



Booklets

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**Title: Design of an experimental reactor for the selective and efficient recovery of lithium from the leaching of waste battery cathodes**

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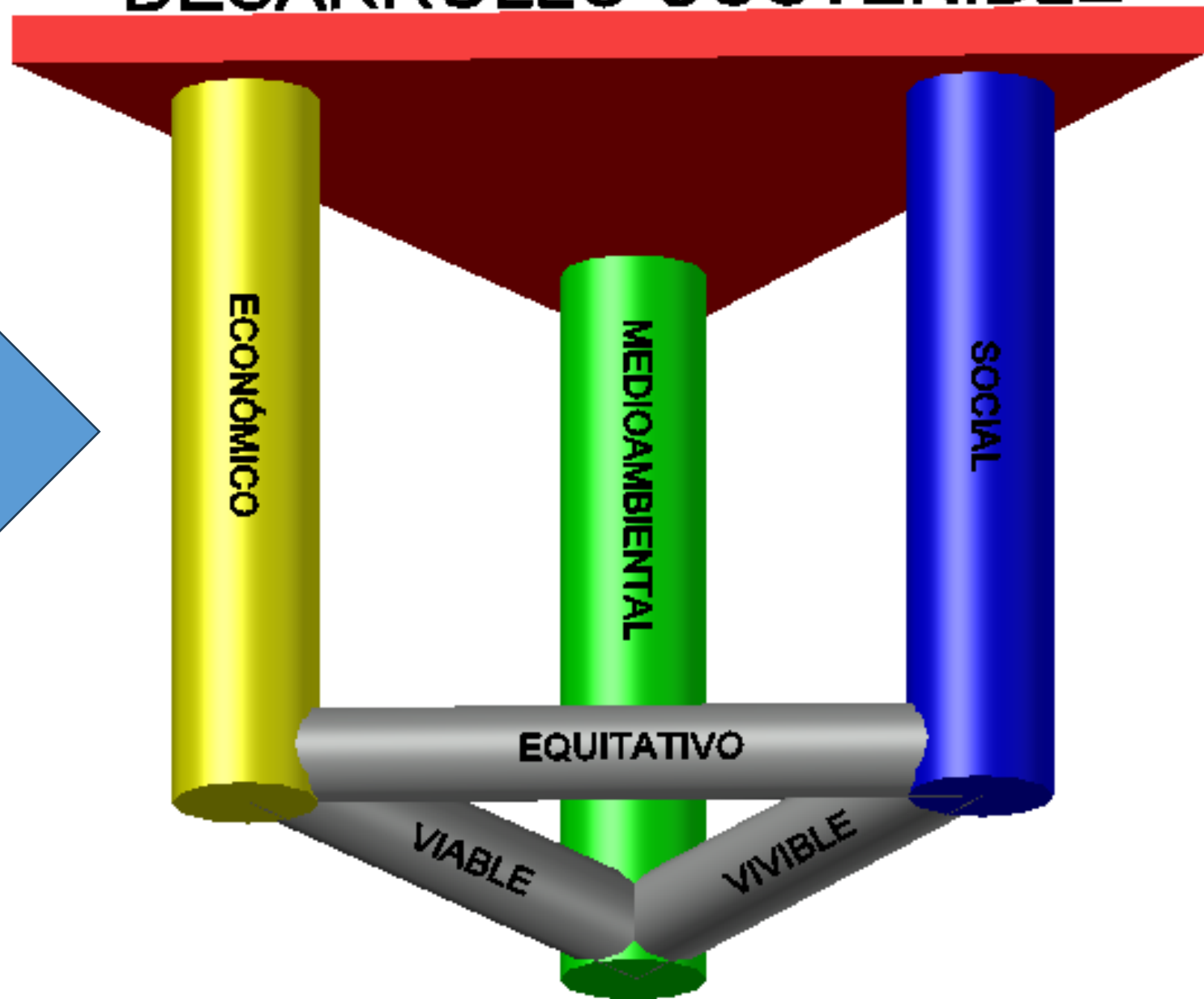
**Holdings**

