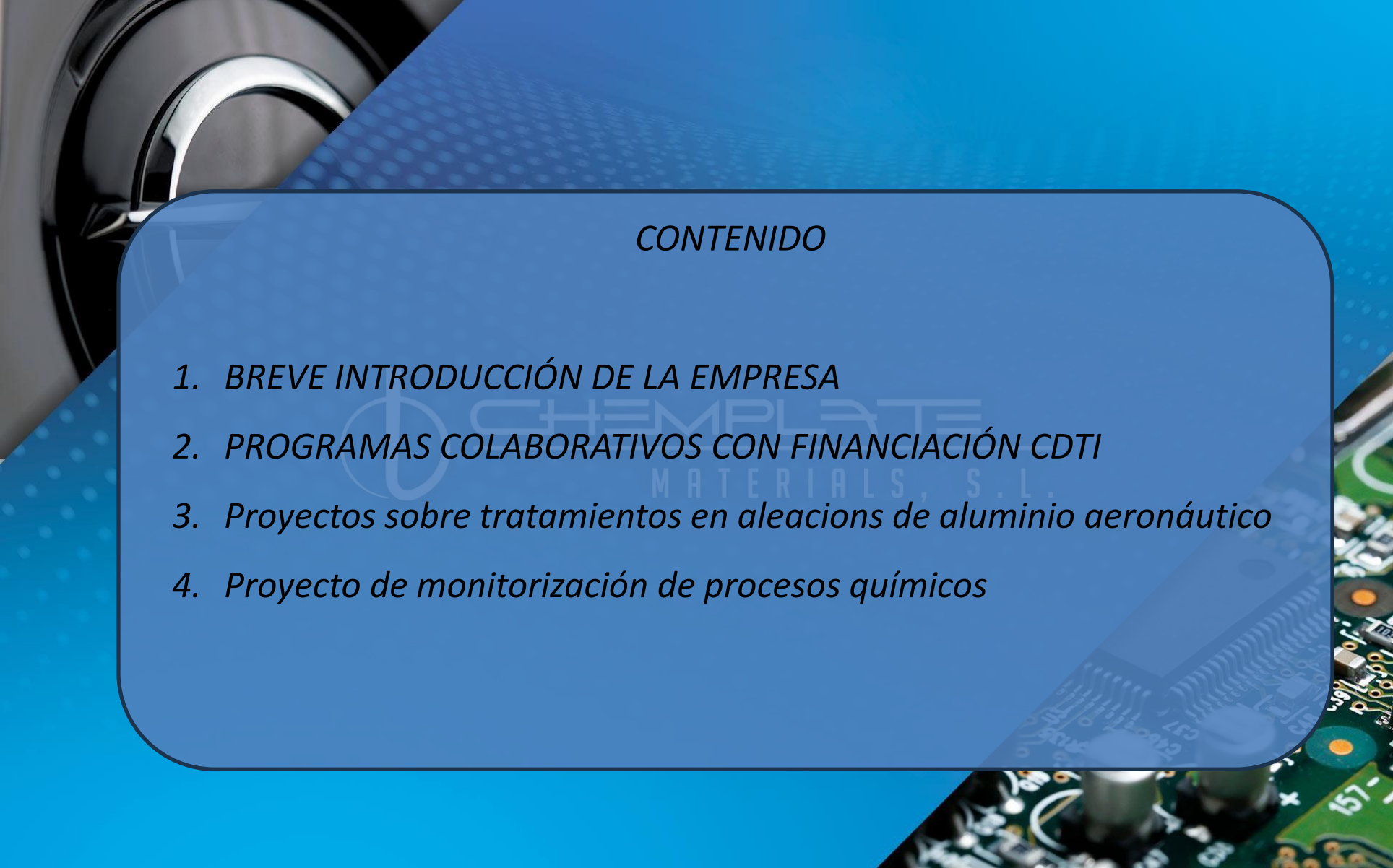




Monitorización en línea de pretratamientos para aleaciones aluminio

Andreu Ruiz – R&D Project manager

05-02-2025



CONTENIDO

1. *BREVE INTRODUCCIÓN DE LA EMPRESA*
2. *PROGRAMAS COLABORATIVOS CON FINANCIACIÓN CDTI*
3. *Proyectos sobre tratamientos en aleaciones de aluminio aeronáutico*
4. *Proyecto de monitorización de procesos químicos*

