INNOECA

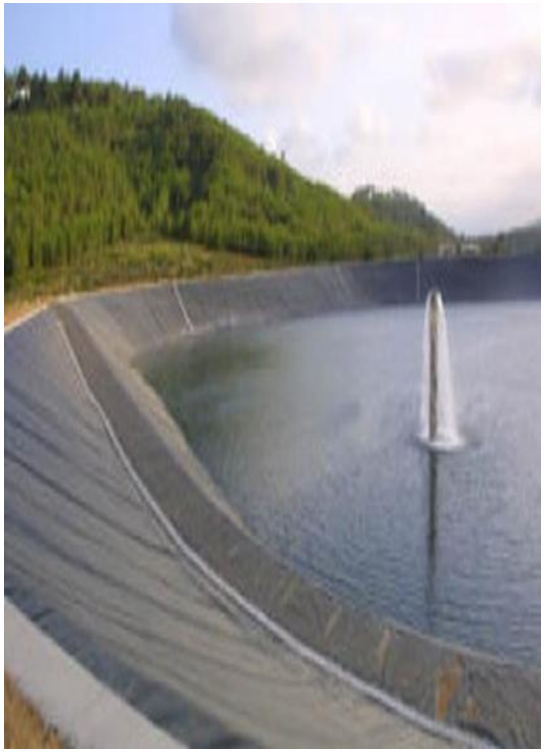
A Second Chance For Water

New paradigm: from waste to resource

Mision:
Reduce the water footprint of the primary and industrial sectors

Target:
Reuse water from agricultural and/or industrial effluents

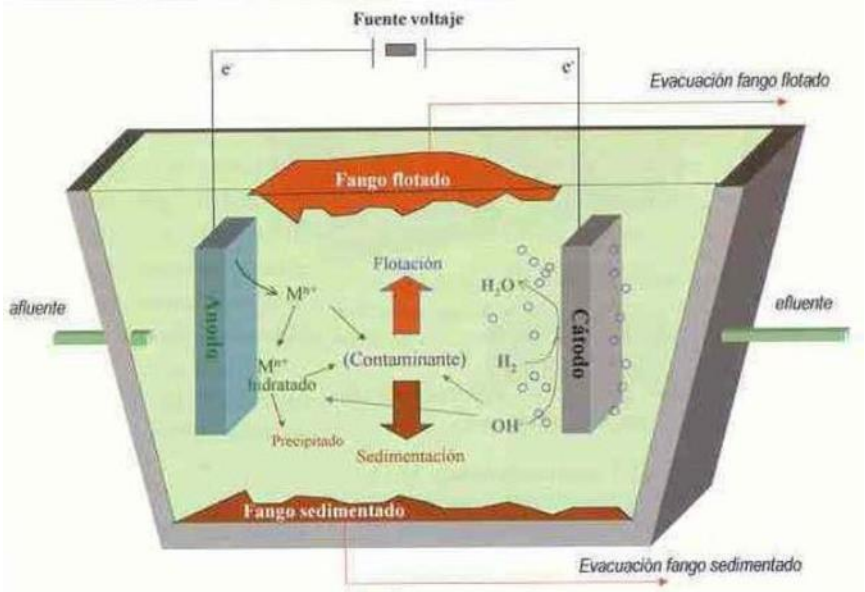
Proposed system:
Electrocoagulation+/- simultaneous electrooxidation



