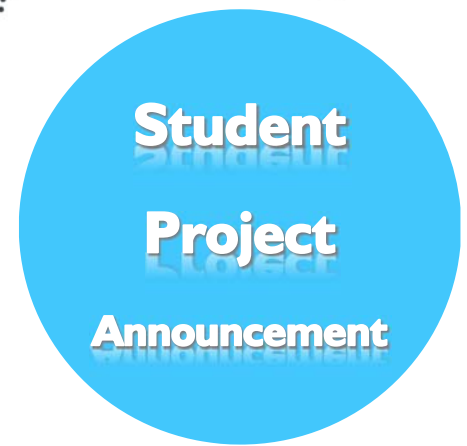




Optimization of pulsatile pump for generation of physiological pressure waveform



Background:

In-vitro investigation of fluid dynamics in vascular models and implants demands a pulsatile pump to mimic the pumping motion of the heart. At BMT, a pulsatile pump using a linear motor has been developed, which is capable to generate a pulsatile pressure waveform in peripheral vasculatures utilizing the windkessel effect of the Aorta; however, optimization of the system for generation of reproducible physiological pressure waveform is still required.

Project Tasks

- Control of pumping flow using physiological pressure waveform
- Integration of automatic resistance to the pumping setup
- Pump chamber design optimization
- Study of different compliant tube effects on windkessel effect
- Integration of flow sensor to the pump setup
- Minor optimization of Labview program

Start:

available

Supervisor:

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