeric Databases.** Ching-chih Chen and Peter Hernon, Editors.^y
- **Computerized Literature Searching: Research Strategies and Databases.** Charles L. Gilreath.^z
- **Libraries, Information Centres, and Databases in Science and Technology.**^{aa}
- **Scientific and Technical Books and Serials in Print 1984.**^{bb}
- **Industrial Research Laboratories of the United States.**^{cc}
- **Understanding Robust and Exploratory Data Analysis.** David C. Hoaglin, Frederick Mosteller, and John W. Tukey, Editors.^{dd}

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Books for the Bookshelf (continued from page 7)

- **The Computer Data and Data Source Book.** Matthew Lesko.^{ee}
- **Omni Online Database Directory.** Michael Edelhart and Owen Davies, Editors.^{ff}
- **An Online Directory of Databases for Material Properties.** Viktor E. Hampel, William A. Bollinder, Carol A. Gaynor, James J. Oldani.^{gg}
- **International Information Networks for Material Properties.** Viktor E. Hampel, Carol A. Gaynor, Bruce E. Hege-mann, Robert D. Sanner, Y. Wolman.^{hh}
- **Measurement Assurance Programs, Part I: General Introduction.** Brian Belanger.ⁱⁱ
- **Measurement Assurance Programs, Part II: Development and Implementation.** Carroll Croarkin.^{jj}
- **Scientific and Technical Information Transfer: Issues and Options.** K. Bikson, B.E. Quint, L.L. Johnson.^{kk}
- **Domestic Technology Transfer Versus Technology Export Control.** H.C. Race.^{ll}

* Further details on content, identification, price, source, etc. for above items (if available) are referenced below.

a. This series, which is established as the most authoritative and comprehensive reference work on solubility phenomena, will eventually cover all solid, liquid, and gaseous systems for which solubility data have been reported in the literature. Data are critically evaluated and particular attention is paid to purity of reagents and experimental techniques.

b. Volume 14. (1983). 352 pp. Hardbound. US \$100. ISBN 0-08-029212-7.

c. Volume 15. (1984). 485 pp. Hardbound. US \$100. Pergamon Press (UK), Headington Hill Hall, Oxford OX3 0BW, U.K.; (Americas) Fairview Park, Elmsford, NY 10523, U.S.A. ISBN 0-08-025276-1.

d. Volume 16/17. (Winter 84-85). 750 pp. Hardbound. US \$200. Pergamon Press (UK), Headington Hill Hall, Oxford OX3 0BW, U.K.; (Americas) Fairview Park, Elmsford, NY 10523, U.S.A. ISBN 0-08-029235-6.

e. Chemical Data Series, Volume 30. (Winter 84-85). 1500 pp. (2 volumes) Hardbound. US \$350. Pergamon Press (UK), Headington Hill Hall, Oxford OX3 0BW, U.K.; (Americas) Fairview Park, Elmsford, NY 10523, U.S.A. ISBN 0-08-0261760.

f. Chemical Data Series, Volume 31. The most recent volume in this important series of standard reference data on industrially important gases provides detailed tables of the thermodynamic properties of chlorine, using predictive methods to supplement reliable experimental data. Includes: experimental results, estimation of properties, correlating equations, the tentative tables, experimental results hitherto unpublished or inaccessible, references, ideal gas properties as functions of T. (1984). 168 pp. Hardbound. US \$60. Pergamon Press: (UK) Headington Hill Hall, Oxford OX3 0BW, U.K.; (Americas) Fairview Park, Elmsford, NY 10523, U.S.A. ISBN 0-08-030713-2.

g. For each system the best correlation method is used to show graphically the fit to experimental data. Activity coefficients at infinite dilution are also given. Thermodynamic consistency is tested by two methods. Recommended Wilson, NRTL, and UNIQUAC parameters are listed for those systems for which at least two data sets exist fulfilling the consistency tests. Vapor pressure constants (Antoine equation) for the pure compounds with their regions of validity are given.

h. (1984). 650 pp. DM 205. ISBN 3-921-567-51-3.

i. (1984). 600 pp. DM 198. ISBN 3-921-567-24-6.

j. Three parts. In preparation (1984).

k. This two-part volume contains a comprehensive collection of heats of mixing data (H^E) for more than 3000 binary and ternary mixtures.

l. (1984). 800 pp. DM 490 (includes part 2). ISBN 3-921-567-49-1.

m. (1984). 800 pp. DM 490 (includes part 1). ISBN 3-921-567-50-5.

n. In preparation.

o. Published as Supplement 1 to Volume 13 of the *Journal of Physical and Chemical Reference Data*, this single volume includes data for approximately 1400 organic compounds in the liquid and solid phases. More than 800 references from significant articles published between 1925 and 1982 have been examined and evaluated to provide the information for this compilation. The data provided for each compound in the tabulation include a rating which indicates the estimated overall quality of the reported data, and, where available, phase transition data. (1984). 308 pp. Hardbound. US \$40. American Chemical Society, Distribution Office, Dept. 580, 1155 16th St., N.W., Washington, DC 20036.

