

Advances in Fermentation Recovery Process Technology

First Engineering Foundation Conference

Co-chairs

Harvey W. Blanch, University of California at Berkeley, USA

Arnold Kaufman, Merck, Sharp & Dohme, USA

Alan S. Michaels, Stanford University, USA

Honorary Co-chair

Günther Schmidt-Kastner, Bayer AG, Germany

Banff Springs Hotel, Banff, Alberta, Canada

7-12 June, 1981

Monday, 8 June

Advances in Liquid/Solid Separations

Session chairs

Thomas E. Molnar, Merck Sharp & Dohme, USA

Joseph D. Henry, Jr., West Virginia University, USA

Sirofloc - A Novel Solid/Liquid Separation Technique

A.J. Priestley, C.S.I.R.O., Australia

Cross-Flow Lamellar Settlers for Microbial Cells

H.R. Bungay and M. P. Millspaugh, Rensselaer

Polytechnic Institute, USA

Whole Broth Extraction

J.:M. West and A. Patterson, Jr., Hoffmann-La Roche,

USA

The Design of Precipitation Systems for the Recovery of Proteins by Centrifugal Sedimentation

D.J. Bell, M. Hoare and P. Dunnill, University College

London, UK

Recovery of Intracellular Products

Session chairs

Malcolm D. Lilly, University College London, UK

Walther E. Goldstein, Miles Laboratories., Inc., USA

Experience with an Industrial Twenty-Two Liter Ball Mill for Disintegration of Bacteria.

M.-R. Kula and H. Schutte, Gesellschaft für

Biotechnologische Forschung, Germany

Use of Temperature-Sensitive Mutants for Cell Lysis and Release of Protein

A.J. Sinskey, Massachusetts Institute of Technology,

USA

Lytic Enzymes for the Disruption of Whole Yeast Cells

J. A. Asenjo, University of Chile, Chile

Tuesday, 9 June

Recovery and Isolation of Products from Fermentation Broths

Session chairs

Charles L. Cooney, Massachusetts Institute of Technology, USA

Irving Holzberg, Ortho Diagnostics, Inc., USA

Recovery Technology: Perspectives and Potential Progress

P. A. Belter, The Upjohn Company, USA

Large Scale Protein Purification by Isoelectric Focusing

M. Bier, University of Arizona, USA

Pressure-Driven Membrane Processes in the Separation and Purification of Bioactive Compounds from Fermentation Broth

Enrico Drioli, Universita di Napoli, Italy

Organic Acid Recovery with Coupled Transport Membranes

B.R. Smith, C.S.I.R.O., Australia

Recovery and Isolation of Products from Fermentation Broths

C.L. Cooney, Massachusetts Institute of Technology, USA

I. Holzberg, Ortho Diagnostics, Inc., USA

Complexing Extractions for Recovery and Separation of Polar Organics

C. J. King, University of California, USA

Heparin-Sepharose Affinity Chromatography for Isolation of Human Antithrombin III

G. Mitra, Cutter Laboratories, USA

Purification of Injectable Polypeptides from Genetically Engineered E. Coli

M. J. Ross, Genentech, Inc., USA

Studies of Polysaccharides as Selective Absorbents of Water in the Presence of Alcohol

M. R. Ladisch and J. Hong, Purdue University, USA

Wednesday, 10 June

Production of Vaccines: Product Isolation and Purification

Session chair

John B. Robbins, U.S. Food and Drug Administration, USA

Large Scale Production of Inactivated Poliomyelitis Vaccine

A.L. van Wezel, Rijks Institute Voor de Volksgezondheid, The Netherlands

Relationship between the Physical/Chemical Properties of Bacterial Attachment Proteins and Methods for their Isolation

C. Brinton, University of Pittsburgh, USA

Isolation of Gram Negative Cell Envelope Antigens by Selective Precipitation with Cetavlon

P. Anderson, The University of Rochester Medical Center, USA

Designing Recovery Processes for Aseptic or Biohazard Conditions: A Panel Discussion

Session chair and moderator

Robert W. McKinney, National Institutes of Health, USA

Basic Practices and Procedures for Hazardous Biological Operations - Regulatory Compliance Aspects

R.W. McKinney, National Institute of Health, USA

Facilities and Equipment Design for Safe Conduct of Operations Involving Biological Products

G. B. Achorn, National Institutes of Health, USA

Practices and Procedures for Assessing Safety-Monitoring Equipment in Biological Operations

M. A. Chatigny, Naval Biosciences Laboratory, USA

Design and Operation of Safe and Aseptic Recovery Processes for Biological Products

J.F. Lemp, Jr., Electro-Nucleonics Laboratories, Inc., USA

Thursday, 11 June

Recovery or Removal of Chemicals from Waste Streams and Natural Sources by Fermentation Methods