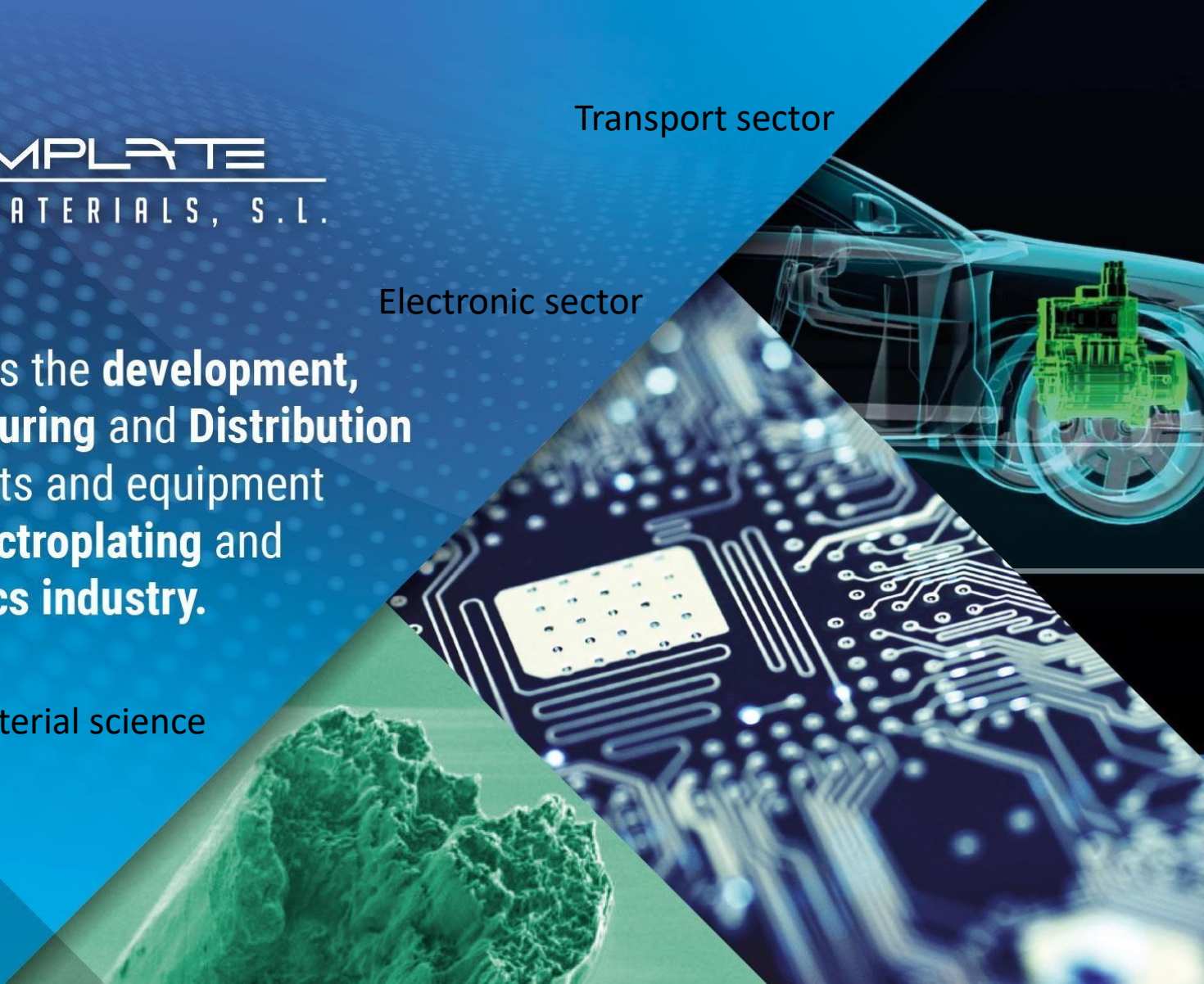


Transport sector

Electronic sector

Our goal is the **development, manufacturing and Distribution** of products and equipment to the **electroplating and electronics industry.**

Material science



Chemicals

Sede central – **Sta. Perpetua de Mogoda**
Centro logístico – **Manlleu**
Centro de plantas piloto – **Terrassa**

Empresa química con el concepto primordial de escalar pruebas de concepto (“modelo Scaleup”) y proveer formulaciones químicas y soluciones técnicas para cumplir con los requerimientos de cada sector y reglamentos medioambientales, cada vez más cambiantes.



Distribution companies: (As Product Exclusive-Representative)



DR. HESSE
Our products create the future



INNOVATIONS IN CLEANING



PENTAGAL
Chemie und Maschinenbau GmbH

FUJIFILM

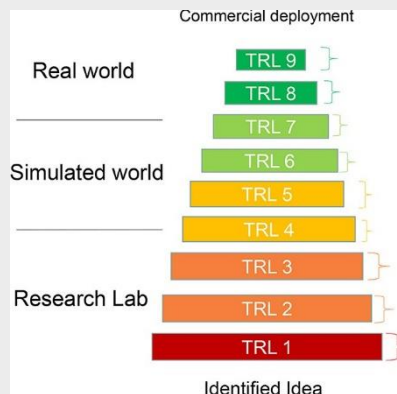
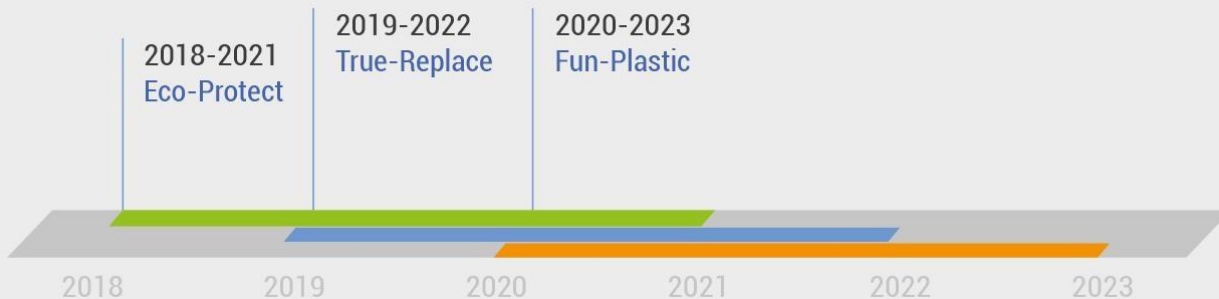