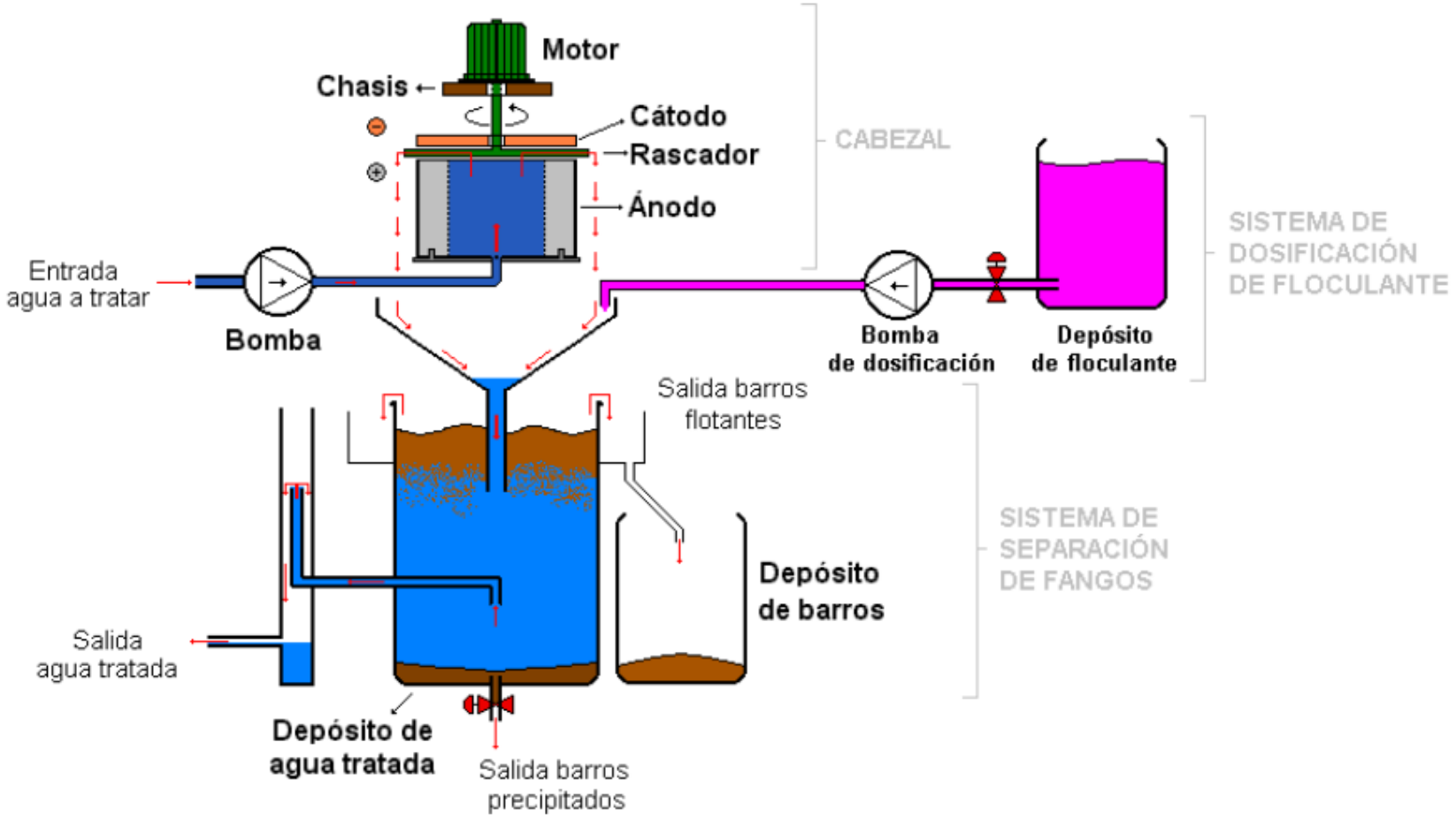
Fundamentals of advanced electrocoagulation

- **The proposed treatment system is the result of experiences with effluents with high COD, high content of Nitrogen, organic carbon and other contaminants (slurry, textile wastewater).**

  - National Patent in Spain No. 201331823; Publication number: 2 473 440 “SLURRY TREATMENT PROCEDURE”. National Patent in Spain Publication number: 2626598 “PROCEDURE AND PLANT FOR TREATMENT OF PIG SLURRY”



