pond depth has been found to be useful but should be optimized further.

~~It is therefore an object~~ Embodiments of the present invention seek to provide an improved process for working up an emulsion formed in hydrometallurgical winning and to create an improved process for the hydrometallurgical winning of a metal.

~~The invention achieves this object by means of the features of claim 1.~~

According to an aspect of ~~The~~ the present invention, there is ~~provides~~ provided a process for the centrifugal work-up of a solids-containing emulsion formed in the hydrometallurgical winning of a metal, where the work-up is carried out in at least one decanter ~~(full-barrel screw centrifuge)~~ to form a first lighter liquid phase, a second liquid phase and a solids phase, ~~characterized by~~ the process comprising the following steps:

i) determination of an actual value of the density of the first liquid phase,

ii) comparison of the actual value with a guide parameter, in particular a prescribed density value, and

iii) setting of the outflow pressure of the first liquid phase as a function of the guide parameter.

The adjustment of the separation zone as a function of the density of the first liquid phase is carried out in such a way or has the consequence that the residence time of this phase in the decanter is optimized so that the phase is discharged with good removal of solids.

The first liquid phase can as a result ~~always~~ be recirculated to the hydrometallurgical process as

solvent for the solvent extraction. At the same time, the second liquid phase can also be discharged from the

decanter with only low solids contamination and optionally be recirculated as leaching solution to the hydrometallurgical process. At relatively high metal ion concentrations, the first liquid phase, preferably as organic phase, can also be fed to the backextraction in order to achieve maximization of the yield of metal in the hydrometallurgical winning process. In both cases, the efficiency of the hydrometallurgical process ~~is~~can be increased. In addition, the solvents used in the hydrometallurgical process can be recovered to a greater extent.

A phase separation to form a first liquid phase, a second liquid phase and a solids phase is carried out here. A setting of the outflow pressure in the outflow line of a peeling plate for discharge of the first phase is preferably carried out. For this purpose, the density of the first liquid phase is determined as actual value and compared with at least one prescribed value. If the actual value deviates from the prescribed value, the outflow pressure of the first liquid phase is altered.

The regulation is preferably configured in such a way that the system regulates the associated pressure according to the minimum of the density.

Advantageous embodiments of the invention are subject matter of the dependent claims.

In the case of an excessively abrupt increase in the outflow pressure, part of the organic phase could be discharged together with the aqueous phase from the decanter. To avoid this, it is advantageous to determine an additional process parameter and set it to a predetermined prescribed value. This can, for example, be effected by determining the yield, the

conductivity and/or the purity of the organic phase and/or the aqueous phase.

The above-described process is also suitable as part of a process for the hydrometallurgical winning of a metal, which preferably comprises the following steps:

A) provision of a metal ore;
B) leaching of the metal ore to form a metal ion-containing aqueous solution or slurry;
C) solvent extraction to transfer metal ions into an organic solvent phase;
D) backextraction of the metal ions with addition of an electrolyte solution to the organic solvent phase; and
E) electrochemical winning of the metal.

A solids-containing emulsion is formed during the solvent extraction and this is worked up by one of the above processes. The work-up of the emulsion may improves the efficiency of the hydrometallurgical winning process. Fluctuations caused by the inhomogeneous composition of the metal ore, in particular by a changing proportion of silicates or sand, influence the efficiency of the hydrometallurgical winning process to only a small extent.

Advantageous embodiments of the invention are subject matter of the dependent claims.

To achieve an efficient mode of operation, it is particularly advantageous that the liquid phases recovered from the emulsion can be recirculated as organic solvent or leaching liquid to the extraction process, so that an environmentally friendly and economical mode of operation is made possible.

An advantageous variant of the invention is illustrated below with the aid of the drawings.

## Claims

1. A process for the centrifugal work-up of a solids-containing emulsion formed in the hydrometallurgical winning of a metal, where the work-up is carried out in at least one decanter ~~(1)~~ to form a first lighter liquid phase ~~(5)~~, a second liquid phase ~~(6)~~ and a solids phase ~~(7)~~, ~~characterized by~~ the process comprising the following steps:

i) determination of an actual value of the density of the first liquid phase ~~(5)~~,

ii) comparison of the actual value with a guide parameter, in particular a prescribed density value, and

iii) setting of the outflow pressure of the first liquid phase as a function of the guide parameter.

2. The process as claimed in the preceding claim, ~~characterized in that~~ wherein the setting of the outflow pressure is effected by throttling of a valve ~~(12)~~ in an outflow line ~~(9)~~ downstream of a peeling plate ~~(8)~~ for discharging the first liquid phase ~~(5)~~ from the decanter.

3. The process as claimed in either of the preceding claims, ~~characterized in that~~ wherein the first liquid phase ~~(5)~~ has a lower density than the second liquid phase ~~(6)~~.

4. The process as claimed in any of the preceding claims, ~~characterized in that~~ wherein the work-up is carried out with formation of an organic phase ~~(5)~~, an aqueous phase ~~(6)~~ and a solids phase ~~(7)~~, where the organic phase ~~(5)~~ is the first liquid phase and the aqueous phase ~~(6)~~ is the second liquid phase.

5. The process as claimed in any of the preceding claims, ~~characterized in that~~ wherein the work-up of the emulsion is carried out in a three-phase decanter.

6. The process as claimed in any of the preceding claims, ~~characterized in that~~ wherein a further regulating parameter is determined in addition to the density and is taken into account in the setting of the outflow pressure.

7. The process as claimed in claim 6, ~~characterized in that~~ wherein the yield, the conductivity and/or the purity of the first liquid phase ~~(5)~~ and/or the second liquid phase ~~(6)~~ is employed as additional regulating parameter.