This volume contains the Programme Schedule, lecture documentation, papers and Abstracts for

PNEUMATECH I

International Conference on

PNEUMATIC CONVEYING TECHNOLOGY

held
3—5 May 1982
STRATFORD-UPON-AVON HILTON

(Where unsuitable for reproduction, certain figures and illustrations have been omitted. All such material will, however, be clearly shown by way of slides etc. during the oral presentations).

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London, England 1982

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Programme preparation by
THAMES POLYTECHNIC
BULK SOLIDS HANDLING UNIT

Organised by the
POWDER ADVISORY CENTRE

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MONDAY, 3RD MAY

Opening Address
Dr. J.G. Waller, Director of University Co-ordination,
British Technology Group

Session 1 (10.30 - 12.30)

FEEDING PNEUMATIC CONVEYING PIPELINES

Chairman's Introduction
Chairman: G. Pinder, Managing Director, Mucon Engineering Ltd., UK

"Aerodynamic Calculation of Gas/Solid Injectors," M. Bohnet,
University of Braunschweig, West Germany

"A Procedure for Estimating the Feed Rate of Rotary Valves," A.R. Reed,
J.S. Mason, Thames Polytechnic, London, UK

"An Investigation into the Flow Behaviour in the Entrainment Section of a
Rotary Valve Fed Pneumatic Conveying System," S.R. Kessel, A.R. Reed,
J.S. Mason, Thames Polytechnic, London, UK

Session 2 (14.00 - 17.00)

TECHNOLOGY OF HIGH PRESSURE PNEUMATIC CONVEYING SYSTEMS

Chairman's Introduction
Chairman: A.S. Goldberg, Director, Powder Advisory Centre, London, UK

"The Influence of Velocity, Pressure and Line Length on the Performance
of a Blow Vessel," R.D. Marcus, P. Lohrmann, University of the Witwatersrand,
Johannesburg, South Africa

"An Investigation into Two Modes of Slugging in Dense Phase Horizontal
Pneumatic Conveying," R.J. Hitt, A.R. Reed, J.S. Mason, Thames Polytechnic,
London, UK

"Pneumatic Transport of Cement by Means of Large Blow Tanks," P.G. Leversen,
Norwegian Talc, Bergen, Norway
Session 2 (continued ....)


"Low Velocity Pneumatic Conveyors - Definitions and Applications," W. Flatt, P. Blumer, Buhler Bros. Ltd., Uzwil, Switzerland

FILM SESSION

(20.30 - 21.30 approx.)

This will be an informal Session with a number of films illustrating examples of up-to-date Technology and developments.

TUESDAY, 4TH MAY

Session 3

(09.00 - 10.30)

PNEUMATIC CONVEYING IN THE AGRICULTURAL INDUSTRY

Chairman's Introduction
Chairman: Professor R.D. Marcus, University of the Witwatersrand, Johannesburg, South Africa

"Pneumatic Conveying in Agriculture," B. Clarke, National College of Agricultural Engineering, Silsoe, UK

"Experimental Investigation of Pneumatic Unloading of Grain Material in Flat Bottom Silos," Z. Bukurov, B. Ljubicic, University of Novi Sad, Yugoslavia

"Pneumatic Conveying of Fish," R.B. Stacey, Mucon Engineering Ltd., Basingstoke, UK

Session 4

(11.00 - 12.30)

FUNDAMENTAL STUDIES I

Chairman's Introduction
Chairman: Professor Y. Tsuji, University of Osaka, Japan


"A New Look at the Parameters Influencing a Dilute Phase Pneumatic Conveying System," G. Fenderico, University of the Witwatersrand, South Africa

"Criteria for Choking Phenomena in Vertical Pneumatic Transport Lines," W.C. Yang, Westinghouse Electric Corporation, Pittsburgh, PA, USA
Session 5  (14.00 - 17.00)

FUNDAMENTAL STUDIES II

Chairman's Introduction
Chairman: Dr. J.S. Mason, Thames Polytechnic, London, UK

"A Comparison of Horizontal and Vertical Pneumatic Conveying Systems Considering Optimal Conditions," F. Rizk, BASF, Ludwigshafen, West Germany

"Prediction of Pressure Drop and Optimal Design of Dilute Phase Pneumatic Conveying Systems," Y. Tsuji, University of Osaka, Japan

"Prediction of Pressure Drop with Pneumatic Conveying of Solids in Horizontal Pipes," K.E. Wirth, O. Molerus, University of Erlangen, West Germany

"Performance Characteristics of a Vertical Pneumatic Conveyor with a Fluidised Bed the Mixing Zone," S. Sikmanovic, B. Grubor, Boris Kidrich Institute, Belgrade, Yugoslavia

CONFERENCE DINNER

19.30 - 20.00 Cocktail Reception
followed by informal Conference Dinner at 20.00.

WEDNESDAY, 5TH MAY

Session 6  (09.00 - 12.30)

Chairman's Introduction
Chairman: Dr. A.R. Reed, Thames Polytechnic, London, UK

"Operational Assessment of Pneumatic Pipeline Mineral Transportation Systems," J. Firstbrook, National Coal Board, Burton-on-Trent, UK

"The Application of Pneumatic Conveying in the Mining Industry with Special Reference to Large Particle Conveying," R.D. Marcus, University of the Witwatersrand, Johannesburg, South Africa

"Concepts and Results of Pneumatic Conveying of Building Materials in German Underground Mining," H.J. Curten, KBI GmbH, Hunxe-Becholtwelmen, West Germany

"Development of a Pneumatic-Suction Coal Conveying System for Boiler Houses," C. Foster, National Coal Board, Stoke Orchard, UK

"A New Pulverized Coal Injection System for Blast Furnaces," Y. Shinozaki et al, Kawasaki Steel Corporation, and T. Moriyama et al, Denka Consultant and Engineering Co. Ltd., Tokyo, Japan
Session 7 (14.00 - 16.30)

OPERATIONAL PROBLEMS IN PNEUMATIC CONVEYING

Chairman's Introduction
Chairman: L. Ford, Imperial Chemical Industries Ltd., UK

"Effects of Bend Configuration of Dilute Phase Pneumatic Transport," S. Bodner, Exxon Nuclear Idaho Company, Idaho, ID, USA

"Homogeneity of Blended Nuclear Powders after Pneumatic Transport," E.E. Smeltzer, Westinghouse R & D Center, Pittsburgh, PA, USA

"A Study of Electrostatic Activity in a Full-Scale Pneumatic Conveying System," S. Singh, University of Southampton, UK

"Electrostatic Effects in a Gas-Solid Pneumatic Transport with Loadings to 100," M.R. Ally, G.E. Klinzing, University of Pittsburgh, PA, USA