

# Control design of 60 kW PEMFC generation system for residential applications

## 60kW家庭供电系统的控制设计

**Citation:** Ying-ying Zhang, Ying Zhang, Xi Li, Guang-yi Cao, 2013. Control design of 60 kW PEMFC generation system for residential applications. *Journal of Zhejiang University-SCIENCE A (Applied Physics & Engineering)*, 14(9):679-685. [doi:10.1631/jzus.A1300146]

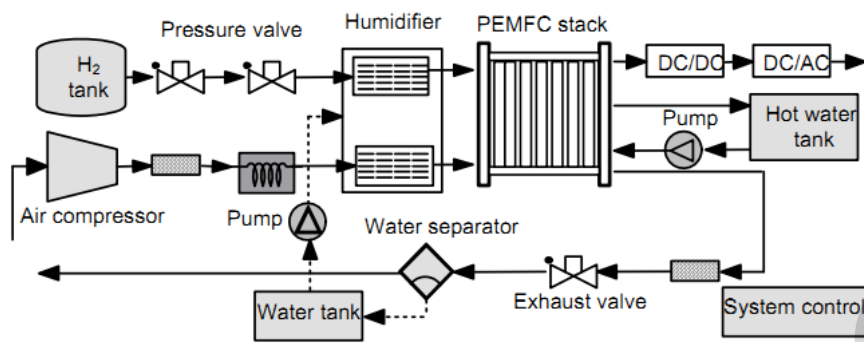


Fig. 1 Structure of 60 kW PEMFC generation system

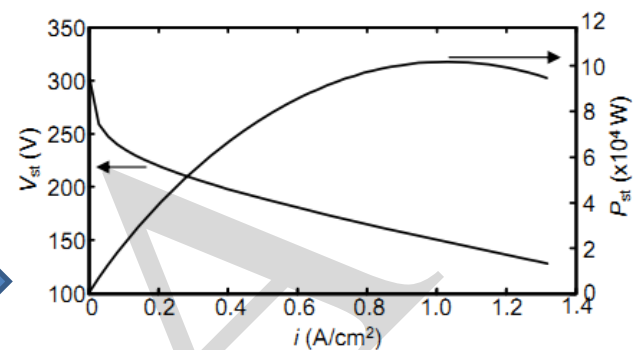


Fig. 5 60 kW PEMFC polarization curve

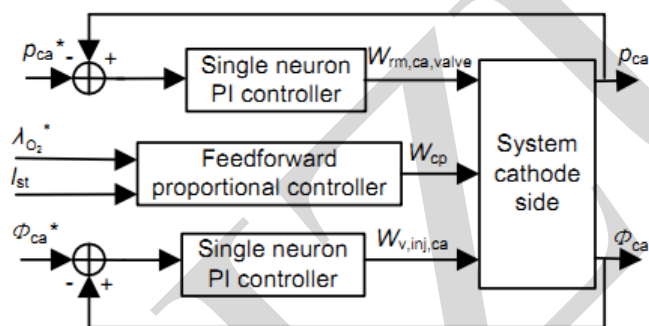


Fig. 4 Intelligent decoupling control strategy for cathode side