p. The text gives the thermodynamic characterization in the low- and high-temperature regions as well as the properties of the gaseous state and the vaporization behavior. For most actinide materials, thermodynamic data over the complete temperature range are also included in tabular form. The material is compiled by authors from widely separated institutions and laboratories who are experts in the field of thermodynamic experimentation and analysis. International Atomic Energy Agency, Wagramerstrasse 5, P.O. Box 100, A-1400 Vienna, Austria. (US) UNIPUB, P.O. Box 433, Murray Hill Station, New York, NY 10157.

q. Contents: thorium chalcogenides; thorium chalcogenides; protactinium chalcogenides; uranium chalcogenides; neptunium chalcogenides; plutonium chalcogenides; transplutonium chalcogenides; thermodynamic properties of the chalcogens; physical properties of the actinide chalcogenides; heat-capacity contributions from a population of excited electronic states in the actinides; tables of thermodynamic functions. (1984). 16 by 24 cm. 265 pp. Paperbound.

Austrian Schillings 230. Publisher: see p above. ISBN 92-0-149084-4.

r. Contents: thorium-carbon system; protactinium-carbon system; uranium-carbon system; neptunium-carbon system; plutonium-carbon system; americium-carbon system; tables of thermodynamic functions. (1984). 16 by 24 cm. 101 pp. Paperbound. Austrian Schillings 230. Publisher: see p above. ISBN 92-0-149184-0.

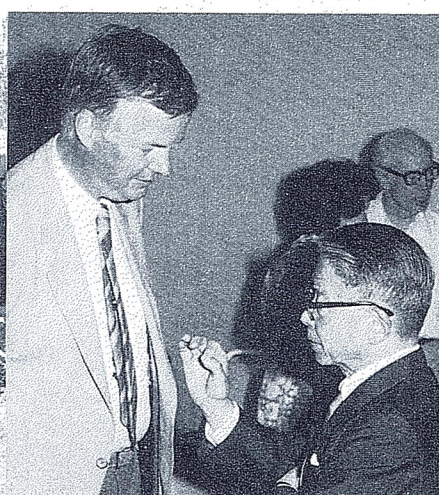
s. Contents: actinium; thorium; protactinium; uranium; neptunium; plutonium; americium; curium; tables of thermodynamic properties. English. (1983). 16 by 24 cm. 267 pp. Paperbound. Austrian Schillings 560. Publisher: see p above. ISBN 92-0-149183-2.

t. Bureau of Mines Bulletin 674. Thermodynamic data on the halides were reviewed, evaluated, and compiled at the Bureau of Mines Albany Research Center. Values for thermodynamic properties are given in tabular form and expressed algebraically. (1984). 810 pp. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. LC 83-600393.

u. Texas Engineering Experiment Station (TEES) Monograph Series. This book provides information on how the Helmholtz free energy or the equations of state of real fluids are related to all kinds of intermolecular energy in nonelectrolytes, the repulsion between hard convex bodies, and the intermolecular attraction including complex electrostatic interactions. Numerous examples elucidate the problems of phase equilibria calculations up to very high pressures. Various approaches to the calculations of the properties of mixtures with complex interactions are critically reviewed as are problems of separation of mixtures forming azeotropes. 6 x 9 in. 280 pp. US \$32.50. Texas A&M University Press, Drawer C, College Station, TX 77843-4354. ISBN 0-89096-183-2. LC 83-40493.

v. Includes papers on: evaluation of uranium potential of some granite intrusions in Southern China using fuzzy set methods, non-linear programming applied to log analysis, and closed data array and correspondence analysis in geology. (1983). 83 pp. FF 85. In English.

w. (1983). 292 pp. with 98 figures and 15 color maps. FF 195. In French.



(left) French conferees mix lunch and science on the rocks against a bed of lavender in the Academy garden. (center) M. Kotani (Japan, Past President) emphasizes an aspect of constitutionality to H. Behrens (F.R.G., Fachinformationszentrum). E.L. Brady (U.S.A., National Bureau of Standards) in the background. (right) J. Crease (U.K., Institute of Oceanographic Sciences), J.B. Rose (Paris, Unesco), and other guests sample culinary output of Academy.

Actinide Sourcebook

A specialized actinide data assessment and compilation project, entitled Actinide Sourcebook, is underway. The Sourcebook will be modeled after the CRC Handbook of Chemistry and Physics and will primarily contain tables of data with a minimum amount of text. The purpose of the project is to summarize selected data from primary and tertiary literature sources into a single source document—one volume of loose-leaf format to facilitate periodic updating—which tabulates in a highly compact and organized fashion the important physical and chemical properties of actinide metals, compounds, and complexes. The book will provide scientists and engineers a convenient and readily accessible source of tabulated and critically evaluated information.