Mexico	Colombia	Guatemala
Bolivia	Cameroon	Democratic Republic
Spain	El Salvador	of Congo
Ecuador	Taiwan	
Peru	Paraguay	Nicaragua

# Introducción

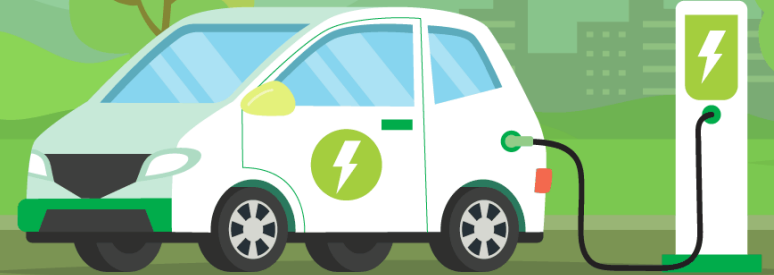


## DESARROLLO SOSTENIBLE



# Introducción

Transición  
energética

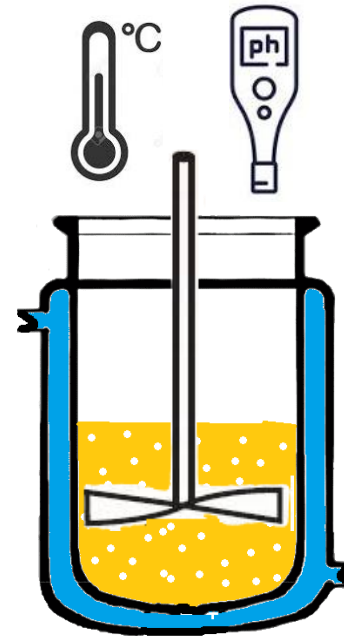


El litio como mineral estratégico

# Introducción



Reciclaje de  
baterías de litio

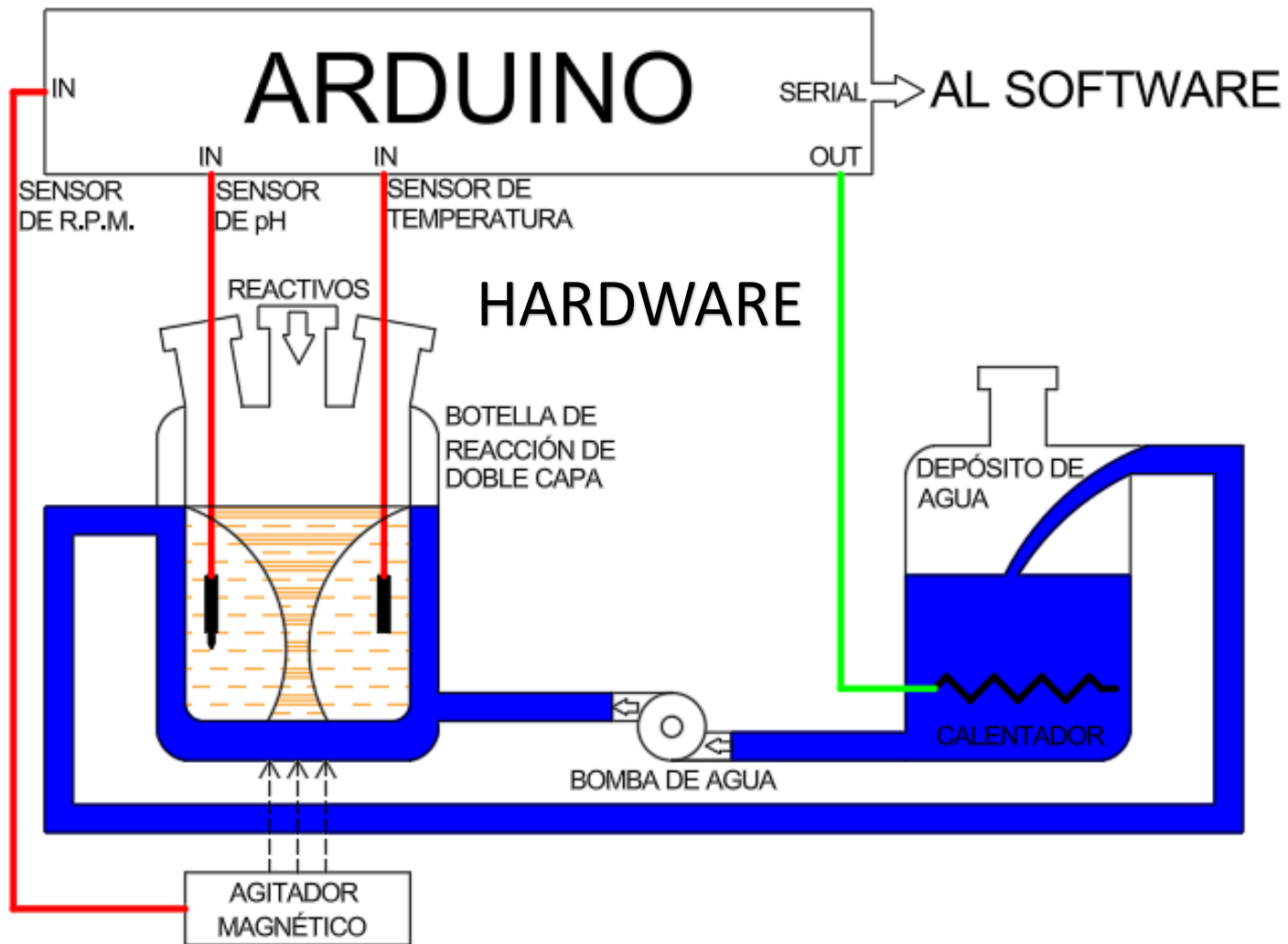


- Lixiviación  
