REGISTRATION FORM

Bulk Solids Handling
Grain Handling

FEES
Delegate Registration: $1850 + GST
5 or more delegates receive a 10% discount.
All fees must be paid prior to the event.
Fees include program notes, laboratory sessions (where applicable), lunches and refreshments.

VENUE
TUNRA Bulk Solids
The University of Newcastle,
Callaghan, NSW, 2308
Australia
Tel: +61 2 4033 9039

ACCOMMODATION
Delegates are invited to arrange their own accommodation.

CANCELLATIONS
If you are unable to attend the event a substitute delegate is welcomed at no extra charge. If notification of withdrawal is received no less than 14 days prior to the event, 80% of the fee will be refunded. No refunds will be made if notification of cancellation is received less than 13 days prior to the date of the event. The organisers reserve the right to alter or cancel the program due to unforeseen circumstances. In the event of cancellation, a full refund of fees will be made.

GENERAL INFORMATION

This registration form should be forwarded together with payment to:
TUNRA Bulk Solids
Newcastle Institute for Energy and Resources,
The University of Newcastle, Callaghan NSW 2308, Australia
Tel: +61 2 4033 9055, Fax:+61 2 4033 9044
Email: danielle.harris@newcastle.edu.au

Presented at
THE UNIVERSITY OF NEWCASTLE
Introduction

- Brief historical review
- Gravity discharge – Modes of flow
- Mass flow, Funnel flow, Expanded flow, Intermediate flow
- Typical storage bin shapes – Industrial case studies
- Influence of bin discharge flow patterns on wall loads

Flow Properties

- Review of Test Procedures
- Jenike direct shear, annual shear tests, triaxial and uniaxial tests
- Wall friction tests
- Compressibility

Transfer Chutes & Dust Control

- Basic principals of chute design
- Dynamic modelling of hood & spoon for optimum accelerated flow
- Optimising chute profiles for feeding, transfer & wear control
- Dust control in chute operations
- Applications of DEM & CFD in chute design
- Case study examples: ship loading
- Special Cases: Moving chutes

Silo Loads & Design

- Symmetric, Eccentric Discharge
- Wall load theory & design objectives
- Design standards AS3774/96, Euro code
- Flow patterns & stress fields during storage & flow
- Influence of temperature, expansion & contraction on wall loads
- Moisture variations grain swelling
- Stringy bulk materials permeability control
- Load control
- Positioning of load-out, chutes
- Case studies: silo loadout review analysis

Silo Quaking & Shock Loads

- Theory of pulsating flow & influence of bin geometry
- Laboratory pilot scale studies
- Bin vibration analysis & shock wave transmission
- Case studies: wheat silo fertiliser bin

Wall Loads

- DEM, FEA grain silo collapse South America

Buried Structural Members

- Loads on columns & structural support members in stockpiles & enclosed bulk storage systems
- Influence of draw down flow patterns on stress fields & column loads
- Case study: Loads on support column in large bulk fertiliser storage shed

Mechanical Handling & Conveying

- Belt conveyors
- Screw conveyors
- Bucket elevators
- Chain conveyors

- Screw feeders
- Screws
- Screws & tube feeders
- Spreaders & slingers

Feeding of Grain & Bulk Products

Topics may be varied to suit delegate interest