TECHNOLOGY CORPORATION



PROYECTOS EUROPEOS Y NACIONALES

(proyectos de escalado de TRL 3 hasta 7)

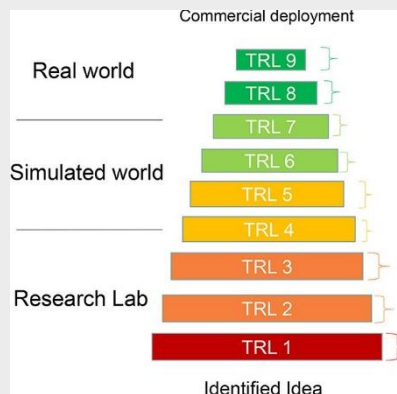


More than 1 Million Euros
in investment in 5 years



PROYECTOS EUROPEOS Y NACIONALES

(proyectos de escalado de TRL 3 hasta 7)



More than 1 Million Euros
in investment in 5 years



Own development of **chemical formulation for surface treatment** for smooth cleaning and selective elimination of intermetallic clusters (potential corrosion initiating points): Mg, Si Ox

ALU ETCH-ECO



NaOH



NaOH + ALU ETCH-ECO

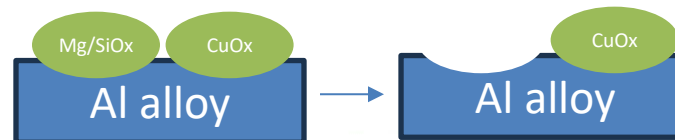


NaOH + Bonderite



Electroplating fabrication lines for surface engineering/pickling of metal pieces/parts

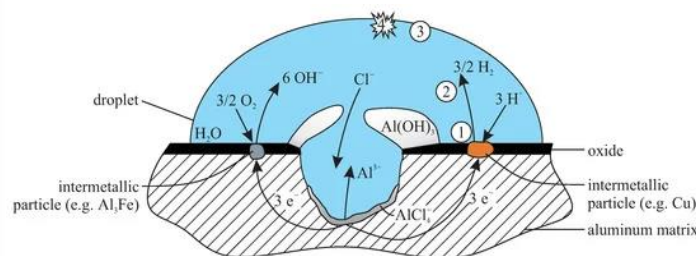
CHEMPLATE® ALU ETCH ECO PROCESS



$\text{HNO}_3 + \text{H}_2\text{SO}_4 + \text{peroxide salts}$

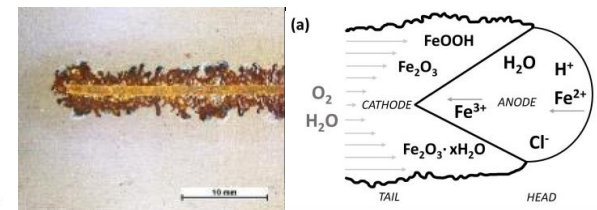
Development of own **analytical equipment to monitor de quality of the bath and surface treatment**, then adjusting the chemical composition of the treatment bath when eldering.

Key factor has been to partially eliminate the intermetallic clusters promoting pitting and then with defects goes to filiform corrosion

