

New Books and Publications

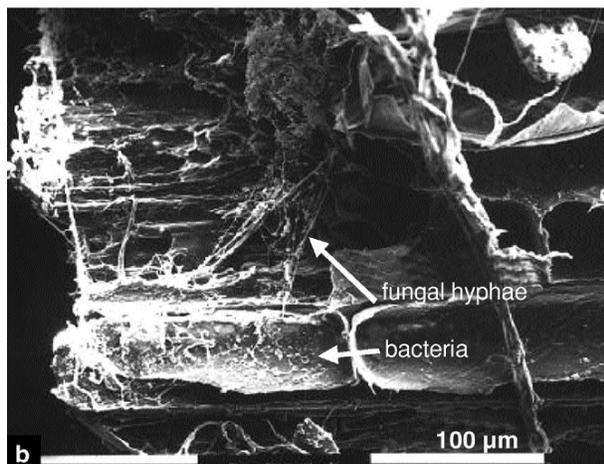
Interactions Between Soil Particles and Microorganisms: Impact on the Terrestrial Ecosystem

P. M. Huang, J. M. Bollag, and N. Senesi
Series on Analytical and Physical Chemistry of Environmental Systems, Vol. 8
John Wiley & Sons, New York, 2002
(ISBN 0-471-60790-8)

The three major (solid) components of soil—minerals, organic components, and microorganisms—together profoundly affect the physicochemical and biological properties of terrestrial systems. To date, there have been major scientific accomplishments in individual sub-disciplines (i.e., in the chemistry of soil minerals, the chemistry of soil organic matter, and soil microbiology). However, minerals, organic matter, and microorganisms should not be considered as separate entities but rather as a united system, with the components constantly in close association and interaction with each other in the terrestrial environment. These interactions have an enormous impact on terrestrial processes critical to environmental quality and ecosystem health around the globe. *Interactions Between Soil Particles and Microorganisms* provides the scientific community with a critical evaluation of state-of-the-art research on the subject matter, with the goal of advancing the understanding of reaction and processes at the interface between chemistry and biology of soil and related environments.

Key features:

- The first book to provide a comprehensive review of current research into the interactions of minerals,



Electron microscopy of bacteria and fungi attached to wheat straw surfaces; C. Chenu and Recous, from chapter one.

organic components, and microorganisms in the soil, at molecular and microscopic levels

- Defines the impact that these interactions have on environmental quality and ecosystem health
- Provides a unique insight into the effects of mineral-organic component-microorganism interaction on pollutants in the soil
- Provides a stimulus for further research into the dynamics and mechanisms of environmental processes in nature

This volume will be an essential reference for chemists and biologists studying environmental systems, as well as for earth and soil scientists, environmental geologists, and environmental engineers. It will also serve as a useful reference for professionals/consultants in microbiology and ecology.

 www.iupac.org/publications/books/author/huang02.html

Non-Conventional Polymer Dispersions

I. Capek, Symposium Editor
Macromolecular Symposium, Vol. 179, Wiley-VCH, 2002, pp. 1-358
(ISBN 3-527-30469-x)

The 15th Bratislava International Committee on Polymers, Non-Conventional Polymer Dispersions, held 25-28 June 2001 in Smolenice, Slovakia continued the series of Bratislava meetings organized by the Polymer Institute of the Slovak Academy of Sciences (SAS). The Symposium was sponsored by IUPAC and supported by the Slovak Grand Agency of SAS and participants themselves. The meeting took place at the fairy-tale-like castle of Smolenice located about 65 km north of the Slovakian capital, Bratislava.

The main topics of the Symposium included.

- Microemulsion, miniemulsion, and multiple emulsion polymerizations
- Association and polymerization behavior of amphiphilic macromonomers, graft copolymers, and macroinitiators in polar media
- Novel and non-conventional polymer products and polymer dispersions, prepared by radical polymerization

The Symposium included invited plenary lectures, contributed lectures and poster presentations. This meeting was an international one: lectures and posters

were presented in English by scientists from the Czech Republic, France, Germany, Hungary, Italy, Japan, Russia, Turkey, Taiwan, and Slovakia. The plenary and contributed lectures were presented by eminent scientist and by well-known active researchers of younger generations. The Symposium featured a dynamic poster section which included presentations by many participants, especially young scientists, and was accompanied by very lively discussions. A short account on the materials presented at the Symposium was published in the *Book of Abstracts*. Regrettably, this volume does not cover all the new and interesting results presented at the Symposium since not all the authors were able to present their lectures for publication in this volume (some of the material had been published earlier or submitted elsewhere). However, it provides a good representation of the scope of the meeting and the main topics of the discussion.