- Procesos de Oxidación Avanzados

Perfiles de reacción

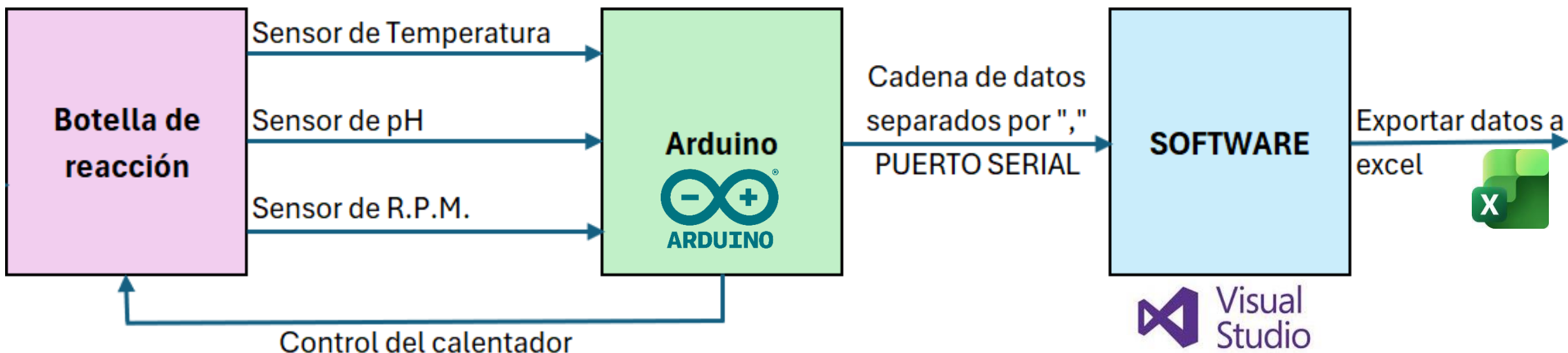


# Metodología



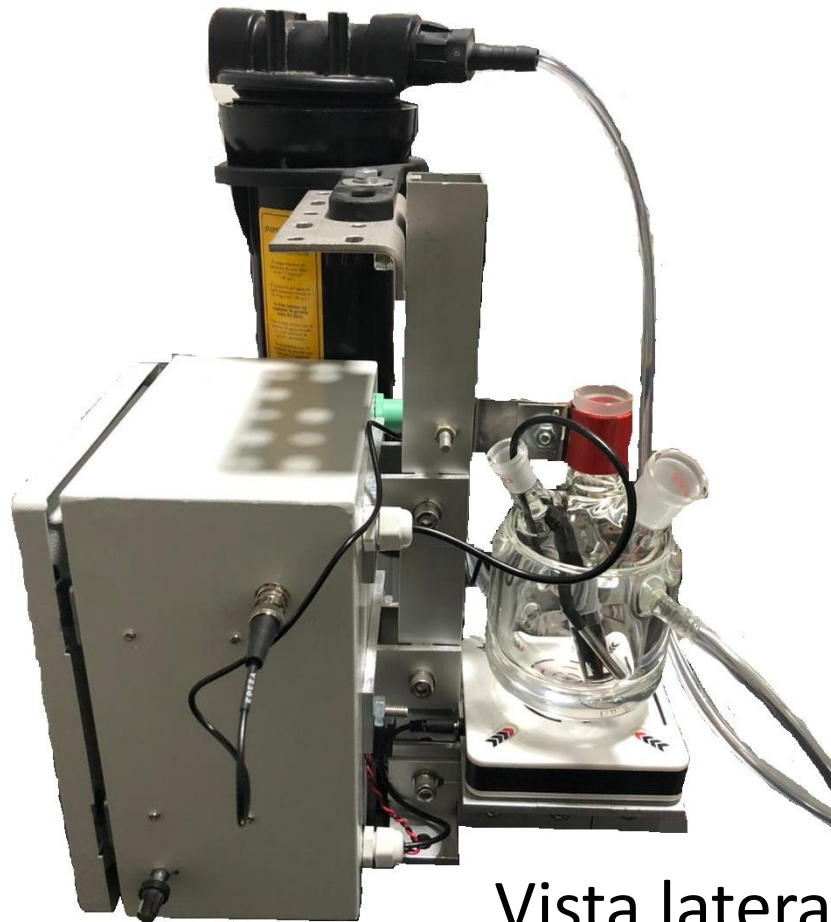
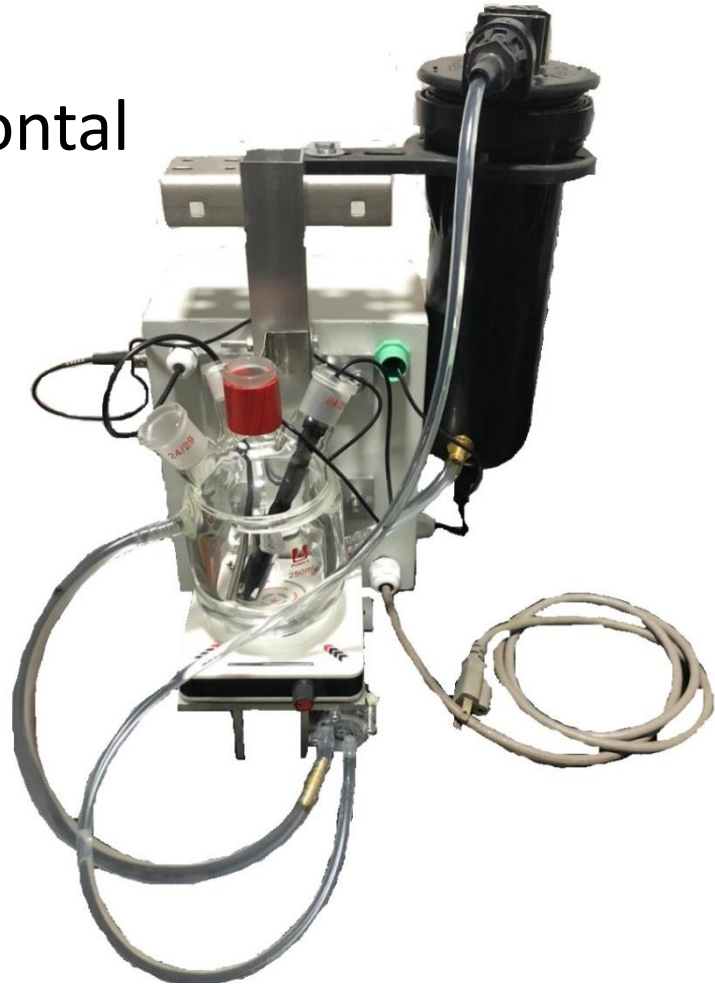
# Metodología

