Cynergi Group is focused on fuel saving and low emission technology, that features a proprietary nanosize emulsion technology, chemical additives and oxyhydrogen generation technology for a broad range of liquid fuel products.

Nano emulsified fuels are ultrastable mixtures of water, fuel and additives that can be less expensive and cleaner to combust than the traditional fuels they replace.
Cynergi Group
solutions & technologies
for consumption and emission reduction

Cynergi holds patents rights for the most advanced emulsification technology, a broad range of dedicated additives and the most performant oxyhydrogen generator in the world.

The vision of nanotechnology group Cynergi Holding S.A., is to find a family of nanomaterials, technologies and synthesis techniques for accelerated production of innovative, advanced and affordable products in the following areas: fuels treatment, fuel additives and lubricant additives.
**PRODUCTS**

Cynergi provides plants according to the strictest international standards in force, like GOST, ASTM, INMETRO, CSA, KOSHA etc. By working with top certification bodies, Cynergi is also able to provide plants and systems that are CE, CE-PED and ATEX certified.

**Cynergi, the most advanced technology in fuel treatment and combustion**

Producing an emulsion involves both chemical and mechanical operations. The formulation of an additive must take into account the need to preserve the stability, restore lubricity and flash point in both storage and injection. The mechanical operation involved in producing nano emulsified fuel is that of high-value shearing and hydrodynamic cavitation operation.

The proper amounts of water, additive and fuel must be metered into the shearing volume to preserve the final emulsified fuel product’s homogeneity. Computer-controlled fuel blending units are used to produce light and heavy fuel emulsions.

Oxy-Hydrogen gas is ultrapure water separated into its two constituents (Hydrogen and Oxygen) by an advanced alkaline pulsed electrolysis process in a way that allows them to be mixed under pressure and then be burned with fuel or fuel emulsion. The process results in a gas containing ionic hydrogen and oxygen. Existing combustion technology can be boosted from low efficiency to extremely high efficiencies by injecting Oxy-Hydrogen gas on internal combustion engines and boilers.

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**CERTIFICATIONS & QUALITY**

Cynergi Group’s goal is to keep work safe and effective, offering high-quality products and services by respecting the customers timing.

Processes and controls shall be implemented so that tasks are performed properly the first time. Products like services shall meet the agreement requirements.

Quality, customer satisfaction, constant improvement, maintaining the quality of the management system and compliance with customer and rules requirements, are every employee’s personal responsibility.

**Technologies covered by worldwide patents**
Cynergi Group provides comprehensive solutions and services in the fields of fuel, additives and combustion by utilizing a wide range of proprietary devices, products and technologies for reducing both fuel consumption and emissions.

**Cyntech fuel emulsion:** A cost-effective alternative for treatment of diesel, heavy fuel oil and all other liquid fuels which allows to reduce the energy-unit fuel costs and reduce drastically the emissions.

Cynergi’s process uses ultrapure water and proprietary additives to produce nano-emulsion, a special fuel treatment, usable directly on

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**INNOVATION**

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**PROPRIETARY FEATURES & BENEFITS:**

- Pre-Treatment with Hydrodynamic cracking of fuel to reduce molecular length and viscosity.
- OxyHydrogen Cynergas to improve fuel efficiency and drastically reduce the unburned.
- Nano Emulsion made with ultrapure water and special Cyntech Additives to reduce consumption and emissions.
- Injection Nozzle to provide the fuel micronization for the ultimate combustion reaction in boilers application.
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Cynergi’s process uses ultrapure water and proprietary additives to produce nano-emulsion, a special fuel treatment, usable directly on the energy-unit fuel costs and reduce drastically the emissions. Cyntech fuel emulsion is a cost-effective alternative for treatment of diesel, heavy fuel oil and all other liquid fuels which allows to reduce

Cyntech Emulsifier and produce on-site the nano emulsion. In the internal combustion generators, Cynergi uses also the injection of Oxyhydrogen gas which permits to increase the amount of water in the emulsion avoiding the creation of unburned, increasing the engine performance.

Internal combustion engines, turbines and boilers which use HFO, Diesel, vegetal oil or animal fat oil, now are able to treat their fuels with Cyntech Emulsifier and produce on-site the nano emulsion.

In the internal combustion generators, Cynergi uses also the injection of Oxyhydrogen gas which permits to increase the amount of water in the emulsion avoiding the creation of unburned, increasing the engine performance.
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**INNOVATION**

**PROPRIETARY FEATURES & BENEFITS:**
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In the internal combustion generators, Cynergi uses also the injection of Oxyhydrogen gas and produce on-site the nano emulsion. Internal combustion engines, turbines and boilers which use HFO, Diesel, vegetal oil or animal fat oil, now are able to treat their fuels with Cynergi fuel emulsion and special Cyntech™ additives focus on improving the operational efficiency of steam boilers by offering ready-made solutions to reduce fuel consumption and emissions by increasing combustion efficiency and mitigating ash generation, corrosion and smokes production.

International Marine Organization (IMO) Tier III emissions controls for nitrogen oxides (NOx) ship emissions, will enter into force beginning 2016. NOx Emissions from diesel marine engines must be reduced by 80% over Tier I levels. To meet these requirements, Cyntech ™ Emulsion fuel system in conjunction with other NOx-reducing technologies will enable ships to meet Tier III controls effectively.

**SAVING**

- **FUEL REDUCTION**
- **EMISSION REDUCTION**

**APPLICATIONS**

Low emission and high energy efficiency are obtained using combined technologies: oxyhydrogen injection, hydrodynamic cavitation and nano emulsion.

**CEMENT PLANT**

Cynergi fuel emulsion and special Cyntech™ additives focus on improving the operational efficiency of Cement Plants by offering ready-made solutions to reduce fuel consumption and emissions by increasing combustion efficiency and mitigating ash generation, corrosion and smokes production, reaching the 1450°C with optimal condition for a perfect Clinker.

**VEHICLES**

Due to Diesel fuel, carbon deposits accumulation and incomplete fuel combustion creates significant incombusts and lubricating oil contamination. The results is fuel wasting and significant increase of maintenance costs.

**ENGINE GENERATOR**

Due to the continuous use of the engines in generators, carbon deposits accumulations and incomplete fuel combustion creates significant waste and lubricating oil contamination. This causes an estimated 20 percent increase in wasted fuel costs. Our optimized combustion reaction actually cleans the engine, increases its performances and reduces maintenance needs.

**BOILERS**

Cynergi fuel emulsion and special Cyntech™ additives focus on improving the operational efficiency of steam boilers by offering ready-made solutions to reduce fuel consumption and emissions by increasing combustion efficiency and mitigating ash generation, corrosion and smokes production.

**TURBINES**

Due to increase global energy demand and a relatively limited supply of available fuel, power producers are seeking alternative fuel sources to generate power, including crude and residual oils, also commonly named heavy fuel oils.

**MARINE ENGINES**

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more applications @ www.cynergi.eu
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