

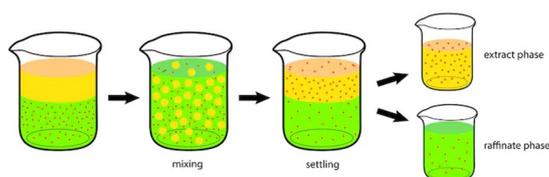
### Case Study

**THE CHALLENGE:** Acid pickling of metal parts is a common operation in numerous processes in the metallurgy sector and the manufacture of metal products. It is a chemical operation carried out by immersion in acid baths to remove the layer of oxides formed on the surface of the steel after the surface treatment. During the pickling operation, the acid used is consumed, while the metals are dissolved in the bath, producing an increase in their concentration in the acid solution.

As the bath is used, the acid concentration decreases because of the accumulation of metals from the piece, requiring periodic additions of acid so that the effectiveness of the process is not significantly decreased.

This is why there is a need to propose a research and development project, which allows the correct and environmentally friendly treatment of these spent acids, allow its regeneration or its recovery and the recycling of metals, in the context of a circular economy.

**THE SOLUTION:** The main objective of the ZINCAT project is the research for the creation of a new hybrid technology for the treatment of acid waste of industrial origin, such as spent acid pickling baths, based on a combination of technologies, specifically liquid-liquid extraction (L-L) electrodeposition, and other separation technologies to achieve its valorization.



**BENEFITS:** The ZINCAT project will allow the creation of new knowledge and differential R&D of high impact in the territory and for Catalan companies, through the improvement and adaptation of L-L extraction processes, and their combination with electrodeposition and other separation technologies, giving rise to a new specialized treatment and valorization process for this typology of waste, and the contribution of new products of market interest such as those contemplated in the project.

The success of the project will determine an important step in the sustainability of the recycling sector, while guaranteeing the valorization of waste that currently ends up in landfills, even though it is waste with valorization potential, and the creation of new quality products suitable for their introduction to the market.

**COST:** 248.166,5€

**DURATION:** 13/09/2019 – 31/08/2023

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