

# EXPLORATION

## *Dr. Wolfgang Baum*



Dr. Wolfgang Baum is a world recognised process mineralogist with over 40 years of industrial experience in the mining industry. Over his career, he has specialised in ore characterisation, process mineralogy, lab automation and geo-metallurgical applications primarily in copper, molybdenum and gold mining. He also has extensive operational experience in lead/zinc, potash, phosphate, heavy minerals and environmental remediation. He was until recently Director of the Ore Characterization and Process Mineralogy Laboratory at the FLSmidth Minerals Research Test Center in Salt Lake City, Utah.

Baum pioneered the first commercial installation of QEMSCAN technology in the USA, operating five QEMSCAN systems in Arizona, and two at a mine site in Peru. He was the leader of a design and engineering team for the installation of the two of the most advanced robotics preparation and analytical laboratories in the USA. He is an innovator in the integration of mineralogical analyses into geo-metallurgical programs for several base metal mining operations in the USA and overseas.

Baum has now left FLSmidth and set up Ore & Plant Mineralogy, providing consulting services to the industry, based in San Diego, California.

He has authored over 70 technical papers, holds two patents, and received the James Douglas Gold Medal award from SME in 2009.

Before joining FLSmidth, Baum was with Freeport-McMoRan Copper & Gold (2007-2011) and Phelps Dodge Mining (1999-2007) as Director, Material Characterization. From 1987-1999 he had been Vice President &

Chief Mineralogist at Pittsburgh Mineral & Environmental Technology and prior to that (1984-1987) Head of the Process Mineralogy Department at St. Joe Minerals Corp.

At Phelps Dodge Mining is achievements included designing, building and operating the largest and most advanced Ore Characterization & Process Mineralogy Service Facility in copper mining. He pioneered the first commercial installation of QEMSCAN technology in the USA and:

- Performed the first QEMSCAN-based heap leach audit
- Implemented the QEMSCAN Rapid-SCAN technique for fast turnaround
- Generated \$35 million extra revenue through a QEMSCAN survey on one concentrator.

He was leader of the design/engineering team of the most advanced Robotics Lab in copper mining (a \$12 million project). This lab was commissioned and took on full production within five months after completion. It included capacity for handling over 1,000 blasthole/geology samples per day, the first (worldwide) fully automated wet chemistry module and the first (worldwide) fully automated Cu cathode lab.

In geo-metallurgy and advanced automated ore profiling Baum conceptualised, designed and constructed the world's first Automated XRD-NIR Lab with a daily capacity of 500 samples for quantitative XRD-NIR mineralogy (a \$6.5 million project). He designed and installed a small modular Robotics Sample Preparation System to support daily blasthole XRD/XRF/NIR analysis (the first of its kind in the industry). He implemented routine NIR use in operations for ore routing (5 NIR systems).