

Control of Agitation and Temperature of a Reactor for Biodiesel Production.

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ABSTRACT

A control system embodying the hydrodeoxygenation reaction of first generation biodiesel in a reactor containing the conditions of pressure and operating temperature to obtain a biofuel. The temperature control system can work so as to contain the features that are required to work to keep the biodiesel temperature to 450 ° C. Circuit in which you conditioned temperature sensors to capture the temperature conditions in the reactor is to send this information to a "PIC18F4550₁" programmed "assembly" language that receives sensor data was used to maintain the temperature to 450 ° C. By stirring system used as a single-phase induction motor, with horsepower ¼ which is conditioned a capacitor for starting, and a circuit built with solid state switches "Transistors", since their lifetimes and frequencies switching are much higher. Moreover the switches are associated with diodes connected to them in parallel to allow the currents circulating in the opposite direction that is provided each time the voltage is switched, since the motor comprises windings for a short period of time it will oppose the current varies, plus a power implementing "LM317₂" and capacitors to achieve the engine start half turns so you can get the 20 bar hydrogen to which biodiesel is maintained conditioned.

Keywords: PIC18F4550₁: Microcontroler; LM317₂: adjustable voltage regulator three terminal.