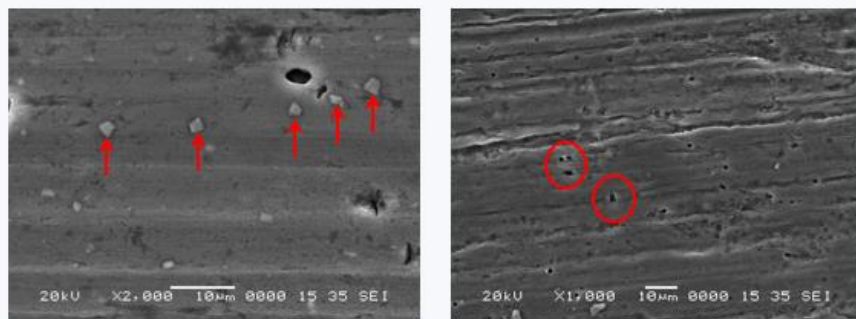


2023 <https://doi.org/10.3390/app13010370>

2024 <https://doi.org/10.1016/j.porgcoat.2024.108469>



ELECTRONIC MICROSCOPY IMAGES

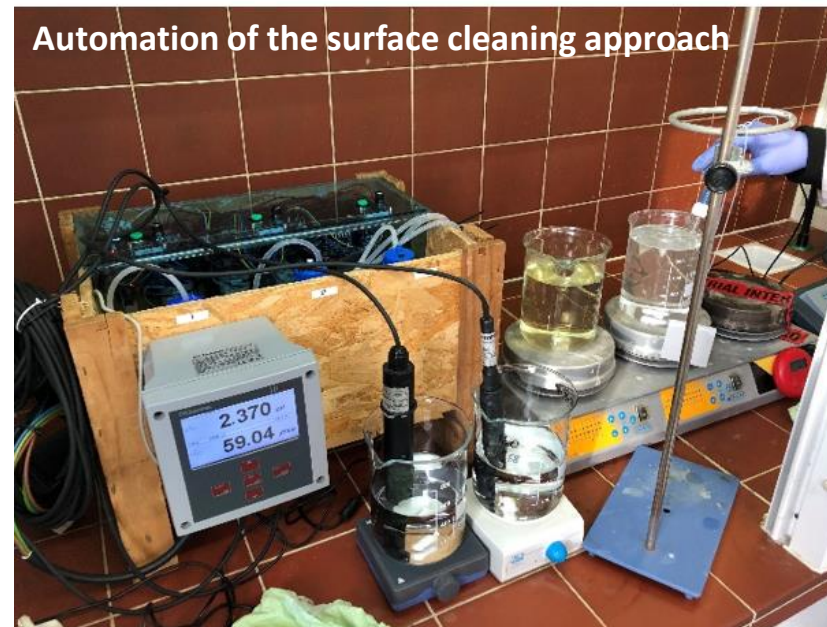


Novel and scalable monitoring devices for electroplating industry



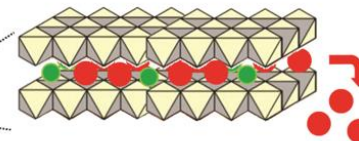
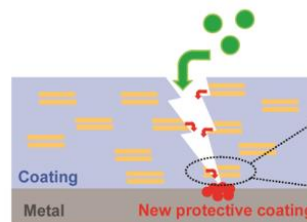
Mitigation of corrosion events in metal parts within large infrastructures

Automation of the surface cleaning approach



Own development of
*chemical dispersion of
metal-oxide nanostructures
within surface treatment
baths for coating
approaches*

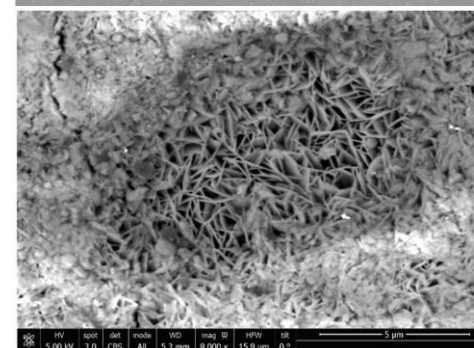
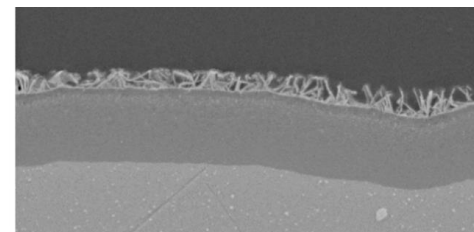
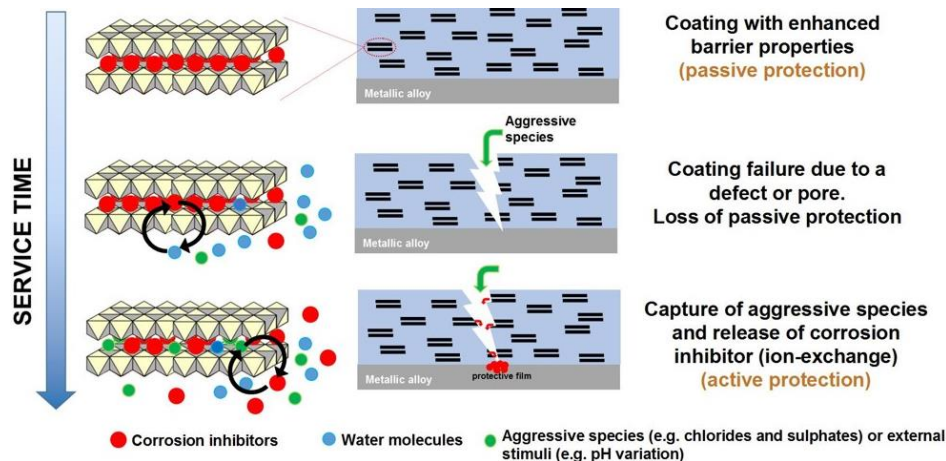
4-in-1 Performance



- Corrosion Inhibitor
- Aggressive Anions (e.g. Cl^- , SO_4^{2-})