Fundamentals of advanced electrocoagulation



InnoECA System

Parte superior de 3 reactores en línea

Parte inferior de 3 reactores en línea

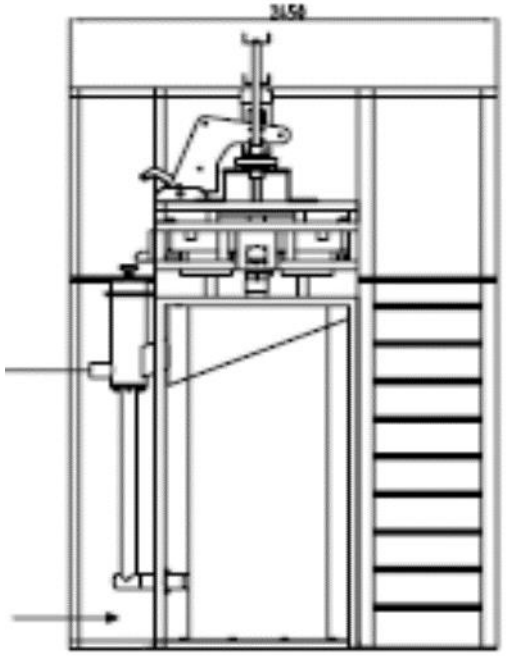
Farm slurry reception ponds

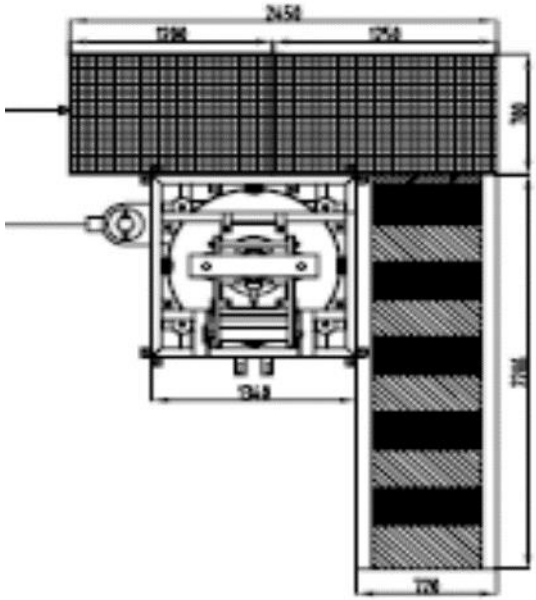
This project has received funding from the European Union's HORIZON 2020 research and innovation programme under grant agreement No. 673771

