



LIFE16 ENV/ES/000242

ACTIVITIES



Milestone achieved: > 90% Zn extracted

After several test, the extraction of zinc from the spent pickling acids has been raised up to a 95%. This promising result allows the maximum zinc recovery (the target by-product to be recovered in the project), while generating a residual acid stream with negligible content in zinc but remaining almost all the iron content, thus being able to be reused for treating purposes in the anaerobic digestion of sludge from water treatment. On the other hand, the effluent after electrodeposition has been tested as stripping stream for zinc back-extraction, with positive results. This operating procedure promotes closing the loop while avoid generating a residual stream to be treated.

Spanish circular economy deal (BPEC)

The Ministry for Ecological Transition and the Demographic Challenge has included the technology described in the LIFE-2-ACID project in the I Catalogue of good practices in circular economy under the title "Sustainable use of metallic resources in galvanization". It is included in group M on professional, scientific, and technical activities and in subgroup 7219 "Other research and experimental development in natural sciences and technology".

It highlights the scope and relevance of BPEC in circular economy, the main objectives, a brief description of the technology and an illustrative scheme of the process, as well as the main difficulties and challenges involved.

Uso sostenible de recursos metálicos en galvanización

Valencia Unión Europea

Ámbito de acción y relevancia de la BPEC en EC

- Medidas de/o que fomenten el reciclado: recuperación de materiales de los residuos para reprocessarlos en nuevos productos, materiales o sustancias, ya sea para el propósito original o para otros propósitos.
- Actuaciones para la reutilización del agua en los procesos industriales.

Objetivos

- Recuperar y reutilizar el zinc y hierro obtenidos a partir de residuos, para fomentar el uso eficiente de los recursos y reducir dichos consumos.
- Reducir el impacto medioambiental generado en los procesos de galvanización mediante una gestión y tratamiento eficiente de sus residuos.
- Demostrar que el procedimiento resulta eficiente tecnológicamente y económicamente y fomentar su aplicación en la industria para contribuir en la mejora de los indicadores ambientales definidos.

Descripción

Demstración de una tecnología eficiente y sostenible, que sea fácilmente escalable y replicable para la recuperación selectiva de zinc y cloruro de hierro a partir de baños de decapado ácidos generados en procesos de galvanización, minimizando así el impacto ambiental de este sector.

La corriente residual generada puede reutilizarse en el proceso de galvanización, y el agua resultante del procedimiento de recuperación se puede emplear para reformular baños de decapado en las mismas empresas.

Resultados Clave

- Materiales Emisiones Residuos Agua
- Conocimiento Desarrollo sostenible

Principios de EC

Objetivos ODS

Dificultades o retos identificados

- Reconocimiento de subproductos/materias primas secundarias.
- Problemas de calidad.

Entidad

AIDIMME en colaboración con AIAS, APRIASystems, GALESA, MARE, UC y UPV.

Más información: <https://www.aidimme.es/>



MONITORING MEETING

4th Monitoring visit

During the 4th monitoring visit of LIFE-2-ACID, administrative documents of all partners were reviewed, most relevant results were presented as well as the difficulties found, and the remediation actions taken. The meeting was very fruitful, and it has established several points to move forward on the proper project execution.



DISSEMINATION & OUTREACH ACTIONS

International day of Woman & Girls in Science 2021

On celebration of the International Day of Women and Girls in Science, Andrea Arguillarena, researcher from the Chemical and Biomolecular Engineering Department of the University of Cantabria, has explained in a video the main objectives of the LIFE-2-ACID project and its circular economy proposal to recover metallic species from the steel galvanization process and transform them into value-added resources.



World environment Day 2021

During the World Environment Day, celebrated last June 5, 2021, an informative publication of LIFE-2-ACID project has been published through our partner APRIA Systems. It has been published in the printed and digital version of a regional newspaper in Cantabria, El Diario Montañés, in a special section dedicated to entities that offer sustainable solutions for the environment.

PUBLICATIONS

- ✓ SCALE-UP OF MEMBRANE-BASED ZINC RECOVERY FROM SPENT PICKLING ACIDS FROM HOT-DIP GALVANIZING. Arguillarena, A., Margallo, M., Arruti-Fernández, Axel., Pinedo, J., Gómez, P., Urtiaga, A., 2021. Membranes, 10(2), 444.

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