- Barrier Protection
- Buffering Action

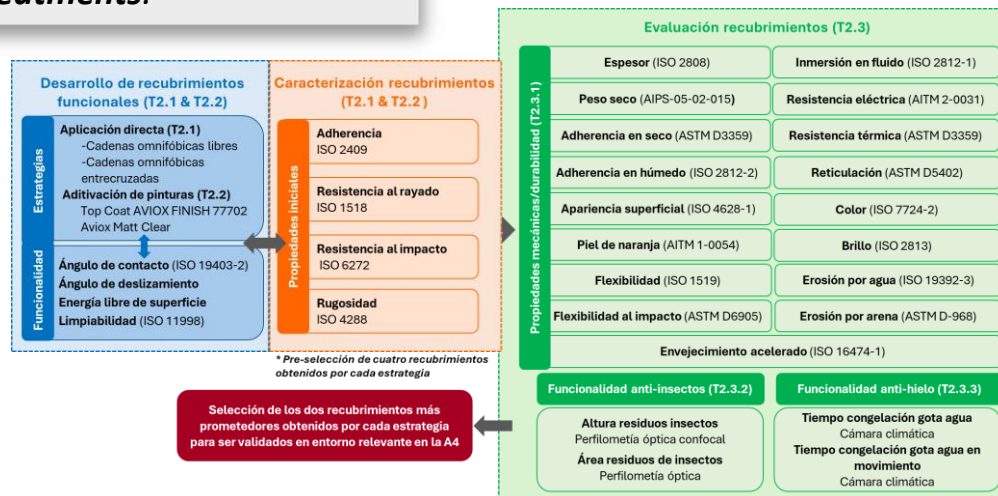
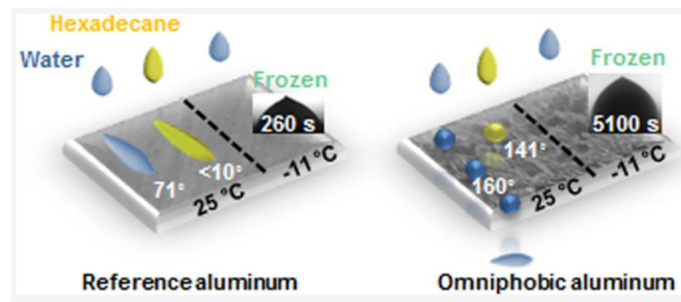
- Controlled Release of the Corrosion Inhibitor/Cathodic Passivation
- Capture of Aggressive Anions



Layered structures **within coatings and on top of anodized surface**



The objective is to increase energy performance in flight, and reduce the polluting effects of an aircraft, through using **omniphobic treatments**.



COORDINADOR

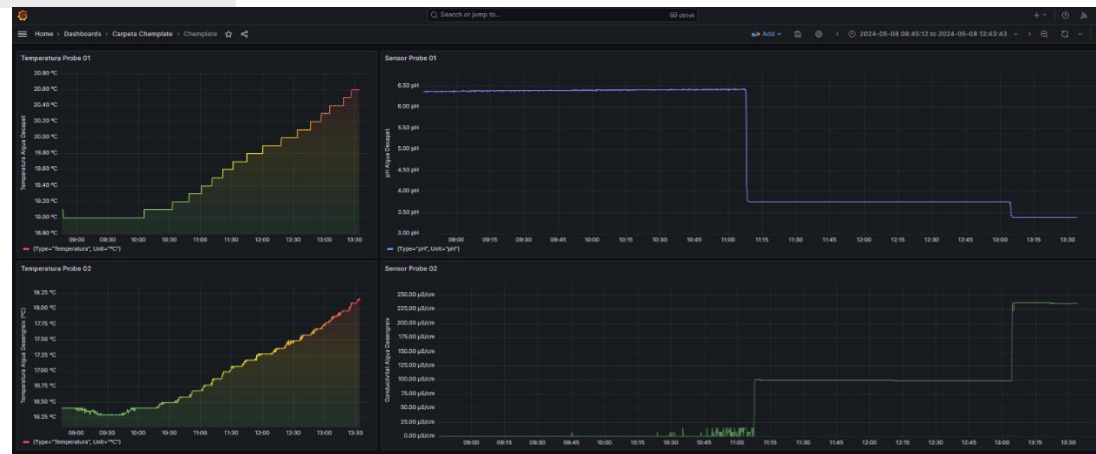
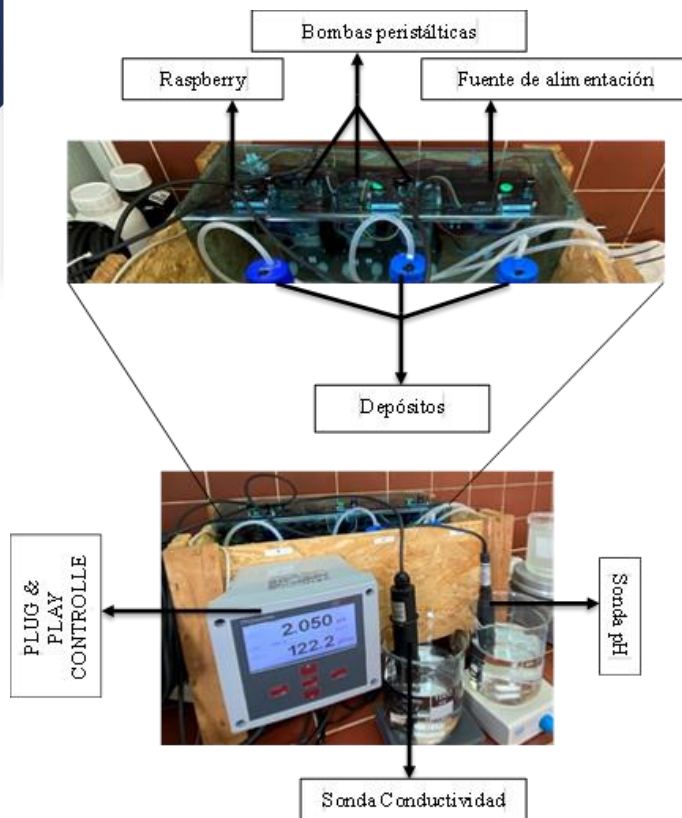