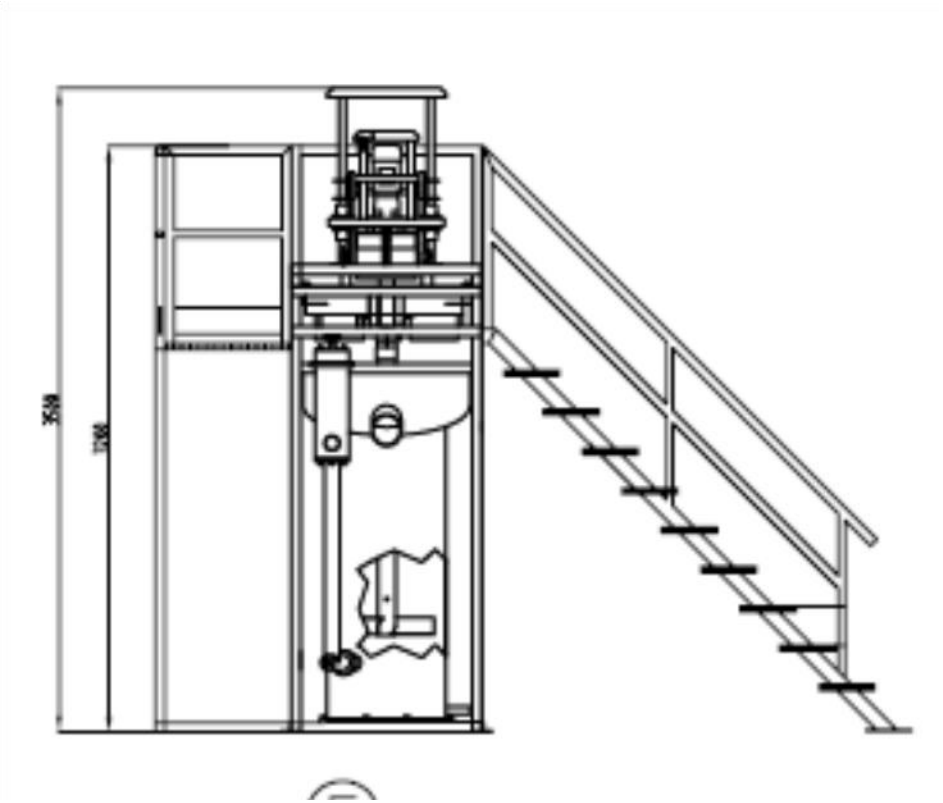
Integral Solution

InnoECA System

Minimum space requirements: InnoECA 4000

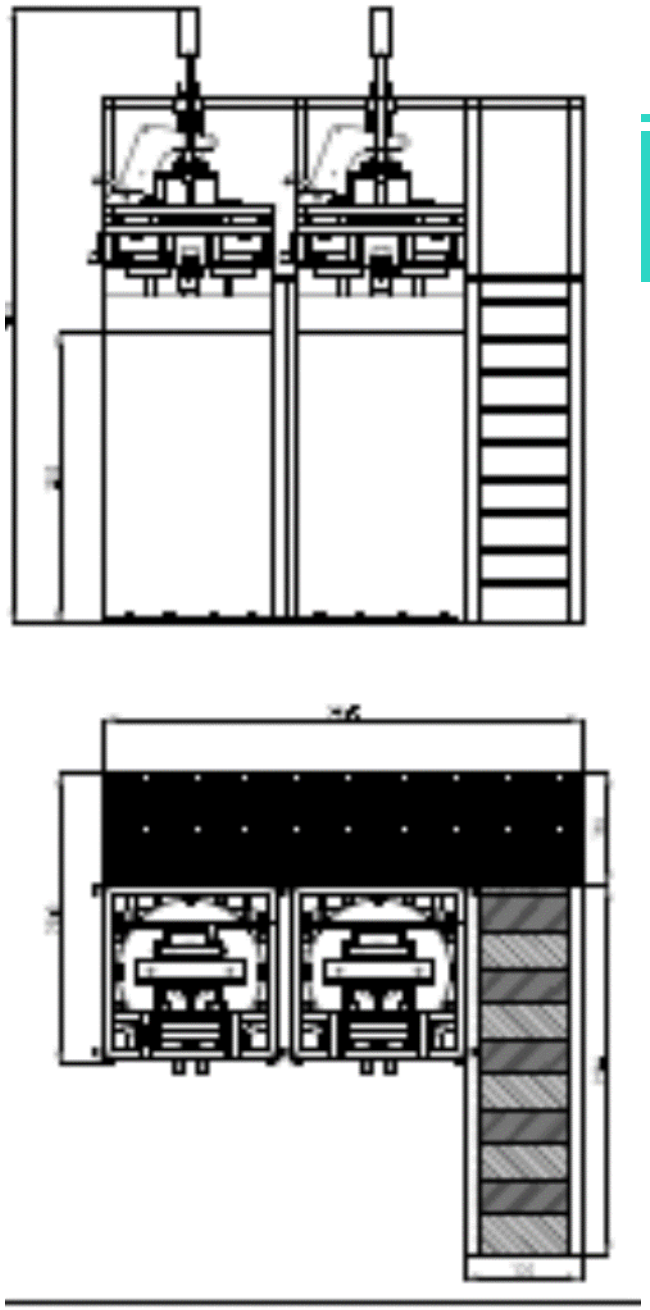


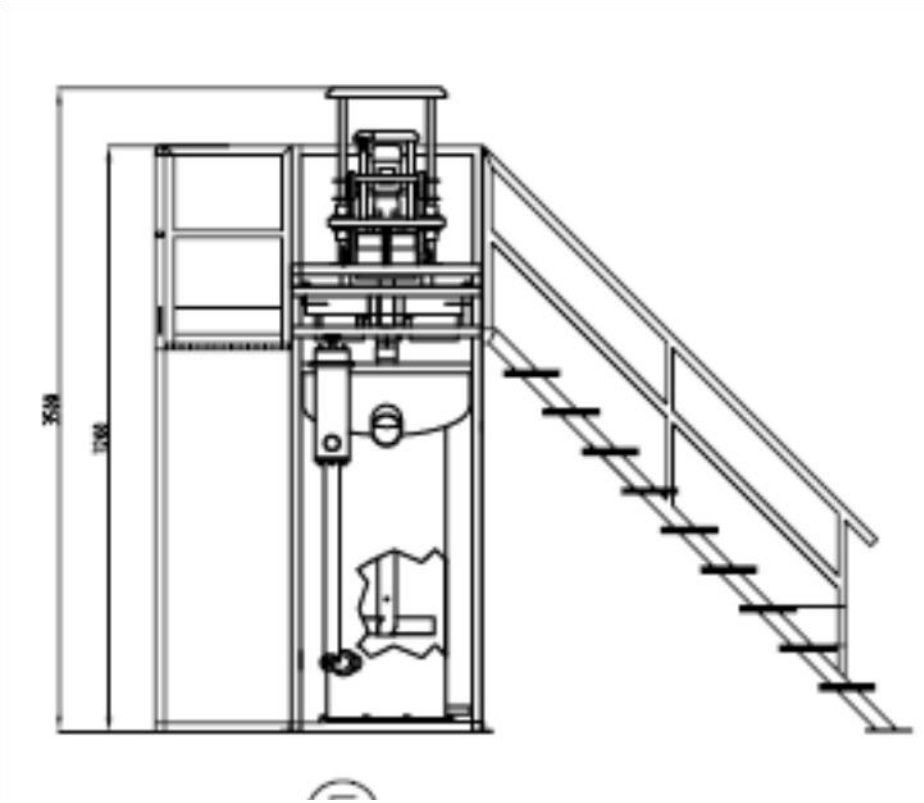




InnoECA System

Minimum space requirements: InnoECA 8000





Process Description

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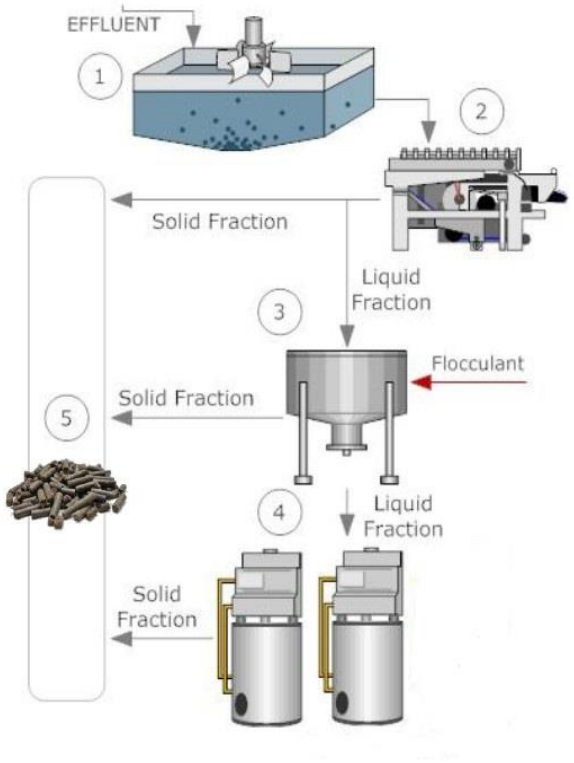
Solución Integral

InnoECA System

Recovery of regenerated waters

1. Organic matter reduction (> 90%).
2. Total & Kjedahl NITrogen (>75%)
3. Phosphorus removal (>99%, recoverable in sludge).
4. Heavy metals removal (> 99%)
5. Elimination of viruses, bacteria y parasites.
6. Elimination of odor (socially very relevant).
7. Suitable for fertirrigation as fertilizer.
8. Ideal as pretreatment of other systems (biological, osmosis).



Recovery of regenerated waters

Strategic considerations

- On a technical level: High compatibility
  - As debugging system:
    - Unique debugging system
    - Pretreatment: Biological, osmosis…
  - Synergistic with other technologies: solar.
  - Absence de “concrete”
    - Minimum structural costs
    - Small operating costs.

InnoECA System

INNOECA
A Second Chance For Water

Innovador sistema de recirculación de aguas basado en ELECTROCOAGULACIÓN / ELECTROOXIDACION

MÁXIMO CUMPLIMIENTO DE LAS DIRECTIVAS EUROPEAS

OTROS BENEFICIOS

- Subproducto Sólido para uso como fertilizante y biomasa para calefacción y energía
- Mínimo consumo eléctrico [1,5 Kw/m3]
- Eliminación costes de gestión y transporte
- Sin generación de Gases de Efecto Invernadero (GEI)
- Diseño adaptable a la capacidad de cada granja [desde 6 m3 /h hasta 20 m3 /h]
- Posibilidad de reducción de tierras exigibles por la administración

Financiación personalizada a 8 años sin adelantos ni intereses

CONTACTO
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INNOECA
A Second Chance For Water

Innovador sistema de recirculación de aguas basado en ELECTROCOAGULACIÓN / ELECTROOXIDACION