## BLOQUES DEL HARDWARE

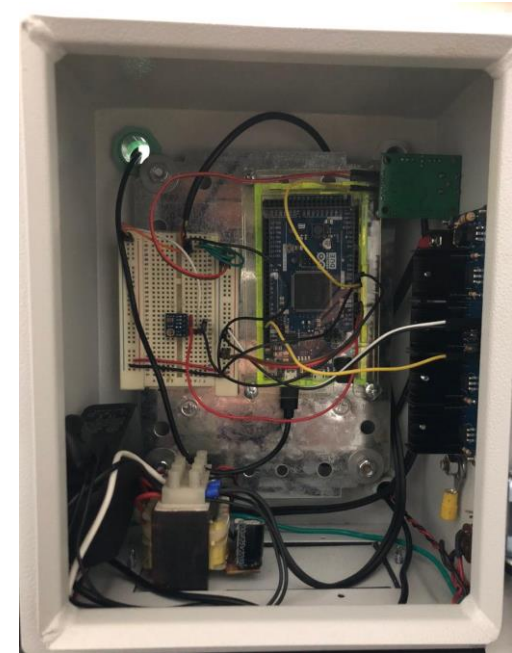


# Resultados (Hardware)

Vista frontal



Vista lateral



Interior del  
gabinete de  
control

# Resultados (Software)

Real Time Parameters

## MASS PARAMETERS:

WNCM:  g   g

g   g

Total added mass =  g

## VOLUME PARAMETERS:

Water:  ml   ml

ml   ml

ml   ml

Total added liquid =  ml

Slurry density =  g/l

# Resultados (Prueba de desempeño)

Real Time Parameters

## MASS PARAMETERS:

WNCM:  g   g

Reagent 1  g   g

Total added mass =  g

## VOLUME PARAMETERS:

Water:  ml   ml

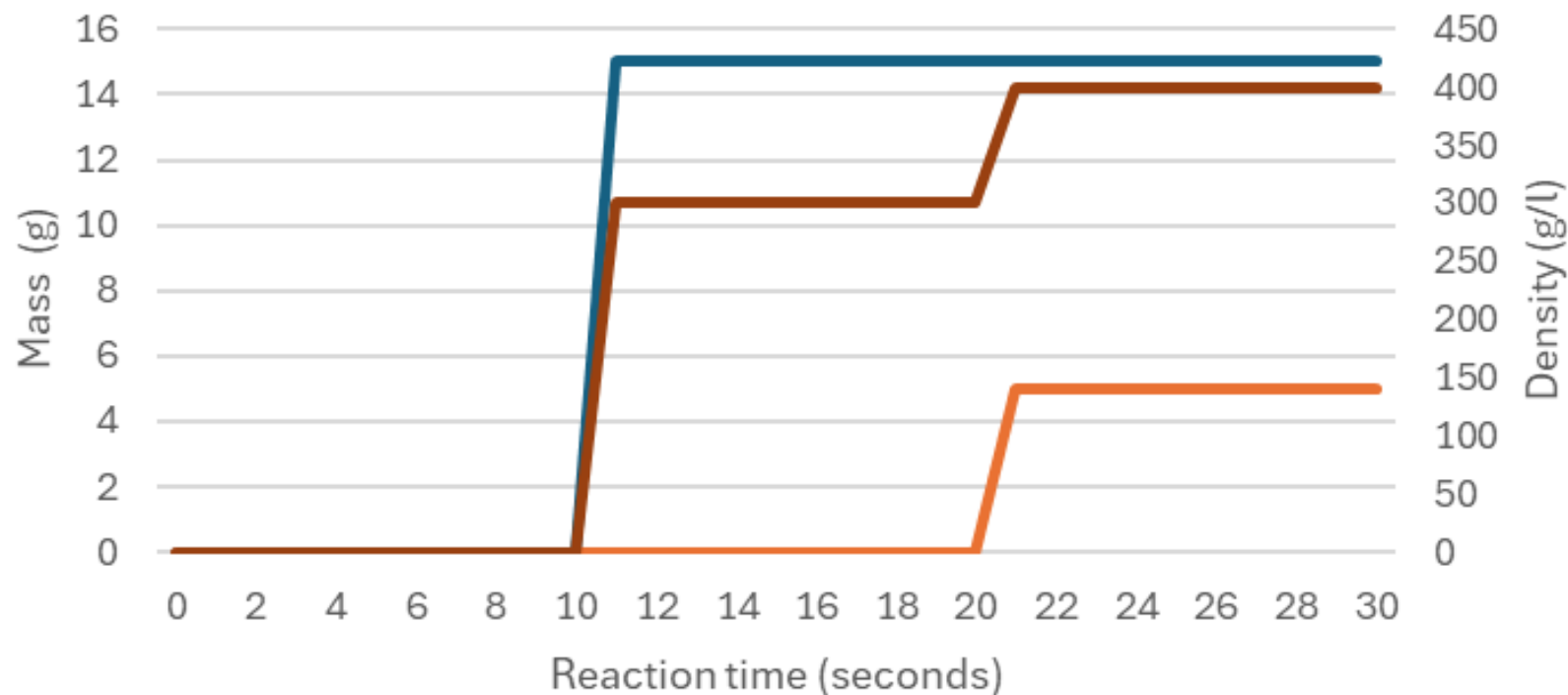
Reagent 2  ml   ml

Reagent 3  ml   ml

Total added liquid =  ml

