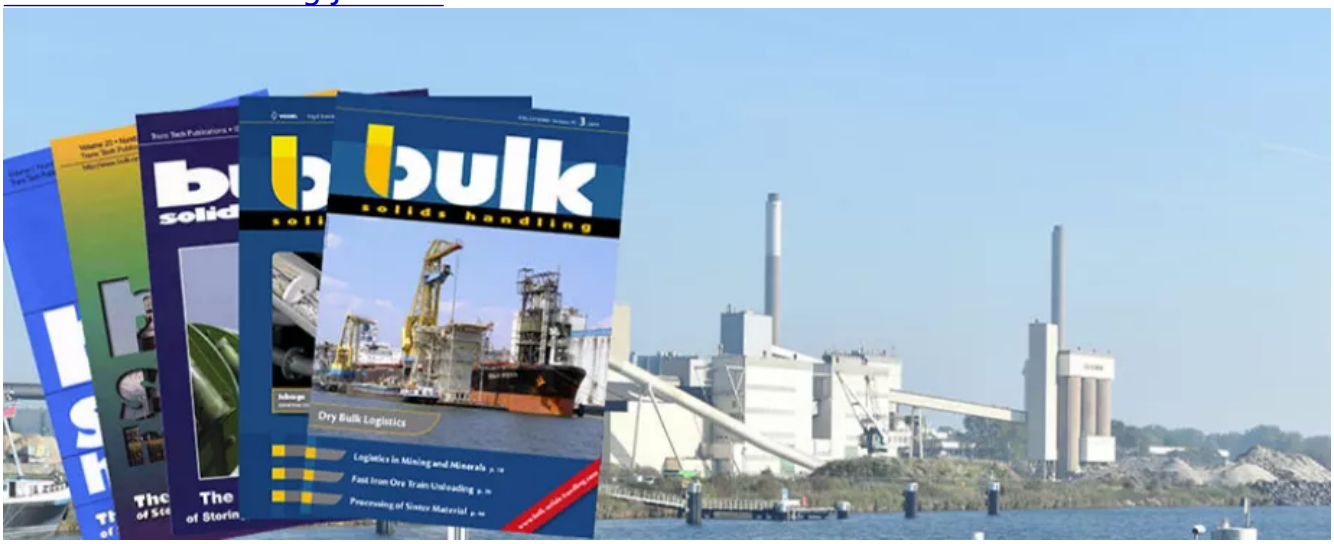
bulk solids handling Journal



Research Paper

Bulk Solids Handling Research at the University of the Witwatersrand, Johannesburg, South Africa

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The Materials Handling Research Unit of the University of the Witwatersrand has since 1972 been active in a wide range of bulk solids handling activities. From its formative years as a research programme instituted to conduct work in specific areas of pneumatic conveying, the Unit now conducts research work In areas covering pneumatic conveying, hydraulic conveying, pneumo capsule conveying, aspects of belt conveying, as well as storage and discharge of bulk materials from bins and hoppers. Within each of the above categories, researchers carry out work covering both the fundamental method and applied aspects of bulk solids handling.

Experimental Philosophy

After extensive literature surveys it was evident that in order to conduct meaningful research in the field of bulk solids handling, it would be necessary to carry out experimental work on realistically sized test rigs. As such, the basic experimental philosophy adopted by the Unit is:

Where possible all experimental work is conducted on full size test rigs in which the actual system is simulated in all respects. Only when reliable scaling of procedures are available is work conducted on a reduced size experimental apparatus.

This philosophy has received widespread approval from South African industry and has afforded researchers an opportunity of gaining excellent experience in many industrial situations.

Currently, about 70 % of the projects undertaken by the Unit result in the installation of a system in industry.