

PATENT GRANTED

PROCESS AND SYSTEM FOR EFFICIENT BIODIESEL PRODUCTION

One of the successfully completed R & D project is “Bio-diesel Production Process”. This project was filed for patenting in December, 2019 and got published in January, 2020. The Government of India has granted a patent for the same on 19th July, 2021 for a term of **20 years from 31st December, 2019**. The Patent No. is **372207** titled “**Process and System for Efficient Biodiesel Production**”. This is the second utility patent granted in the name of MJCET.

The process for efficient biodiesel production, comprising: preparing of a feedstock for biodiesel production, whereby the feedstock is a reactant mixture for trans-esterification process; transferring the feedstock into a reactor flask, whereby the trans-esterification reaction is performed by heating via a microwave irradiation technique under constant stirring along with reaction temperature monitoring; separating the catalyst post reaction completion from a mixture of products and excess ethanol is distilled to retrieve the excess 15 ethanol from the mixture of products for reuse; separating a product mixture containing biodiesel and glycerol in a gravity separator.

The patented “**Bio-diesel Production Process**” project was accomplished in different phases, starting from extraction of biofuels from algae, then extraction of biodiesel from waste cooking oil, improvement in the extraction process to increase the yield using Microwave and glass reactor, then automation of biodiesel pilot plant using continuous flow process. The produced bio-diesel was tested on VCR and it produced good results as a dual fuel combination of Biodiesel and diesel. The inventees of the patent are: Dr. M.G.V. Satyanaryana of Chemistry Department and Dr. Ishrat Meera Mirzana of Mechanical Engineering Department. The project and patenting was funded by R & D, Cell and was encouraged and supported by Advisor cum Director, MJCET- Dr. Basheer Ahmed. The inventees were felicitated and appreciated by Hon. Secretary, SUES- Janab Zafar Javeed Saheb. The SUES management felicitates each inventor of the Utility patent granted with a cash prize of Rs. 25,000/-.



Felicitation of the Inventees and the Bio-diesel Set up



Technology Transfer team of Bio-diesel Project