SOCIOS



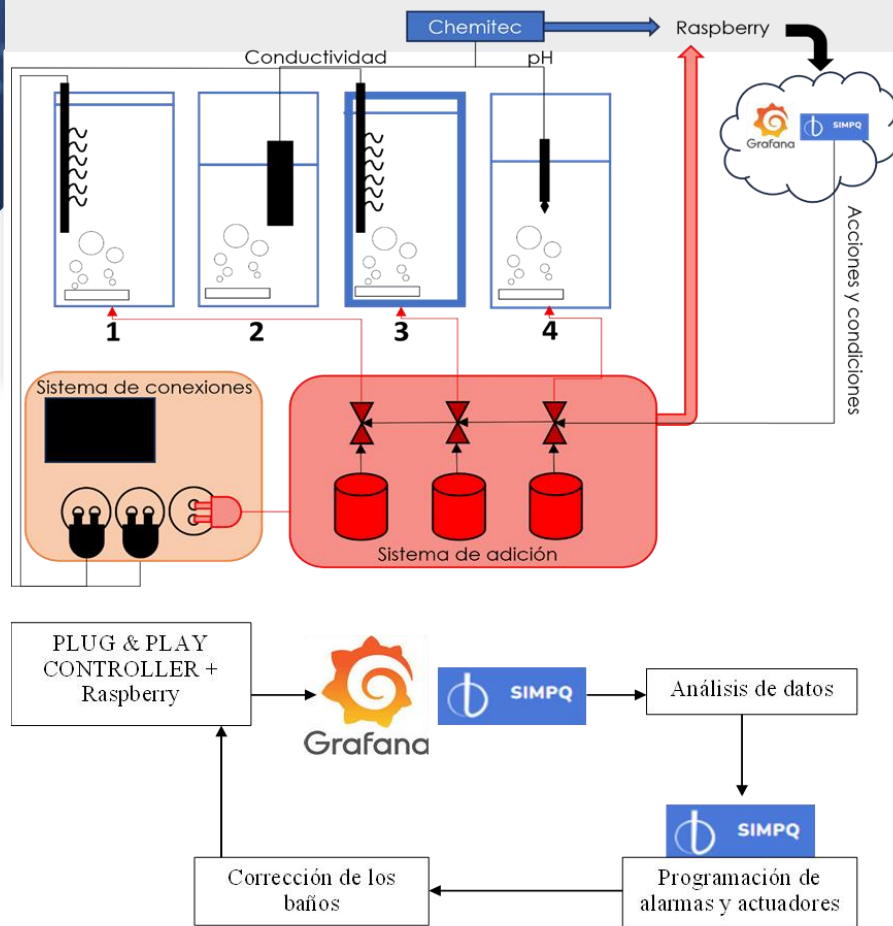
SUBCONTRATACIÓN



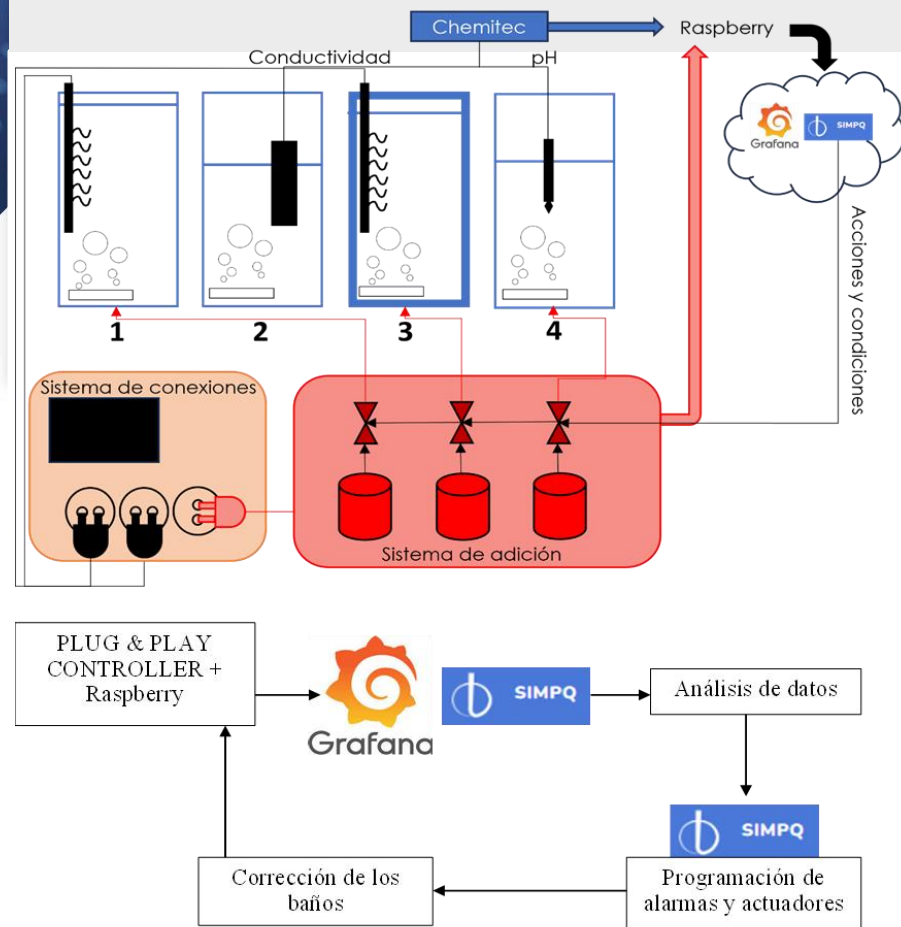


Este sistema junto a dos webs creadas por Chemplate (basadas en Grafana y SIMPQ), han sido fundamentales para estudiar y analizar el comportamiento de estos parámetros durante las operaciones de tratamiento de superficies en aluminio aeronáutico.

