

ABSTRACT

Multi Hot Plate Magnetic Stirrer is a supporting tools that used for mixing or dissoving any solute substance into solvent to be a homogenous substance. Mixing in this device is done by heating and stirring. Multi Hot Plate Magnetic Stirrer stirring and heating system have a controller based on ATmega2560 microcontroller. Control system is used for controlling the DC motor's rotating speed as stirrer and temperature of heating element. Stirring system in this device works with the magnetism principle, where end of the shaft of the DC motor is mounted with a magnet that will produce magnetic field. Controlling by the control system is used for user to get faster and precise stirring result with ease. When DC motor is activated then the magnet at the end of the shaft will be rotating, so the stir bar in the solvent will be rotating as a result of force of attraction from the magnet. Heating system in this device works by giving heat energi from the heating element, where the temperature from the heating element will be controlled by the control system to keep the temperature match the determined value. Controlling by the control system done to get the stirring result match the determined value, fast, and precised with ease. This Magnetic Stirrer Multi Hot Plate stirring and heating system have a maximum rotating speed of 1300 rpm and temperature setting from 30°C to 80°C. This Magnetic Stirrer Multi Hot Plate have 4 slots, where each slot can work individually or simultaneously. Test result with individually work system produce homogeneous solution, the next test result with simultaneous work system produce same homogeneous solution from all four slots.

Keyword: *Multi Hot Plate Magnetic Stirrer, mixing, stirring system, heating system ATmega2560.*