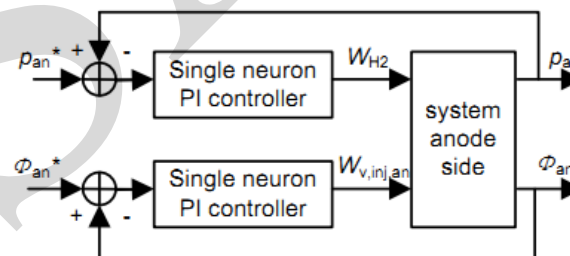


Fig. 3 Intelligent PI decoupling control strategy for anode side

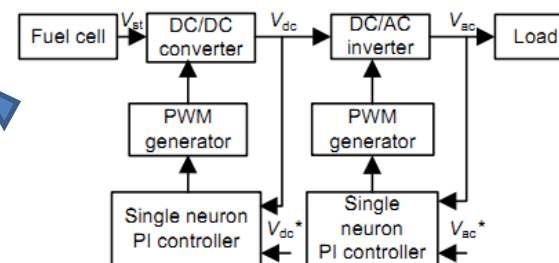
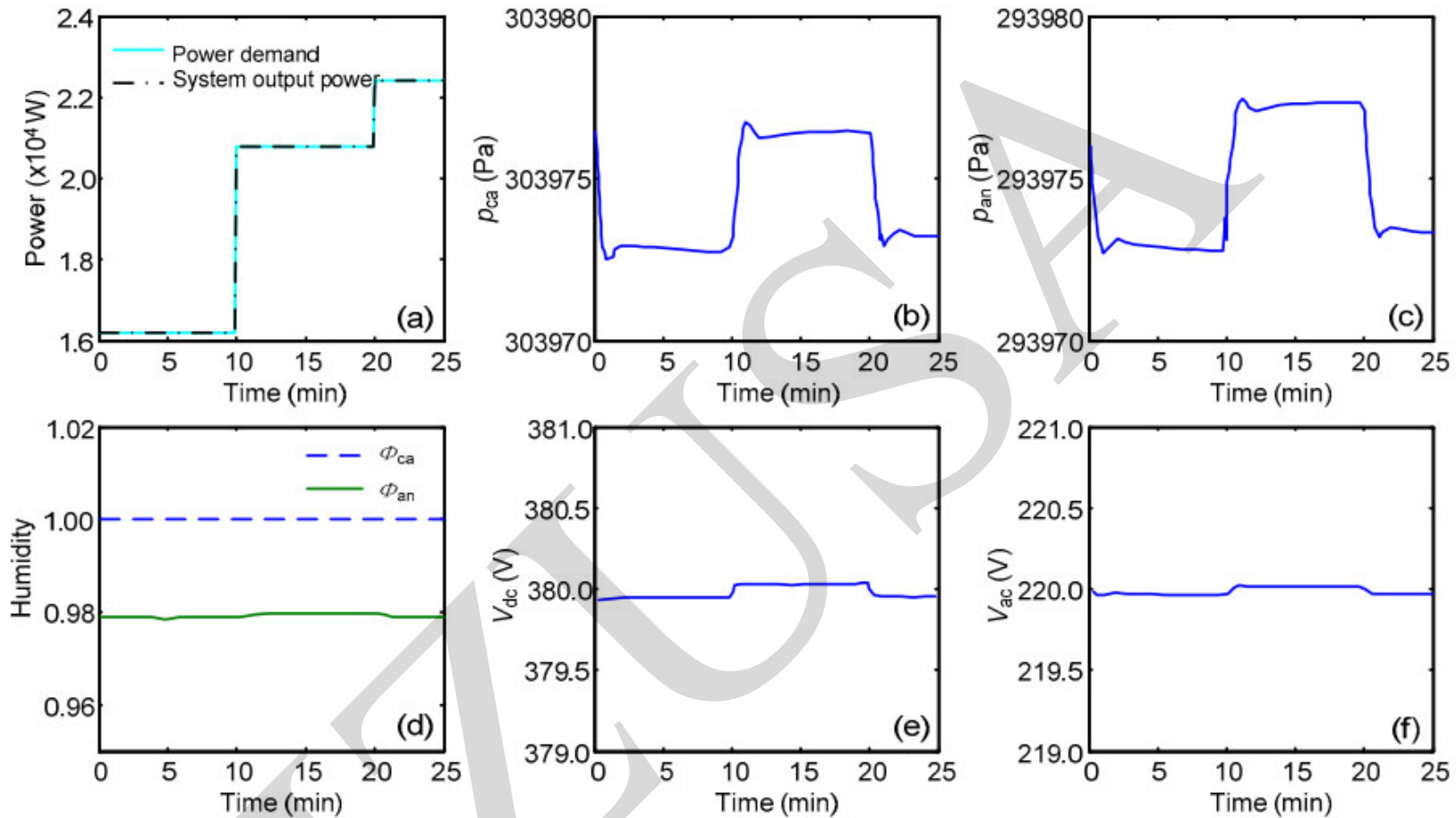


Fig. 6 Control strategy for the power conditioning unit



**Fig. 7 Responses of a 60 kW generation system to the step changes of load power demand: (a) step changes of load power demand and responses of system output power; (b) responses of cathode pressure; (c) responses of anode pressure; (d) responses of anode and cathode humidity; (e) responses of converter output voltage; (f) responses of inverter output voltage**