The symposium focused on current developments in the radical polymerization in the micellar media and synthesis of novel (surface-active) polymer products. It attracted an excellent attendance, reflecting the strong and wide-spread interest in the field of preparation of non-conventional polymer dispersions and stimulated mutual interactions between researchers working on similar display technologies. Both an interesting venue of the conference and well-organized scientific and social program added to the success of the event as quoted by participants.

This brief review of the materials of the Symposium including those presented in this volume shows that the main interest in the investigation of the preparation of non-traditional polymer dispersions and polymer products lies in the nature of the reaction loci, particle nucleation, and particle-growth events.

 www.iupac.org/publications/macro/2002/179_preface.html

Solubility of Ethyne in Liquids

Peter G. T. Fogg, Sim-wan Annie Bligh, M. Elizabeth Derrick, Yuri P. Yampol'skii, H. Lawrence Clever, Adam Skrzecz, and Colin L. Young
IUPAC-NIST Solubility Data Series. 76.

Journal of Physical and Chemical Reference Data, Vol. 30, No. 6, pp. 1693-1875, 2001

Ethyne was probably first made in the laboratory by Edmund Davy in 1836. It was rediscovered nearly a quarter of a century later by Berthelot who gave it the name acetylene. Since that time ethyne has become a cheap raw material for the synthesis of organic materials and an important industrial fuel. A summary of the available solubility data for ethyne was published by Miller in 1965 [S. A. Miller, *Acetylene—Its Properties, Manufacture, and Uses* (Academic, New York, 1965), Vol. I]. Many

more data are now available in a wide range of research papers and patent applications. These data vary in their reliability. In this work, the data for systems included in Miller's book have been reassessed and complemented by data published more recently. Literature has been surveyed to 1999. Data for a system may be unreliable unless two or more groups of workers have published values in close agreement. Where possible, values of the mole fraction solubility at a partial pressure of 101.3 kPa have been tabulated. Equations have been given for the variation of mole fraction with temperature in cases in which values over a temperature range are available. The greater the number of independent sources of the data, the greater the reliability of the utility of the resulting equation. Extrapolation of such equations beyond the temperature range of experimental measurements can lead to errors. In many of the systems it may be assumed that approximate values of the mole fraction solubility, x_1 , at a partial pressure of 101.3 kPa may be obtained by linear extrapolation of values for lower partial pressures, p_1 , on the assumption that x_1/p_1 is approximately constant. However, a similar linear extrapolation of solubilities at pressures appreciably higher than 101.3 kPa to give mole fraction solubilities at 101.3 kPa can lead to gross errors. For the purpose of evaluation of data, use has been made of the Krichevsky—Il'inskaya equation to obtain approximate values of solubilities at 101.3 kPa from measurements at higher pressures. These values were then compared with measurements made at or near to 101.3 kPa.

 www.iupac.org/publications/sds/2001/76_abstract.html

IUPAC Handbook 2002-2003

IUPAC (2002), pp. viii + 1-360.
(ISBN 0-9678550-3-9), USD 25.00

The new edition of the *IUPAC Handbook*, available for sale now from the Secretariat and also posted on the IUPAC Web site at www.iupac.org, contains updated listings and information on all aspects of IUPAC's organization. Included in the new *Handbook* are current listings of organization and membership for all IUPAC Divisions, Commissions, and Committees. Also included are recently revised lists of IUPAC National Adhering Organizations, Associate National Adhering Organizations, IUPAC Officers, and Projects. The *Handbook's* appendixes list recently published IUPAC reports and IUPAC-sponsored symposia and conferences, describe procedures for publication of IUPAC technical reports and recommendations, provide guidelines for drafting IUPAC technical reports and recommendations, and outline IUPAC copyright policies.

 www.iupac.org/handbook.html