

SBS5498 Final Year Project 2 (Applied Research Project)

<http://ibse.hk/SBS5498/>

Suggested Topics from Supervisors (2018-2019)

Name of Supervisor:	Dr. LU Xiaoying, Helen (from EEM programme)
Email:	xylu@vtc.edu.hk
Tel:	2176-1453

Title:	A study on microwave sterilization technology in central air conditioning system
Description:	The issue of fungal microbial contamination in central air conditioning systems is one of the main problems of biological pollution in building environment. The excellent properties of microwaves determine their potential application in the field of sterilization in air conditioning systems. In this study, the microwave sterilization experiments will be conducted under ideal conditions to determine the microwave irradiation conditions for the dominant fungi microbes in the air conditioning system and the microwave inactivation temperature for the air conditioning system. The temperature distribution, uniformity and the sterilization effect of microwaves for the humidifier components in the centralized air conditioning system will be studied by using a laboratory scale air conditioning and microwave sterilization experimental setup.

Title:	Development of air pollution control system for car park and indoor environment
Description:	Carbon monoxide (CO) and nitrogen dioxide (NO ₂) are the most relevant air pollutants inside car parks in Hong Kong. In addition, odorous gases, emitted from grease traps of restaurants or solid waste collection area, generate unpleasant smell to the carpark users. Based on the on-site sampling and analysis data from the carpark area, the TVOCs and NO ₂ concentration will be measured against indoor air quality standards. To provide adequate protection of the public health, the air quality inside car parks can be well improved by applying the proposed treatment methods in this study. Novel bio-photo-chemical technology for odour treatment will be developed to remove odorous air. Indoor and outdoor gas stream comprises various pollutants such as volatile organic compounds (VOCs), odorous compounds. Therefore, a new Bio Tower cum Photo-Catalytic Oxidation system will be developed to treat the odour gas in the indoor and car-parking environments. Such technology is helpful on treating odour problems in various indoor and outdoor environments.