

InPro Systems Limited



ADS & NSD Partners Group
Action - Development - Support

Cost effective and innovative environmental solutions

InPro Systems Limited

- New player in the environmental market
- Dedicated and highly experienced individuals and specialist suppliers
- Supply a broad range of products and services
- Provide our customers with choice over the scope and detail of potential solutions from a single source
- We are a ***Solution Provider*** rather than a product supplier

Office Facilities



InPro Systems Mission Statement

“Our aim is to provide solutions and services combined with sales and rentals that will allow our customers to make the choices that best fit with their operational and financial requirements.”



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Our Business

Our Business Strategy

- Assist organisations, industry and municipalities in meeting the increasing challenges in the areas of *reclamation, remediation and environmental protection*
- Work closely with management and field engineers to *provide a sustainable and environmentally friendly solution for decontamination, effluent treatment, waste valorisation and hydrocarbon/crude oil recovery.*
- *Innovative and cost effective solutions*, helping our customers meet their environmental objectives and legislative demands while protecting their bottom line.

Our Business

OIL AND GAS

Clean-up and hydrocarbon recovery from waste streams.

Modular/scalable systems to treat upstream and downstream wastes and recover hydrocarbons, including: -



Our Business

OIL AND GAS

Clean-up and hydrocarbon recovery from waste streams.

- Oil-based mud drill cuttings
- Produced water



Cuttings Shaker House

Our Business

OIL AND GAS

Clean-up and hydrocarbon recovery from waste streams.

- Tank bottom and interceptor sludges
- Waste lagoons
- Well-sites



Crude Oil Un-Lined Lagoon in Desert

Our Business

DECONTAMINATION

Soil treatment and
wastewater
decontamination

Innovative systems,
which combine
physical/mechanical
plant, electrochemistry
and chemistry to
separate and recover
contaminants from: -



Coal Tar Contaminated Soil at Old Gasworks

Our Business

DECONTAMINATION

Soil treatment and
wastewater
decontamination

- Sand and soil
- Mining spoil and
tailings



Crude Oil Contaminated Sand Piles

Our Business

DECONTAMINATION

Soil treatment and
wastewater
decontamination

■ Industrial Waste

■ Wastewater and
effluent



Landfill Leachate

Our Business

BIOREMEDIATION

Soil, water and concrete.

New generation of biostimulant products, which accelerate natural biodegradation processes for the remediation of soil, water and concrete to remove: -



Bioremediation of Contaminated Soil in Windrows

Our Business

BIOREMEDIATION

Soil, water and concrete.

- Oils and hydrocarbons
- Bitumen and coal tar residues
- Organic and halogenated solvents



Removal of Heavy Sludges from Crude Oil Storage Tanks

Our Business

CHEMICAL PRODUCTS

Ultra-green and high performance chemicals

- Industrial and commercial cleaners, including rubber deposit and tyre mark removers
- Specialist cleaners including non-hazardous paint and graffiti removers (NMP-free, benzyl alcohol-free)



Removal of Rubber Tyre Marks at Major UK Retailers Distribution Centre

Our Business

CHEMICAL PRODUCTS

Ultra-green and high performance chemicals

- Engineering degreasers and descalers
- High performance multi-biocides and biocide-cleaners



Control of VOC Emissions During Cleaning of Crude Oil Storage Tanks

Our Market Sectors

- Chemical Production
- Distilleries, Breweries, Wineries
- Engineering & Power Generation
- Food Processing
- Marine & Transport
- Metals, Mineral Extraction/Processing
- Mining & Minerals
- Oil & Gas (Upstream & Downstream)
- Soil Remediation
- Waste Management
- Water Treatment and Municipal Wastewater and Effluent Treatment



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Our Solutions

Typical Solutions

High performance industrial chemicals and sustainable, environment friendly solutions for decontamination, effluent treatment, waste valorisation and hydrocarbon/crude oil recovery

- ***Electrocoagulation and Advanced Electrochemical Oxidation***
- ***Cavitation Scrubbing of Solids***, Stripping Gases from Liquids and Other Applications
- ***Natural Biostimulants*** and Their Application to Bioremediation and Wastewater Treatment
- ***Ultra Green and High Performance Chemicals***

Electrocoagulation Water Treatment

Overview

- Physiochemical treatment of process water, etc., to *remove heavy metal ions (including radionuclides), arsenic, suspended solids, emulsified hydrocarbons*
- Originally developed in 1906 to treat bilge water from ships
- *Produces smaller amounts of denser, much less hydrated flocs* than conventional chemical flocculation
- Cost to treat water varies from *£25.00 per 1m3 down to £0.25 per 1m3 depending upon pollutants*, volumes to be treated and location of operation

Advantages of InPro Systems' EC System

- Uses *hydrodynamic design of electrocoagulation cell* to optimise water flow through cell
- *Optimised electrochemistry*
- *Upward current cells* remove hydrogen and oxygen bubbles to flotation unit and *prevent precipitate build up*



Advantages of InPro Systems' EC System

- *No high voltages*, which can cause cell failure
- Control system *programmed to prevent plate passivation*
- Minimises use of chemicals
- Air injection to enhance flocculation + sedimentation processes
- Cells may be used within existing treatment works



Oil Platform Wastewater Treated with Electrocoagulation



Gas Bubble and Floc Production in Flotation/Sedimentation Tanks

Cavitation Scrubbing of Solids

- InPro Systems' cavitation scrubbing systems are *designed to maximise generation of hydrodynamic cavitation* using water pumped at high pressure
- **Applications** for cavitation scrubbing systems:
 - **Soil washing** to separate and recover hydrocarbons from heavily contaminated soil and sand, e.g. at old oil refineries and storage depots, engineering works, former gasworks, after a crude oil spill offshore.
 - **Cleaning and recovering base oil** from exploration/production well drill cuttings separated from *oil-based drilling muds*.
 - **Separation of fine particulates** from aggregates in clay extraction

Cavitation Scrubbing of Solids

- InPro Systems' cavitation scrubbing systems contain a number of *innovative design features and benefits* to ensure effective and continuous operation:
 - *Multiple cavitation stages* in series to ensure complete removal of heavy hydrocarbons, bitumen and tars from solids.
 - *Multiple oil/hydrocarbon recovery stages.*
 - Water/process solution treatment plant (Electrocoagulation) to facilitate *water re-use within process*
 - Sub-systems to *drain and dry cleaned solids* and recycle collected water/process solution residues.

Biodegradation

- The process of biodegradation is used to:
 - Clean-up and remove organic pollutants, such as hydrocarbons from soil
 - Remove organic and ammoniac compounds from wastewater and effluent in treatment plant.



Biostimulants

- InPro Systems' products used in bioremediation, wastewater and effluent treatment include specific natural biostimulant molecules, which *accelerate the rate of biodegradation of organic pollutants*
- In addition to their proven powerful biostimulant properties, the molecules also *catalyse cell defence mechanisms within micro-organisms*. This enables the micro-organisms to detoxify and utilise harmful organic molecules as food



Bioremediation

- Bioremediation is the use of biodegradation to clean-up organic pollution:
 - **Land** – hydrocarbons and organic solvents from oil-spills, contaminated ground at old oil refineries and storage/distribution depots, engineering works, power stations, railway depots, former gasworks, etc.
 - **Water** – oil-spills on surface water, contamination of aquifers by hydrocarbons and organic compounds
 - **Concrete floors, docks, tank bunds** – oil and hydrocarbon contamination at engineering works, ports, oil refineries and storage/distribution depots

Thank You

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