

(12) PATENT APPLICATION PUBLICATION

(21) Application No.201941054587 A

(19) INDIA

(22) Date of filing of Application :31/12/2019

(43) Publication Date : 17/01/2020

(54) Title of the invention : DESIGN, DEVELOPMENT AND FABRICATION OF PYROLYSIS REACTOR TO CONVERT WASTE INTO SUSTAINABLE LIQUID

(51) International classification :C10B23/00
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No :NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)Name of Applicant :
1)SRI VENKATESHWARA COLLEGE OF ENGINEERING
Address of Applicant :SRI VENKATESHWARA COLLEGE OF ENGINEERING, KIA ROAD, VIDYANAGAR, BENGALURU, KARNATAKA, INIDA, 562157 Karnataka India
(72)Name of Inventor :
1)Mr. CHANDRA PRASAD B S
2)Mr. SUNIL S
3)Dr. SHRISHALL KAKERI

(57) Abstract :

Pyrolysis oil is a synthetic fuel. It's extracted by biomass conversion to liquid by way of destructive distillation converting dried biomass in the reactor at a temperature of 500°C followed by cooling. Pyrolytic oil is basically resembles tar and contains very high levels of oxygen to be called a hydrocarbon. So, this is the reason it's distinctly different from similar petroleum products. Municipal plastic wastes (MPW) normally remain a part of municipal solid wastes as they are discarded and collected a household plastic wastes. The various sources of MPW plastics includes domestic items like food containers, milk covers, water bottles, packaging foam, disposable cups, plates, cutlery, CD and cassette boxes. Fridge liners, vending cups, electronic equipment cases, drainage pipe, carbonated drinks bottles, plumbing pipes and guttering, flooring. The aim of this work is to design, develop and fabricate a simplified internally heated fixed bed Pyrolysis system operated by Solar Power for the production of alternative liquid fuel. In this work milk plastic cover and edible oil covers are selected as feed stocks to convert waste plastic into useful liquid fuel compounds. We have tested the extracted bio fuel with variable blends in 4S CI Engine without any modification in the Engine and successful in running the Engine and found the results to be satisfactory comparatively with Petro-Diesel. The B20 is found be Satisfactory with respect to Performance and Emission Characterization.

No. of Pages : 6 No. of Claims : 3



(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/inc>)

Patent Search

Invention Title	DESIGN, DEVELOPMENT AND FABRICATION OF PYROLYSIS REACTOR TO CONVERT WASTE INTO SUSTAINABLE LIQUID
Publication Number	03/2020
Publication Date	17/01/2020
Publication Type	INA
Application Number	201941054587
Application Filing Date	31/12/2019
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	C10B23/00

Inventor

Name	Address	Country	Nat
Mr. CHANDRA PRASAD B S	DEPT. OF MECHANICAL ENGG., SRI VENKATESHWARA COLLEGE OF ENGINEERING, KIA ROAD, VIDYANAGAR, BENGALURU, KARNATAKA, INIDA, 562157	India	Indi
Mr. SUNIL S	DEPT. OF MECHANICAL ENGG., SRI VENKATESHWARA COLLEGE OF ENGINEERING, KIA ROAD, VIDYANAGAR, BENGALURU, KARNATAKA, INIDA, 562157	India	Indi
Dr. SHRISHALL KAKERI	DEPT. OF MECHANICAL ENGG., SRI VENKATESHWARA COLLEGE OF ENGINEERING, KIA ROAD, VIDYANAGAR, BENGALURU, KARNATAKA, INIDA, 562157	India	Indi

Applicant

Name	Address	Country	Nat
SRI VENKATESHWARA COLLEGE OF ENGINEERING	SRI VENKATESHWARA COLLEGE OF ENGINEERING, KIA ROAD, VIDYANAGAR, BENGALURU, KARNATAKA, INIDA, 562157	India	Indi

Abstract:

Pyrolysis oil is a synthetic fuel. It's extracted by biomass conversion to liquid by way of destructive distillation converting dried biomass in the reactor at a temperature of 1 followed by cooling. Pyrolytic oil is basically resembles tar and contains very high levels of oxygen to be called a hydrocarbon. So, this is the reason it's distinctly different from similar petroleum products. Municipal plastic wastes (MPW) normally remain a part of municipal solid wastes as they are discarded and collected a household plastic waste various sources of MPW plastics includes domestic items like food containers, milk covers, water bottles, packaging foam, disposable cups, plates, cutlery, CD and cassette Fridge liners, vending cups, electronic equipment cases, drainage pipe, carbonated drinks bottles, plumbing pipes and guttering, flooring. The aim of this work is to design develop and fabricate a simplified internally heated fixed bed Pyrolysis system operated by Solar Power for the production of alternative liquid fuel. In this work milk plast and edible oil covers are selected as feed stocks to convert waste plastic into useful liquid fuel compounds. We have tested the extracted bio fuel with variable blends Engine without any modification in the Engine and successful in running the Engine and found the results to be satisfactory comparatively with Petro-Diesel. The B20 is found Satisfactory with respect to Performance and Emission Characterization.

Complete Specification

PREAMBLE OF THE INVENTION

Pyrolysis oil is a synthetic fuel. It's extracted by biomass conversion to liquid by way of destructive distillation converting dried biomass in the reactor at a temperature of 500°C followed by cooling. Pyrolytic oil is basically resembles tar and contains very high levels of oxygen to be called a hydrocarbon. So, this is the reason it's distinctly different from similar petroleum products.

Municipal plastic wastes (MPW) normally remain a part of municipal solid wastes as they are discarded and collected a household plastic wastes. The various sources of MPW plastics includes domestic items like food containers, milk covers, water bottles, packaging foam, disposable cups, plates, cutlery, CD and cassette boxes. Fridge lining cups, electronic equipment cases, drainage pipe, carbonated drinks bottles, plumbing pipes and guttering, flooring.

The aim of this work is to design, develop and fabricate a simplified internally heated fixed bed Pyrolysis system operated by Solar Power for the production of alternative liquid fuel. In this work milk plastic cover and edible oil covers are selected as feed stocks to convert waste plastic into useful liquid fuel compounds. We have tested the extracted bio fuel with variable blends in 4S CI Engine without any modification in the Engine and successful in running the Engine and found the results to be satisfactory comparatively with Petro-Diesel. The B20 is found to be Satisfactory with respect to Performance and Emission Characterization.

DETAILED DESCRIPTION:

In this work pyrolysis method is used to convert household plastic wastes like food containers, milk covers, water bottles, packaging foam, and waste cooking oil cover.

Nearly 15 tons of plastic cover is wasted in single village. This highest portion of plastic is disposed to landfill. By survey nearly 150 tons to 200 tons of plastic cover is disposed into land in single district. By estimating 5000 tons to 6000 tons of plastic will be wasted from household sources in the state. Waste plastics have been shredded.

[View Application Status](#)



Terms & conditions (<http://ipindia.gov.in/terms-conditions.htm>) Privacy Policy (<http://ipindia.gov.in/privacy-policy.htm>)

Copyright (<http://ipindia.gov.in/copyright.htm>) Hyperlinking Policy (<http://ipindia.gov.in/hyperlinking-policy.htm>)

Accessibility (<http://ipindia.gov.in/accessibility.htm>) Archive (<http://ipindia.gov.in/archive.htm>) Contact Us (<http://ipindia.gov.in/contact-us.htm>)

Help (<http://ipindia.gov.in/help.htm>)

Content Owned, updated and maintained by Intellectual Property India, All Rights Reserved.

Page last updated on: 26/06/2019



Office of the Controller General of Patents, Designs & Trade Marks
Department of Industrial Policy & Promotion,
Ministry of Commerce & Industry,
Government of India



Application Details

APPLICATION NUMBER	201941054587
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	31/12/2019
APPLICANT NAME	SRI VENKATESHWARA COLLEGE OF ENGINEERING
TITLE OF INVENTION	DESIGN, DEVELOPMENT AND FABRICATION OF PYROLYSIS REACTOR TO CONVERT WASTE INTO SUSTAINABLE LIQUID
FIELD OF INVENTION	CHEMICAL
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	secretary@svcengg.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	17/01/2020

Application Status

APPLICATION STATUS	Awaiting Request for Examination
--------------------	---

[View Documents](#)

