高速微電腦節油控制系統

High-speed Microcomputer Oil Saving Control System

環保
Eco-efficient

安全
Safe

可靠
Reliable

節油
Fuel consuming-efficient

統旺科技
TOVONN TECHNOLOGY CORPORATION

UGEnergy
優淨能源科技股份有限公司

專利環能燃料簡介

本公司從研發到生產製造延聘化工、油品、機械、環工、鍋爐以及空污等，各領域的專家學者進行燃料重油研究，並利用本公司自行研發生產專利機械奈米科技攪拌機、將專利化工產品、節燃破硫劑、水煤能及破水劑及燃料重油進行均質攪拌製造出環能燃料重油。同時，本公司並可依環能燃料重油燃燒過程中的化學變化作為分析依據規劃出各產業界最適用環能燃料重油以達環保節能及提升各產業競爭之效益。本公司經營方式不同於一般節能公司使用添加劑或增設污染防治設備增加成本設備，以達到有限節能環保效益，而是以業者原有購油成本，無需增加任何成本及設備，僅需本公司環能技術即可製造完全燃燒之高效能燃料油，以協助業者提升市場競爭力，創造雙贏的經濟效應。

Introduction to patented Eco-efficient Energy Saving Fuel

Our company conducts researches and manufacture related products, employing chemical oil, quality control,mechanics, environmental construction, boiler and spatial dirt etc related experts to carry out heavy fuel oil in depth research. Meanwhile, we have self designed and manufactured a patented Nanotechnology Blender.

Using this blender to blend well patented chemical products, fuel efficient surfer breaking agent, coal water slurry,and Heavy Fuel Oil, we can manufacture Eco-efficient Heavy Fuel Oil (HFO).Meanwhile, our company is able to examine and analyze the chemical changes occurred during the oil combustion. Using the results to manufacture the best fitting eco-efficient energy saving fuel heavy oil among the industrial market, making an individualindustry competitively effective and preserve both earth as well as energy.

Other companies use the chemical additives or installing pollution control facility to be efficient in energyconservation and environmental protection; however, it raises the costs. Our company manages to be differentfrom other energy efficientcompanies. We are able to manufacture completely combustible highly efficient fueloil by applying our featured technologies on environmental protection and energy conservation without addingany additional costs and facility, and to assist other manufacturers to be more competitive on the market in no time creating a win-win economical situation.

乳化劑燃燒的技術

乳化燃燒是個複雜的過程，對於節能降污的原理較為成熟的解釋是燃料油催化劑燃燒中存在的“微爆”現象和水煤氣反應，也是以燃燒的物理過程和化學過程來解釋。乳化油燃燒過程的物理作用即所謂的”微爆”作用。油包水型分子基團，油是連續向，水是分散向。由於油的沸點比水高，受熱後水總是先達到沸點而蒸發或沸騰。當油滴中的壓力超過油的表面張力及環境壓力之和時，水蒸氣將衝破油膜的阻力使油滴表面發生爆炸，形成更細小的油滴， 這就是所說的微爆或稱二次霧化。爆炸後的細小油滴與空氣更加充分混合， 油液燃燒的更完全，使燃油爐及鍋爐達到節能之效果。化學作用即水煤氣反應。在高溫條件下，部份水分子與未完全燃燒熾熱炭粒發生水煤氣反應，形成可燃性氣體，反應式如下：

Emulsifier Burning Technic

Emulsifying combustion is a complex process. A maturer explanation to energy saving pollution reducing principleis that there are micro explosions and water-gas reaction taking place within the oil catalyst combustion. In a physical and chemical perspective to explain the emulsified oil combustion effects, it is known as micro explosion.

Oil hydrated bases groups and the gas is continuous, water is dispersing. The boiling point of oil is higher than water. After being heated, water is always first to reach the boiling point causing evaporation or the ebullition.When the pressure in the oil is higher than the surface tension pressure and environmental pressure, the steam will break through the oil film and cause oil surface to have explosions generating even smaller oil drops. This is the so-called micro explosion or second atomization. After the explosion, the smaller oil drops are able to mix better with the air causing oil drops to combust completely making it possible to be energy efficient for the boilers and oil burner.

The water-gas reaction is a chemical reaction taking place under high temperature environment. Partial molecules react with highly heated carbon particles which were not completely combusted and cause water-gas reaction forming ignitable gas. Its chemical equation is as follows.

C(固solid)$+H_2O$(液liquid)$\rightarrow H_2$(氣gas)$+CO$(氣) ▲ H=131.38KJ

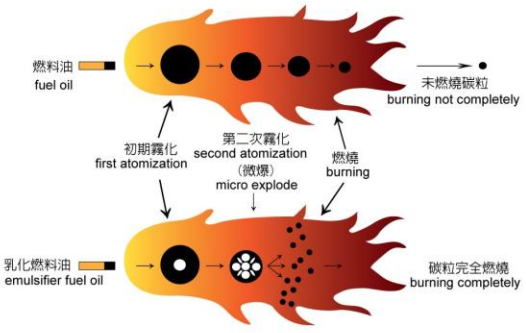
$H2$(氣gas)$+1/2O_2$(氣gas)$\rightarrow H_2O$ ▲ H=-241.84KJ

CO(氣gas)$+1/2O_2$(氣gas)$\rightarrow CO_2$ ▲ H=-283.01KJ

上方三式表示水參加反應得結果，
三方程式等效於：

C(固)$+O_2$(氣)$\rightarrow CO_2$(氣) ▲ H=-393.46KJ

Three formulas shows the results of adding water as top column shows
And the three formulas are equals to
C(solid)+O2(gas)=CO2(gas)



使用環能重油成本效益評估

The benefit estimate of --
The environmental protection energy conservation heavy fuel oil

- 乳化重油成份體積配方 The recipe of the emulsified heavy oil

重量（kg）Kilograms		單價（元/kg）Unit-price (NTD/kg)	合 計（元）Amout (NTD)
重油（公升）Heavy Oil (litre)	1000	17.85	17850
乳化劑（公升）Emulsifier (litre)	3	510	1530
Water (litre) 水（公升）	200	0.025	5
合 計 Amout	1127.546		19385
重油單價以中油報價為主 Heavy oil of unit-price is determined by the CPC`s quotation.			

