

5.1 Conclusion

System with sensors array and microcontroller make it possible to detect micro air bubbles in the blood.

The system was efficient and proposed goals has been satisfied results. When micro bubbles air goes in the blood sensor will sense it, then microcontroller with air going to drain. While testing this system several notice has been watched due to conditions of experimental test and different positions of infrared transmitter and receiver sensor and laser light reflection and refraction when the beam goes through the tube.

The set that carrying blood is very expensive and any machine has its own set when another set is configured in the machine that is not belong to it well cause air bubbles which will caused a blood clotting. There the system is needed and will solve this problem.

5.2 Recommendations

The Project leads to several recommendations to design and improve the module:

- Using more sensors to give more accurate inputs to Microcontroller.
- Add communication module to make it possible to send the status of the hemodialysis machine.
- Add central processing unit to integrate with the module.
- Connect the modules with computer in order to computerize the hemodialysis center.