AIMEX

Day 3: 25th September 2025
Adelaide Showground
Main Stage: 2.50 pm - 3.20 pm

TUNRA Bulk Solids Presentation:

Bulk Materials Handling: Flow, Wear and Conveyor Component Selection

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TUNRA BULK SOLIDS

Overview

This presentation provides practical insights into key challenges and solutions in bulk materials handling across mining operations. It covers material **flow property testing** and how it informs the **design of hoppers and chutes** to prevent common issues such as blockages and poor discharge. We will also discuss **wear mechanisms** affecting conveyor belts and chute liners, along with **strategies for mitigating wear** in demanding environments. Finally, the session will explore the **selection of idlers a**s the key conveyor component to **optimise reliability, efficiency, and service life.**

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Meet our Experts

Daniel Grasser

Dr Daniel Grasser is a mechanical engineer with interests in bulk materials and resulting wear. Daniel obtained a PhD from the Institute for Frontier Materials (IFM), Australia and was then appointed as an Associate Research Fellow, working in the field of wear testing of metals. In 2023, Daniel joined TUNRA Bulk Solids as a Consulting Engineer. He is particularly interested in addressing issues related to wear of mining equipment resulting from abrading and impacting solid particles. Daniel employs experiments and numerical simulations, including the Discrete Element Method.

Bin Chen

Dr. Bin Chen is the Technical Director at TUNRA Bulk Solids, a leading research and consulting group specialising in bulk materials handling. With 20 years of experience, he has delivered innovative solutions to clients across the mining, minerals processing, and materials handling industries worldwide. His expertise spans flow property characterisation, storage and handling equipment design, wear and load analysis, and bulk system optimisation. He has authored numerous technical papers & reports and presented at international conferences. He is passionate about bridging applied research with industry challenges to improve the performance, safety and sustainability of bulk handling systems in demanding mining environments.

Tiago Cousseau

Dr Tiago Cousseau holds a PhD in Tribology from the University of Porto, with research also conducted at Luleå University of Technology and SKF (The Netherlands). He has worked on reducing friction and wear in flex-fuel engines at the University of São Paulo and later became an Associate Professor at UTFPR, collaborating with VALE on idler and rail-lubrication projects. In 2024, he joined the University of Newcastle, focusing on R&D for conveyor belt and idler systems. Tiago now joins TUNRA Bulk Solids as a Consulting Engineer, specializing in belt and idler performance and durability.

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This presentation might be of interest to the following professionals from mining companies, ports, engineering companies and equipment suppliers involved in bulk solids handling and transport systems.

- Maintenance Manager/Supervisor
- Engineering Manager/Technical Manager
- Mechanical Engineer
- Process Engineer
- Reliability Engineer
- Technical Services Manager
- Services Engineer
- Design Engineer

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