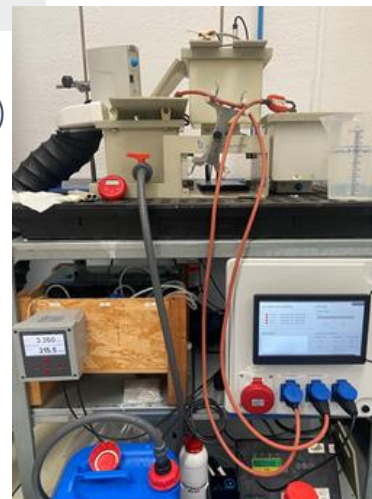
Proyecto de monitorización de procesos químicos



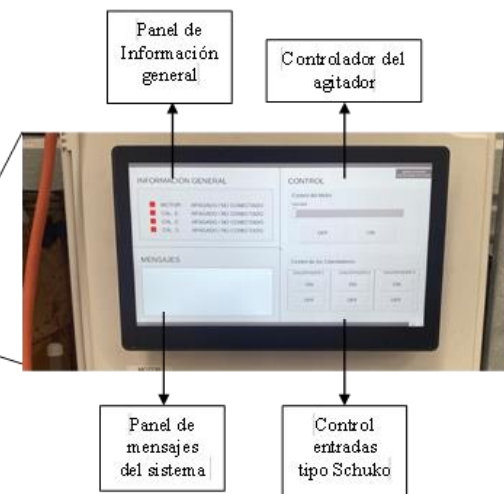
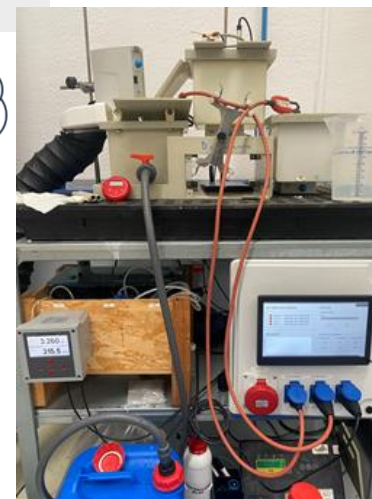
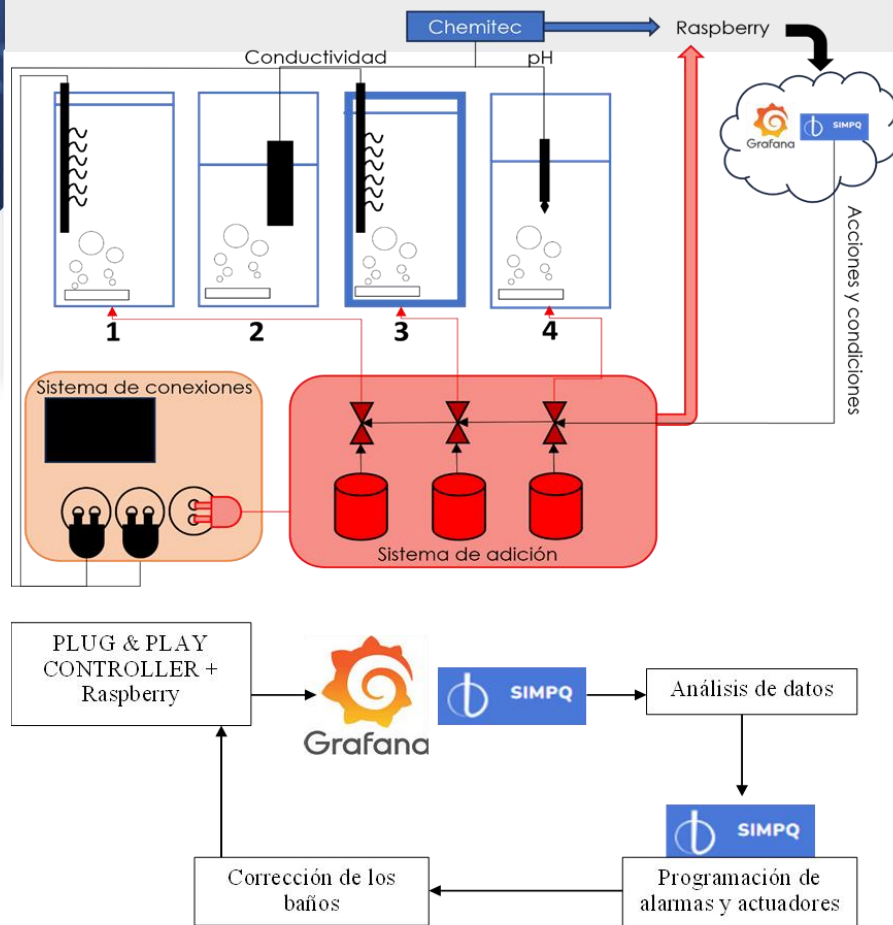
Proyecto de monitorización de procesos químicos



CHEMPLATE
MATERIALS, S.L.