MAXIMO CUMPLIMIENTO DE LAS DIRECTIVAS EUROPEAS

OTROS BENEFICIOS

- Solución compatible y complementaria con instalaciones implantadas
- Mínimo consumo eléctrico [1,5 Kw/m3]
- Eliminación costes de gestión y transporte
- Sin generación de Gases de Efecto Invernadero (GEI)
- Posibilidad de uso mediante energías renovables
- Todo en un sistema modulable y adaptable a cualquier instalación
- Mínimos requerimientos de espacio

Financiación personalizada a 8 años sin adelantos ni intereses

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INNOECA
A Second Chance For Water

InnoECA System

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A Second Chance For Water

Innovador sistema de recirculación de aguas basado en ELECTROCOAGULACIÓN / ELECTROOXIDACION

InnoECA recicla y reutiliza el agua consumida en el proceso mediante:

- Reducción **sólidos en suspensión** superior al 90%
- Reducción **Nitrógeno Total** [Entre 80-90%]
- Eliminación del **Fósforo** (>99%)
- Eliminación de **metales pesados** (>99%)
- Posibilidad de solucionar problemas específicos.

Máximo cumplimiento directivas europeas
Posibilidad de uso mediante energías renovables
Sin generación gases efecto invernadero (GEI)

OTROS BENEFICIOS

- Solución compatible y complementaria con instalaciones implantadas
- Todo en un sistema modulable y adaptable a cualquier instalación
- Mínimo consumo eléctrico [1,5 Kw/m3]
- Mínimos requerimientos de espacio
- Automatizable y eficaz a diferentes PH, conductividad y temperatura.
- Sustituye eficazmente a los coagulantes químicos
- Remueve contaminantes y biocidas
- Muy eficaz en pretratamientos biológicos
- Reducción de costes previo a depuración biológica y/o terciario (ósmosis)
  - Por separación de lodos y gestión independiente
  - Reducción de costes al eliminar contaminantes que afectan a bacterias.
  - Reduce materiales incrustantes orgánicos
  - Facilita recuperación de fósforo para la depuración biológica

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Professional reviews

Ricardo Ruiz de España

Ricardo has a degree in Pharmacy from the Complutense University of Madrid. He also has an MBA from ICADE, where he obtained the highest qualification, and completed his training as a Technological Innovation Management Specialist from CEPADE (Polytechnic University of Madrid).He has more than 20 years of experience as a senior manager of multinationals, generally in the areas of marketing and Commercial Management. He is currently managing partner of pyrocatalytica and responsible for the financing area.

PYROCATALYTICA

Professional reviews

Ignacio Tobaruela

Higher Naval Engineer from the Higher Technical School of Naval Engineers of the Polytechnic University of Madrid. Studies completed in June 1990 in the specialty of Marine Machines, Nuclear Safety.He has extensive professional experience in private companies and consultants in water, energy, and the environment, which culminates with the completion of patents No.201331823 and No. 2473440 as well as National Patent application in Spain No. 201600326

PYROCATALYTICA

Professional reviews

Hernán Gil Bernal

Professional chemist with experience in the areas of Scientific Research, Quality Control, Laboratory Analysis and Customer Service, He is currently a business development manager of Pyrocatalytica for new business opportunities in markets on drinking and wastewater treatment, activated carbon and biochar production and activation, Electrochemical applied, focusing on strategic planning, scientific partnerships management with universities and technological institutes to facilitate Pyrocatalytica to growth and revenue increase.

PYROCATALYTICA

Professional reviews

Companies

- NIT
- HERTA SECURITY
- INFANTIUM
- EUROGAN
- BSQ SOLAR
- ALPHASIP
- THE GLOBAL COIN
- SICNOVA
- VERTECH [FRANCE]
- WATCHITY
- CAMELINA COMPANY
- FACEPHI BIOMETRICA
- IKASPLAY
- APTUS BIOTEC
- CALIDAD PASCUAL
- BRECA HEALTH CARE
- GRAPHENE UP
- ANSWARETECH

Innovation and technological entities

- CSIC
- AINIA
- UNIBO [ITALY]
- CRAIFIELD UNIVERSITY [UK]
- CITEVE [PORTUGAL]
- CNIO
- CNIC
- CIC bioGUNE
- ICN2…

Contact information

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