Slurry density =  g/l

### Solids aggregation profile



— NMC cathode — Solid reagent — Slurry density

# Resultados (Prueba de desempeño)

Real Time Parameters

**MASS PARAMETERS:**

WNCM:  g   g

Reagent 1  g   g

Total added mass =  g

**VOLUME PARAMETERS:**

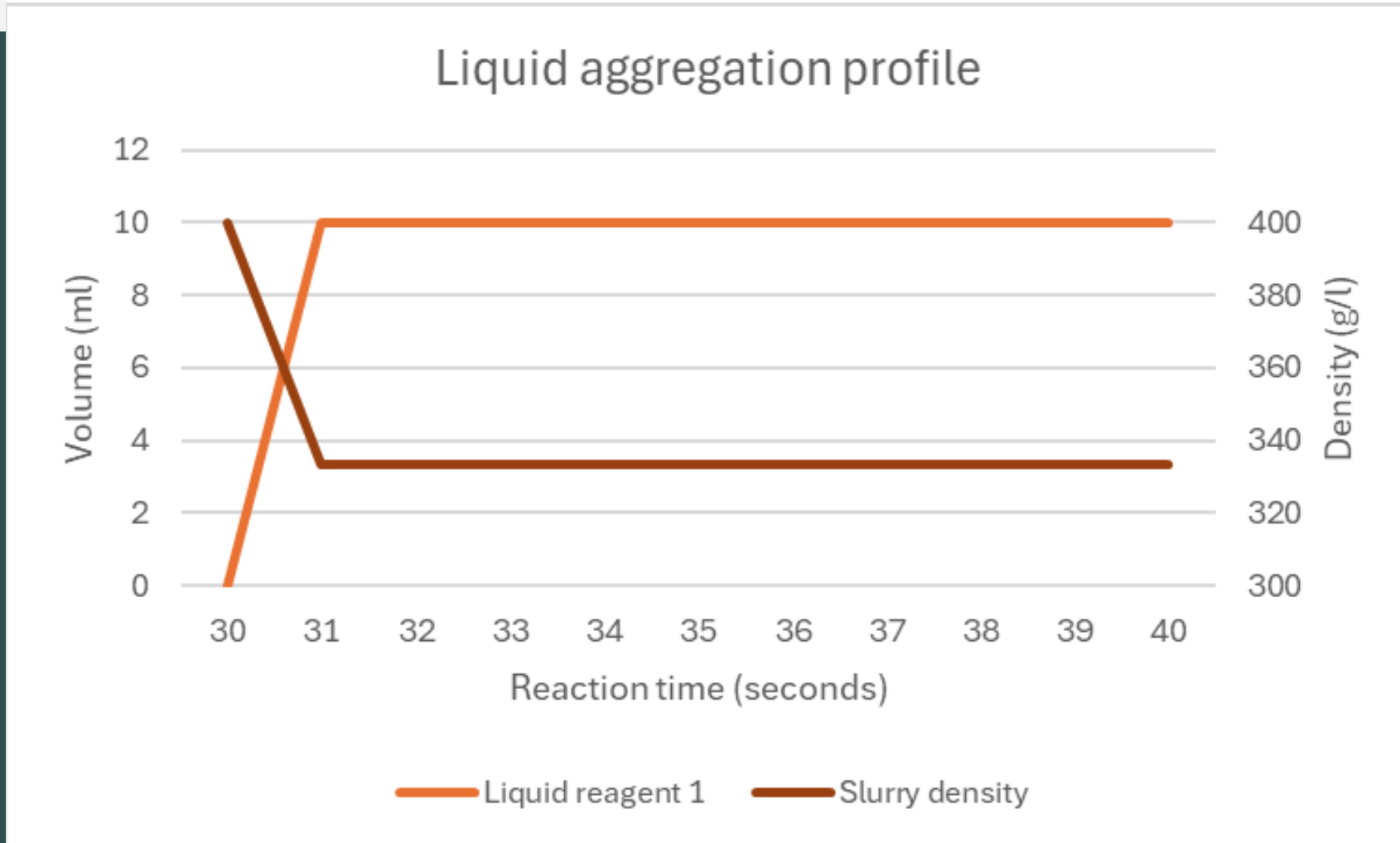
Water:  ml   ml

Reagent 2  ml   ml

Reagent 3  ml   ml

Total added liquid =  ml

Slurry density =  g/l



# Resultados

Real Time Parameters

**MASS PARAMETERS:**

WNCM:  g   g

g   g

Total added mass =  g

**VOLUME PARAMETERS:**

Water:  ml   ml

ml   ml

ml   ml

Total added liquid =  ml

Slurry density =  g/l

**HARDWARE PARAMETERS:**

Reaction temperature (°C) = ...

Stiring speed (rpm) = ...

Solution pH = ...

Reaction time (seg) = ...

Temperature

Heater status

Solution pH

	Cvo.	Date	Time	Slurry density (g/l)	Reaction temperature (°C)	Stiring speed (rpm)	Reaction time (seg)	Solution pH
*								

Link Unlink Start Stop Export Clean Get Out

# Conclusiones

- ✓ Diseño, construcción y prueba de desempeño de un reactor experimental basado en hardware y software.
- ✓ Seguimiento en tiempo real todos y cada uno de los parámetros que afectan la eficiencia durante los procesos de lixiviación.
- ✓ Datos históricos y exportación a Hoja de Cálculo.

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