

### BioMinE

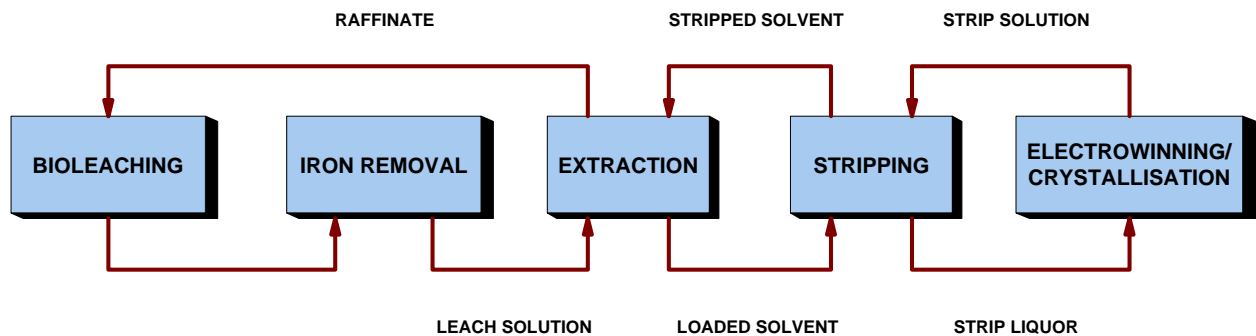
#### Separation and Purification of Base Metals from Bio-leach Solutions by Solvent Extraction (SX)

BioMinE (Biotechnology for Metal Bearing Material in Europe) is an integrated project under the sixth framework program of research, supported by the European Commission. The project started in November 2004 and ended in October 2008. BioMinE will allow the integration of innovative biotechnology based processes for recovery and/or removal of metals from primary materials (ores and concentrates), and secondary materials (mining wastes, metallurgical slags, metal bearing scrap, power plant ashes, etc.).

A new application of bio-hydrometallurgy in the mineral processing industry is bio-leaching. Bio-leaching can be defined as recovery of metals from ores by using microorganisms to convert insoluble minerals

into soluble metals. The method that can be used for recovering different metals is mostly used in the recovering of copper. In addition to this a number of processes exist that uses this technique on other base metals (Ni, Co, Zn).

The leaching by biotechnology in combination with well-established solvent extraction procedures will provide attractive alternatives in future hydrometallurgical process technology. The concept has been demonstrated by laboratory scale studies on the separation and purification of copper, nickel and zinc from different bio-leach solutions. Based on achieved solvent extraction data, process parameters have been selected, using suitable commercial reagents for these base metals.



#### General Flowsheet – bio-leaching / solvent extraction / electrowinning

#### Reference.

World of Metallurgy - ERZMETALL 62(2009) No 6

MEAB Know-how Info 12-2010

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