

# STUDIES IN CONTROL AND SYSTEM AUTOMATION

EDITED BY

FATIMAH SHAM ISMAIL  
LIM CHENG SIONG



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

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# CHAPTER 10

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### **10.1 INTRODUCTION**

Water supply and distribution system have an ability to meet up supply demands in its operations. This includes the amount of energy consumed, the cost of maintenance, and the amount of breakdown (Folorunso and Ismail, 2013; Jusoh *et al.*, 2015; Menke *et al.*, 2015).

Generally, the conventional water supply system is equipped with numerous high-energy consuming components. Typical of them are the electric pumps therein the system. The pumps, usually of varying specification conveys water within that supply system and to deliver water to the end users (Bonvin *et al.*, 2017; Folorunso and Ismail, 2013).

The pumps consume the most significant or major fraction of the total energy accounted for by the entire water supply and distribution system (Barán *et al.*, 2005; Menke *et al.*, 2015; Puleo *et al.*, 2014). Thus, resulting in the high-energy consumption and the

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