XPS Consulting & Testwork Services

Hydrometallurgical Laboratory

Hydrometallurgical process applications are competing actively with the more traditional pyrometallurgical processing routes. Tighter **environmental** regulations and increasing **energy** prices make the hydrometallurgical treatment of specific ore types more attractive and sustainable.

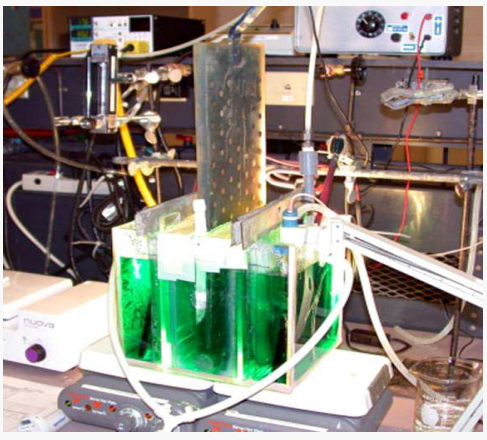
The extractive metallurgy group of XPS consists of resourceful engineers and experienced technicians. Supported by a well equipped hydrometallurgical laboratory, the extractive metallurgy team **aims** to adapt your existing processes to new feed materials, to raise your impurity tolerance levels, and to ascertain the highest possible throughput and product/metal quality.

High temperature pressure leaching can be performed in different types and sizes of autoclaves which are set-up in our autoclave laboratory. Highly skilled operators supported by a fully automated control system ensure safe, high quality test work and reliable results suitable for initial process design.

Atmospheric leaching, both batch and continuous, is performed in the hydrometallurgical laboratory that is equipped to set-up complex and fully customised lab-scale flow sheet simulations. Heap leaching can also be simulated when using column leaching in a combination with ore agglomeration, if required.

Electrochemistry is also practised in our Extractive Metallurgy group at XPS. There are installations to perform lab-scale experimental work for electro-plating, electrochemical dissolution and electrolyte conditioning. Potentiostat cyclic voltammetry and impedance spectroscopy allows us to monitor the passivation and slime formation on anode/cathode surfaces at different current densities. Electrolytic deposition (refining or winning) and corrosion studies are included in our project portfolio.

Practical examples of hydrometallurgical process development are **heap leaching** of limonite ore, the **electroplating** of nickel crowns and the **pressure oxidation** leaching of a base-metal sulphide concentrate. Available bench-scale autoclave volumes and construction materials are 2 litres (Ti), 8 litres (Ti), 30 litres (Ti) and 4 litres (Hastelloy C-276).



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