Abstract

In this study and the development of auto tuning control in a perfusion System for Extracorporeal Membrane Oxygenation (ECMO) support is described. ECMO is a temporary life support system used for patients who’s Heart or Lungs is not working properly. This system must be managed by a Perfusionist to maintain proper blood flow and blood pressure to the patient. In this paper, the control of blood-gas process of an ECMO system is modeled in a detailed approach in MATLAB Scripts. Experimental results show a good agreement in static and frequency domain measurements.

References

Systems and Control October 3-5, 2012. Dubrovnik, Croatia

- Javier G. Castillo, George Silvay, the 60th Anniversary of the First Successful Heart Lung Machine, Journal of Cardiothoracic and Vascular Anesthesia, Vol 27, No 2 (April), 2013: pp203207
- Philip H Kay, Christopher M Munsch Techniques in Extracorporeal circulation fourth edition London: Arnold, 2004

**Index Terms**

Computer Science

Applied Sciences

**Keywords**

Extracorporeal Membrane Oxygenation (ECMO) cardio Pulmonary Blood Gases (CPB) partial Oxygen (pO2) partial Carbon dioxide pressure (pCO2).