

Pairat Muangngan 2012: Control of Scroll Pump for Decentralized Chilled Water System. Master of Engineering (Mechanical Engineering), Major Field: Mechanical Engineering, Department of Mechanical Engineering. Thesis Advisor: Assistant Professor Ponkit Kritmaitree, Ph.D. 89 pages.

This research presents a control of scroll pump for decentralized chilled water system. The small size chilled water system was designed and constructed for the study. It consists of water chiller circuit and decentralized chilled water circuit. The scroll pump was installed in the decentralized circuit and located at terminal unit (heat exchanger). The scroll pump was utilized to circulate and regulate the chilled water flow by controlling its speed to maintained leaving water temperature of the terminal unit. The speed of the scroll pump was varied by the PID controller.

The results showed that the scroll pump varied the chilled water flow rate through heat exchanger proportionally with the cooling load. Therefore, the pump energy consumption also varied proportionally with the cooling load. It proved that the decentralized chilled water system with scroll pump was an energy efficiency system.

---

Student's signature

---

Thesis Advisor's signature