

NEWS BRIEFS

MASTER MAGNETS AND RECYCLING

Master Magnets Ltd recently acquired the business of Integrated Recycling Systems, Ltd, a leading manufacturer of recycling equipment.

GIANT SUPERCONDUCTING MAGNETS FOR PARTICLE PHYSICS RESEARCH

A giant superconducting magnet, manufactured by Ansaldo Superconductors, Genoa, Italy, has been delivered to CERN, Geneva, Switzerland. The magnet, which has an inside diameter of 6.3 m and a length of 12.5 m, has required a modular construction to allow transportation from the fabrication site in Italy to CERN. The five modules, each 2.5 m long and weighing 45 tonnes, have been transported to CERN, where they are being assembled into the final solenoid.

The magnet, which generates a magnetic field of 4 T and operates at 4.2 K, will be used in the CMS (Compact Muon Solenoid) project. The magnet stores the energy of 2.6 Gigajoule, which is the world record for energy stored in a magnet. Since the magnetic field is so high and the device is so big, large electromagnetic forces are generated inside the solenoid causing mechanical deformation. Since standard mechanical reinforcement to contain the solenoid would not be sufficient, an innovative approach of inserting the reinforcement directly into the cables has been used.

Another large superconducting solenoid has been installed in the liquid argon calorimeter of the ATLAS project at CERN. The magnet, built by Toshiba, under the responsibility of KEK in Japan, is 2.4 m in diameter, 5.3 m long and weighs 5.5 tonnes. Its axial magnetic field of 2 T will deflect the particles inside the ATLAS inner detector.

A NEW MINERAL QUANTIFIER

Blue Cube Systems (Pty) Ltd (www.bluecube.co.za) have announced a new addition to their mineral quantifier product line. The new model is designed for installation directly into a stream of dry minerals and allows determination mineral composition



FIGURE 1

in a mineral beneficiation plant circuit. The instrument uses an optical scanner which detects the fingerprint of minerals flowing through the in-line scanning head. The optical signal is then processed by a spectrometer and converted into a digital format. Proprietary software compares the scan data to the previously-stored optical profiles of the minerals expected to be present in the circuit. The mineral composition is displayed at least every minute and as frequently as every 10 s.

NEW CONTRACTS FOR RIO TINTO IRON ORE EXPANSION

Rio Tinto Iron Ore has entered into long-term sales contracts to supply an additional 40 million tonnes a year of iron ore to leading Chinese steel mills. Under these new contracts, Hamersley Iron (Rio Tinto 100%) will supply more than 30 million tonnes and the Robe River Joint Venture (Rio Tinto 53%) 10 million tonnes a year. The contracts, which have an average duration of 10 years, will reach their stated volumes following the completion of the current expansion program at the end of 2005.

SOUTH AFRICAN CONTRACTS FOR ROCHE MINING

Roche Mining (MT) has been awarded a five-year maintenance contract on all the electrostatic separators operating at the Richards Bay Minerals mine in KwaZulu-Natal, South Africa. Roche Mining also won an order for 12 new electrostatic separators.

OUTOKUMPU TECHNOLOGY TO MODERNIZE TISCO'S CHROMITE OPERATION

Tata Iron and Steel Corporation (TISCO) have contracted Outokumpu Technology for the modernization of its chromite operation in Sukinda, India. The modernization will allow TISCO to expand its chromite production and improve the overall separation efficiency. Outokumpu will supply TISCO both process technology and equipment as well as assist in installation and commissioning of the equipment. The heart of the project involves the integration of Outokumpu's washwater spirals with Floatex density separators.

HGMS CRYOFILTER FOR TALC BENEFICIATION

Outokumpu Technology installed a 5 Tesla superconducting HGMS Cryofilter 5T/360 at the Mondo Minerals Oy plant in Finland to beneficiate talc. In addition to kaolin and calcium carbonate, talc is the third white mineral from which the magnetic discolouring impurities are removed by a superconducting Cryofilter.

IMPROVED PERMANENT MAGNETIC ROLL FOR ILMENITE RECOVERY

Iluka, Florida, USA, processing plant has installed a new design of a permanent magnetic roll to separate rutile from leucoxene and ilmenite materials. This Outokumpu Technology Inprosys model which is based on a 150mm diameter roll, 1.5m wide, equipped with rare-earth permanent magnets, is operating at 1.6 times the capacity of a conventional separator.

OUTOKUMPU TO DISTRIBUTE SLON MAGNETIC SEPARATORS

Outokumpu Technology signed an agreement with Ganzhou Vertical Ring Equipment Inc., to be a global distributor of SLON wet high-intensity magnetic separators to the markets outside China.

GRAY-WATER RECYCLING DEVICE FOR RE-USE

A SME based in Scotland has designed a patented gray-water recycling device. The technique takes gray-water, for instance, from baths, showers and sinks and recycles it for use in flushing toilets. The system uses conventional hydrocyclone technology for first-stage separation of hair, grit etc. from gray-water. The water then enters a patented filtration unit for second-stage separation. Once plumbed in, the device works automatically and can be left permanently connected without intervention. The scale of application ranges from domestic to industrial use.