Prominent actinide scientists throughout the world will be requested to prepare one or more sets of data tables which relate to their particular interests and expert knowledge. These scientists will critically evaluate physical and chemical properties in those cases where more than one value has been reported.

The Actinide Sourcebook will be published by Litarvan Literature, Denver, Colorado, USA, in 1986.

Bookshelf footnotes

(continued from page 7)

- x. This book is intended for those using visual methods to transmit information, but the lively and interesting text makes it also enjoyable to those who fully appreciate graphic design as an important art form. Edward Tufte is professor of political science and statistics at Yale University where he also teaches in the Department of Graphic Design. (1983). US \$34. Graphics Press, Cheshire, Conn., U.S.A.
- y. Includes information on database management and information storage and retrieval. (1984). US \$29.95. Ablex Publishing Corp., 355 Chestnut St., Norwood, N.J. 07648, U.S.A. ISBN 0-89391-247-6.
- z. Mr. Gilreath describes the principles underlying online bibliographic systems, the databases available, and the factors a researcher must consider in using them. He explores in some depth the relationship of the structure and terminology of publications in various fields to the literature searching process and provides detailed guidelines for research in the life, health, agricultural, and social sciences, chemistry, physics, mathematics, geology, meteorology, engineering, education, psychology, business, law, current affairs, and the humanities. 180 pp. Hardcover. US \$28.50. Bowker Publishing Co., 58-62 High Street, Epping, Essex CM16 4BU, U.K. ISBN 0-86531-526-4.
- aa. (1984). 450 pp. DM 160. K.G. Saur Verlag KG, Postfach 711009, 8000 Munich 71, F.R.G. ISBN 3-598-10533-9.
- bb. (1984). 11 x 8 1/2 in. 3 volumes. 3700 pp. US \$143. ISBN 0-8352-1649-7.
- cc. Eighteenth edition. (1984). 11 x 8 1/2 in. 762 pp. US \$169. ISBN 0-08352-1744-2.
- dd. Robust fitting leads to the highlighting of outliers; data points which need a closer look, since they may be erroneous or may reflect major physically interpretable departures from the model. This highlighting, as well as the detection of gross lack of fit of the model, is achieved through a variety of graphical techniques. This book is intended to illustrate some new fitting and graphical techniques and to explain their connections with conventional techniques and classical methodology. (1983). 447 pp. US \$37.95. Wiley.
- ee. Covers government, public, educational and more than 1000 commercial databases. (1984). 897 pp. Also on line (ASIS). US \$14.95. Avon #86942, Avon Books, Dept. FD, 1790 Broadway, New York, NY 10019. ISBN 0-380-86942x.
- ff. Compiled is information on 1000 databases covering 50 fields. (1983). 311 pp. (Also in hardcover). US \$10.95. Collier Books, 866 Third Avenue, New York, NY 10022. ISBN 0-02-0279910-1.
- gg. (1984) UCRL-90276. Technical Information Department, Lawrence Livermore National Laboratory, University of California, Livermore, CA 94550.
- hh. (1984). UCRL-90942. Rev. 1. Technical Information Department, Lawrence Livermore National Laboratory, University of California, Livermore, CA 94550.
- ii. This is an introduction to the use of the Measurement Assurance Program (MAP) Services which focus on the quality of measurements being made by the participant rather than the properties of his instruments or standards. The first part of this guide gives illustrations of proven approaches to measurement control to assist the reader in constructing or upgrading an internal quality control program. In general the services are designed to help a laboratory quantify the uncertainty of its measurements relative to national standards. (1984). 71 pp. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. LC 84-601030.
- jj. Part II of this series is concerned with the development and implementation of Measurement Assurance Programs (MAPs). Particular emphasis is placed on principles for statistical analysis and interpretation of MAP data, including characterization of measurement errors, use of control charts, and specific examples of MAPs in process. (1984). 124 pp. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. LC 84-601030.
- kk. This report considers how to more effectively transfer to potential users the knowledge produced by federally funded research in science and technology. Two main problems are identified: the inadequacy of mechanisms to help the user assess the quality of available information and the impairment of retrieval of relevant information in forms useful for application because actual usage behavior is not adequately taken into account. Both points lead to the conclusion that a need exists for more interactive, user-guided information transfer. A review of studies including policy papers is given. A number of options for improvements are presented. (1984). 111 pages. Rand, 1700 Main St., Santa Monica, CA 90406.
- ll. Subtitled The Emerging National Policies and the Role of the Bench Engineer. The report reviews the issues and criteria involved in attempting to maintain a system in which the flow of information is acceptably achieved without loss of information relevant to national security. (1984). 69 pp. GACIAC/ITT Research Institute, 10 West 35th Street, Chicago, IL 60616.

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