FLOCCULATION PROCESS FOR THE GERMANIUM RECOVERY IN SOLUTION

PATENTED TECHNOLOGY

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ABSTRACT

The research group has developed and optimized a procedure to recover the germanium present in aqueous solutions to obtain a germanium oxide (GeO_2) of high purity. It is based on the flocculation germanium, combining the selective formation of a germanium complex with a specific organic ligand and subsequent precipitation by a quaternary amine. Subsequently, a separation step is performed and finally a calcination step where the organic fraction is completely removed, leaving a germanium oxide (IV) of high purity.

Among the main advantages, this process stands out by being fast, simple, inexpensive and effective (recovery percentages higher than 90% are achieved).

Besides it allows the selective recovery of germanium from solutions containing other metals, and does not require the use of organic solvents or complicated processes of $GeCl_4$ distillation.