An automated flow assembly for a biosensor has been developed in this paper. In recent years there has been a growing interest in the field of in-vivo biosensors for continuous monitoring. For this continuous monitoring of biological interactions, a need for the development of auto-flow assembly arises. The automated flow assembly inherently coupled to a biosensor, forms a Flow Injection Analysis (FIA) system. The designed auto-flow assembly consists of three micro-fluidic solenoid valves actuated through a microcontroller AT89C51. A programmable turn-on time for each valve can be entered through a 4x3 keypad and its switching can be controlled by the microcontroller. In addition, a temperature-sensing unit for online monitoring of the buffer temperature at the biosensor has been interfaced to the microcontroller. The automated flow assembly offers the advantage of faster response. The work includes interfacing of the temperature sensor, keypad (for selecting the time), display unit (liquid crystal display) and solenoid valves to the microcontroller and development of the software for the same.
Reference


Index Terms

Computer Science

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Applications

Key words

Microcontroller

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flow-assembly
flow injection analysis