

Technology's description

This solution developed by IRD consists in **producing Sulfuric acid** at a very high yield (90-100%) with the help of **alkaliphile Sulfato Reducing Bacteria** from the *Desulfohalobiaceae* family or the *Desulfonatronum* group, when they are growing under optimal aqueous conditions (**pH > 9.5**).

Actually, this technology converts the **soluble metal** compounds in the effluent into **insoluble Sulfides**, making it possible to remove the precipitated metals by simple decantation or filtration.

The other existing processes are expensive and unsatisfactory with regards to safety standards when large amounts of Hydrogen Sulfide are produced. Also other processes need to cope with stringent environmental standards.

The Sulfuric acid produced can be used for the treatment of effluents containing heavy metals so as to avoid the undesirable presence of gaseous hydrogen sulfide.

Advantages

- Performances : high Sulfuric acid yields
- Low cost process : cheaper reagents used compared to other technologies
- Safety: no gaseous Hydrogen Sulfide produced.

Intellectual property

Patent

Development level

Technology validated in lab



Applications

- Sulfuric acid bioproduction - Industrial effluents decontamination.

Technology transfer

- Licencing - Codevelopments

