Synthetic bio-oil Technology introduction

By EcoPrana

Raw materials <4 liquid mixture>

Bioethanol

- ☐Octane level : High
- ☐Volatility : High
- ☐Viscosity : Low

Cashew Nut Oil (CNSL)

- ☐Cetane level : High
- ☐Self-combustible : High
- ☐Viscosity : High

Original additive

- ☐Realization of chemical bonding of oil and water
- ☐Addition amount is 0.3-0.5% of the total amount

Super Nano (SN) Water

- ☐Oxygen nanobubble water
  Ultra-fine oxygen mixed water
- ☐Sonochemistry Chemistry
  Ultrasonic effect
- ☐Electromagnetic energy radiation method
  Activated water with high heat retention

◆Patent No. 6569037

Production process

Mixing Process

◆Trademark Registration No. 5714155

Octane level : High

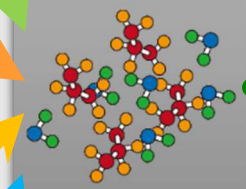
Mixing ratio adjustment

Cetane level 値 : High

Oil and water mixing

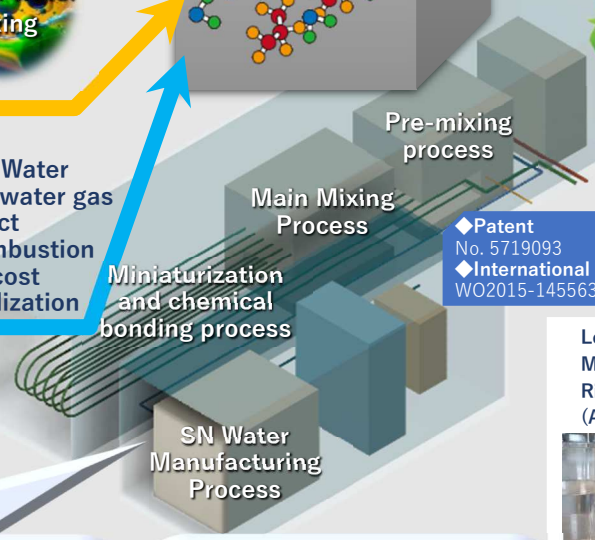
Miniaturization and chemical bonding process

- ☐Brownian motion effect due to grain refinement
- ☐Ester bonds that do not separate for over 1 year !



Mix SN Water

- ☐Uses water gas
- ☐Perfect combustion
- ☐Low cost realization



◆Patent No. 5719093
◆International patent WO2015-145563

Synthetic Bio-Oil <Various uses>

High octane type

High cetane type

Left: 100% ethanol
Middle: SN Bio Ethanol
Right: SN Bio Cashew Oil
(All contain 30% water)

Good combustion result

Purpose

❶Boiler equipment

By using high octane type…

- ☐Complete combustion and reduction of pollutants such as black smoke
- ☐Clean combustion furnace and easy cleaning

❷Diesel engine power generation

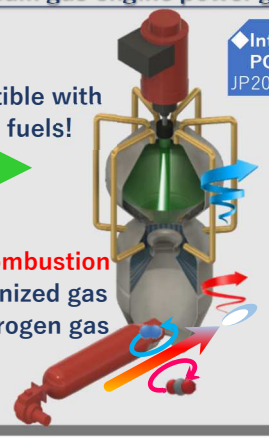
By using high cetane type…

- ☐High self-combustibility / Compatible with diesel internal combustion engines

❸Steam gas engine power generation

Hybrid compatible with various fuels!

◆International patent PCT application JP2018-44277

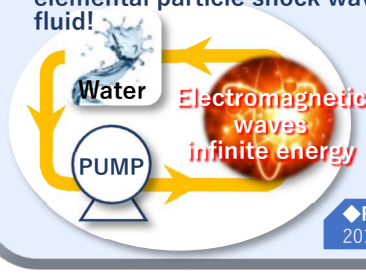


1800℃ super high temperature Complete combustion in furnace

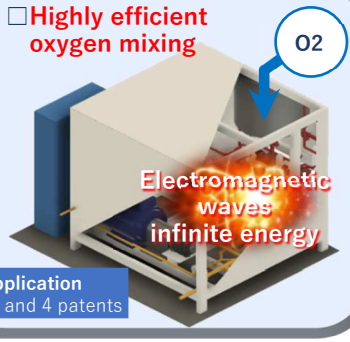
Recirculating combustion of combustion gas and H2O gas

Cycle combustion of carbonized gas and hydrogen gas

☐World's first! Generate electromagnetic wave energy by elemental particle shock waves in fluid!



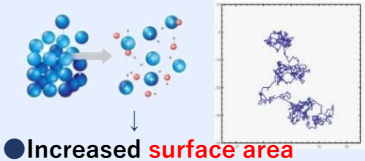
☐Highly efficient oxygen mixing



◆Patent application 2019-77534 and 4 patents

☐Fine molecularization

- ●Miniaturization of molecules of each raw material



- ●Increased surface area
- ●Brownian motion effect

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- ●Energy Increase