Session chairs

Bernhard J. Ralph, University of New South Wales, Australia

Simon E. Shumate, II, Oak Ridge National Laboratory, USA

Microbial Concentration of Metals

D.P. Kelly, University of Warwick, UK

Accumulation of Heavy Metals in Unicellular Algae

C. Fryer, D. Khummongkol, G. S. Canterford, Monash University, Australia

Removal of Uranium and Molybdenum from Uranium Waste Waters

C. L. Brierley, K. T. Dreher, J. A. Brierley, New Mexico Institute of Mining and Technology, USA

Separation and Recovery of Uranium using Microbial Cells

S.E. Shumate, II, G. W. Strandberg, T. Donaldson, Oak Ridge National Laboratory, USA

Plenary Lectures

Recovery of Intracellular Products

M. D. Lilly, University College London, UK

A Multilateral Approach to Recycle in Microbiological Processes

G. Hamer, Swiss Federal Institute for Water Research and Water Pollution Control, Switzerland

Friday, 12 June

Recovery, Reprocessing, and Re-use of Fermentation Process Streams

Session chairs

Bex Khosovi, Cetus Corporation, USA

Paul L. Stavenger, Dorr-Oliver, Inc., USA

Efficient Use of Water in a Single Cell Protein Plant

R.H. Scott, Imperial Chemical Industries, Ltd., UK

High Productivity Ethanol Fermentations using Continuous Cell Recycle

P. L. Rogers, University of New South Wales, Australia

Water Recycle in Extractive Fermentation

T.K. Murphy, C. R. Wilke and H. W. Blanch, University of California, Berkeley, USA

Effect of Recycling Distillers' Solubles on Alcohol and Feed Products Production from Grain Fermentation

J. S. Wall, R. J. Bothast, A. A. Logoda and K. R. Sexon, U.S. Department of Agriculture, USA

Poster Session

Session chairs

Stephen W. Drew, Merck Sharp & Dohme, USA

Elmer L. Gaden, University of Virginia, USA

Transformation Recrystallization Method for Purification of L-Glutamic Acid

Miyoji Dazai, Ajinomoto Co., Inc., Japan

Production and Purification of Interferon from Human Leukocytes/Sendai Virus using Filtration Technology

R. van Reis, J. Kern, J. Franke, L. I. Friedman and R. R. Stromberg, American Red Cross Blood Services, USA

Magnetic Separation of Enzymes, Cells, and Broken Cell Walls

Dudley F. Gibbs, International Research & Development Co., UK

Protein and Antibiotic Precipitation by Organic Agents

D. J. Kirwan, J. Higgs and B. Woodhouse, University of Virginia, USA

Scale-Up of Fumarase Isolation by Partition

H. Hustedt, K. H. Kroner and M. -R. Kula, Gesellschaft für Biotechnologische Forschung mbH, Germany

Membrane Technology in Bioconversion of Cellulose to Ethanol

M. López-Leiva, B. Hägerdal and B. Mattiasson, University of Lund, Sweden

Production of Concentrated Cultures Using a Fed-Batch Microfiltration-Fermentation System

Gerald D. Marcer, Miles Laboratories, Inc., USA

Electrokinetic Technique for Protein Recovery from Food Industry Residues

Maria Norberta de Pinho and Ana Maria Brites, Instituto Superior Técnico, Portugal

Conversion of D-Xylose to Ethanol by the Yeast *Pachysolen tannophilus*

P. J. Slinger, R. J. Bothast, J. E. Van Cauwenberge and C. P. Kurtzman, U.S. Department of Agriculture, USA

Concentration Polarization in Protein Ultrafiltration: BSA Concentration Profile Measurements with an Optical Shadow Graph Technique

Clark K. Colton, Vincent L. Vilker, and Kenneth A Smith, Massachusetts Institute of Technology, USA

Immunoabsorbent Purification of Human Somatostatin from *E. Coli*

B.A. Solomon, A. M. Pitt and R. L. Duffy, Amicon Corporation, and J. G. Stramando, Genetech Corporation, USA

Grain-Based Adsorption for Dehydration of Fermentation Alcohol

G. H. Robertson and E. E. Pavlath, U.S. Department of Agriculture, USA

Isolation of the Plant Growth Regulator, L-2-Amino-4-(2-Aminoethoxy)-Trans-But-3-Enoic Acid, by Displacement Ion Exchange Chromatography

James P. Scannell, Hoffman-La Roche, Inc., USA

Purification of Cholesterol Oxidase by Affinity Chromatography

Seigo Takasawa, Yoshiharu Yokoo and Sadao Noguchi, Kyowa Hakko Kogyo Co., Ltd., Japan

Ion-Pair Extraction of Microbial Metabolites

Michael S. Verrall, Beecham Pharmaceuticals, England

Cell Disruption Energetics

Campbell W. Robinson and Cady R. Engler, University of Waterloo, Canada

Ethanol Fermentation—Improved Performance Utilising Flocculation to Achieve Organism Separation

S. Evans and P. F. Greenfield, University of Queensland, Australia