- 在產生等熱值的條件下，所需要之重油重量1127.546 KG
- 在產生等熱值的條件下，所需要之重油體積1125.594公升
- 第2步驟使用環能重油之燃料費用19,385元
- 第3步驟使用環能重油之燃料費用21,475元
- **在產生等熱值的條件下，使用「環能重油1203公升」較使用「重油」可節省燃料費用2,090元**
- Under the same situation of producing the same Calorific value, it take the consumption of the the heavy oil 1127.546KGS
- Under the same situation of producing the same Calorific value, it take the consumption of the the heavy oil 1125.59 liter
- Fuel expense is NT$19,385 while adapting the environmental protection energy conservation heavy fuel oil during the step 2.
- Fuel expense is NT$21,475 while adapting the environmental protection energy conservation heavy fuel oil during the step 3.
- **Under the same situation of producing the same Calorific value,it save fuel expense NT$2,090 to adapt the 1203 liters of the nvironmental protection energy conservation heavy fuel oil than "heavy oil".**

節省 燃料成本10.8%
Save the Fuel expense to 10.8%

節省 空污防治費3.5%
save the air pollution control fee to 3.5%

節省 燃料設備維護費 2.5%
save the Equipments Maintenance fee 2.5%

適用範圍 Using range

本公司的高效能環能添加劑可用於各類工業窯爐 鍋爐（造紙、化工、鋼鐵、冶金、陶瓷、玻璃產業及輪船電力發電等燃料使用的重油單位。

Our high efficiency The environme ial furnace /Fuel Burner(paper industry Chemical Industry iron & steel industrymetallurgy industry ceramics industry glass industry streamship and electrical industry which using the heavy oil as it's power source.

特色說明

經由“UGE高速微電腦節油控制系統”所調配出的環保節能重油與傳統的乳化重油相異點如下:

- 鍋爐原設備無需任何修改可直接使用，不必投入額外成本。
- 環能燃料重油為完成乳化重油無雜質沉澱、油嘴不堵可減少停工機率。
- 環能燃料重油穩定性好、安全性高燃燒時產生二次霧化及微爆等反應可完全燃燒提高鍋爐燃燒效率，節省燃料達10-30%。
- 鍋爐設備無積碳結焦現象可改善操作環境品質減少歲修頻率，減輕勞動力 並可延長鍋爐 使用壽命。
- 有效降低NOx、SOx、排放量達25-35%，可降低空氣污染提高環境品質並減輕污染防治設備、環境空污費及避免罰單支出。
- 火燄明亮，可提高窯爐產品質量尤其對鋼鐵業可減少氧化鐵產生，增加鋼品產出。

電腦監控減少人為損失，機器設備異常自動轉回原業者管線繼續供油以免造成生產線上停滯。

安全 可靠 環保 節油 給使用者最大保障

Feature description

The difference between traditional emulsified fuel oil and our eco-efficient energy saving heavy fuel oil in which was processed under “UGE high speed microcomputer oil saving control system” is as following:

- Compatible with the original Fuel Burner equipments, no extra cost for revision needed.
- The eco-efficient energy saving heavy fuel oil is completely emulsified producing no precipitations decreasing the chance of clogging the nozzles and thus reducing the downtime ratio.
- The eco-efficient energy saving heavy fuel oil is stable and safe. The reaction of nebulization and micro-explosion taking place during combustion can generate a complete fuel combustion, which enhance the efficiency of the fuel burner and save 10-30% of the fuel cost.
- Non-carbon deposition coking feature of the fuel may improve environmental quality while operating. It reduces the frequency for repairing boilers over the years, also reduces labor force, and also prolongs the life expand of the boiler.
- It reduces NOx and SOx emission rate to 25-35%, effectively generating low air pollution and raising the environmental quality. Moreover, it mitigates the usage of contamination control facilities, lowering
- environmental dirt bill and avoiding unnecessary ticket expenses.

Creating bright fire raising the kiln furnace output quality as well as quantity, generating less iron oxide causing the steel industry to deliver a higher production.

The computer monitoring system can reduce the loss caused by human.
In case of irregular device problem, the system will immediately redirect the feed back to original entrepreneur pipeline avoiding stagnation.

Safe Reliable Eco-efficient Fuel consuming-efficient **giving users best guaranty.**

重油設備規格簡介 Specification Synopsis

序 / No	項目 / Item	數據 / Data
1	電源規格 / power	3相(ph)AC220V 7.48kw/10.2kw
2	氣源規格 / air compressor	建議工作氣壓為5~6kg/cm air pressure suggestion 5~6kg/cm
3	操作方式 / operation	採用人機控制 touch panel
4	供給量 / supply capacity	100/600 L/hr
5	安裝高度 / size request (in height)	1690/1700(±100)mm
6	安裝寬度 / size request (in width)	900/1000(±100)mm
7	安裝長度 / size request (in length)	1240/1400((±100)mm
8	重量 / weight	420/ 650KG
9	移動方式 / motion way	本身備有四組輪子可供推動 with 4 wheels to move
10	各出入口狀況 / pipe status	重油入口*3/4" / 11/4" entrance for heavy fuel oil
		淡水入口*3/4" / 11/4" entrance for water
		混液出口*3/4" / 11/4" exit for mixer

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