Proyecto de monitorización de procesos químicos





Sistema Industrial de Monitoratge de Processos Químics

Benvingut!

Accedir

Proyecto de monitorización de procesos químicos

 SIMPQ

Panel de Control

CLIENTS

CHEMPLATE >

CIDETEC >

GDE >

GDE2 >

TITANIA >

EL MEU COMPTA

Perfil

Tancar Sessió

Panel de Control

CLIENTS CONFIGURATS
5

ÚLTIM ACCÉS DE L'USUARI
30/01/2025 12:38

Clients



Anàlisi

Configuració

Gràfics

Taules



Anàlisi

Configuració

Gràfics

Taules



Anàlisi

Configuració

Gràfics

Taules



Anàlisi

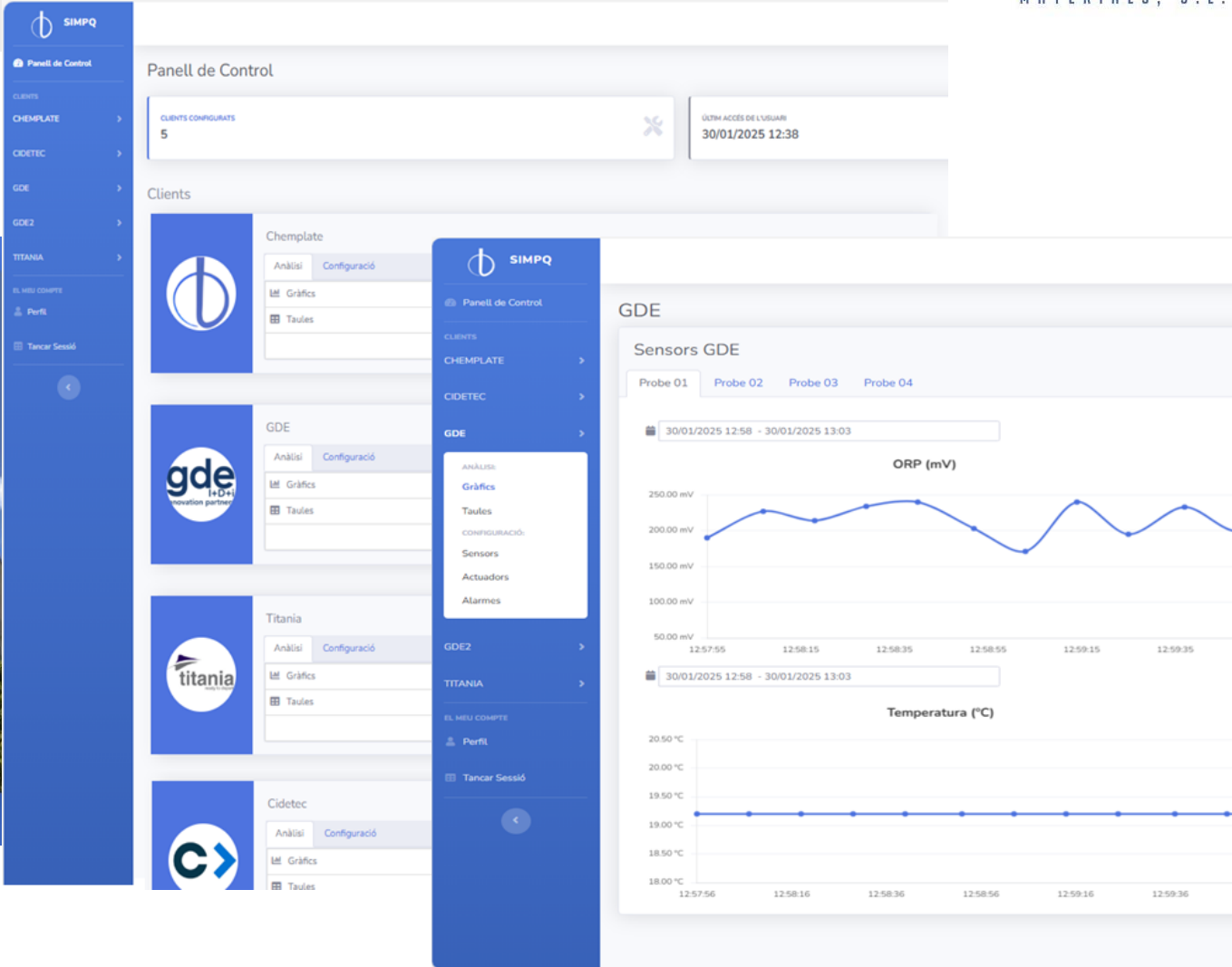
Configuració

Gràfics

Taules



Proyecto de monitorización de procesos químicos



Acknowledgement for the support:



Thanks for your attention

