

CHAPTER I

INTRODUCTION

Some countries where drinking water is untreated are facing with bacterial contamination problems. On the other hand, the other countries where drinking water is disinfected, the bacterial contamination problem is less. However, the potential for drinking water contamination is always present, especially in rural areas of developing countries.

It is widely known that contaminated water is responsible for the spread of many diseases. A famous study in 1849 indicated that individuals who drank water from a particular well on Broad Street in London were much more likely to become victims of a local cholera epidemic than those from the same neighborhood who drank from a different well (Masters, 1991). It also provided some relationship between human waste, qualities of drinking water, and number of incidents of harming diseases. He not only found a likely source of the contamination which was sewage from the home of a cholera patient, but he was also able to effectively end the epidemic by simply removing the handle from the pump on the Broad Street well.

At present, most of the water treatment systems used in home are simple filters which cannot solve the bacterial contamination problem. Even though the technology of using ultraviolet light is available for drinking water sterilization, the cost of this system is very high. Moreover, such a system requires high maintenance.

It is very interesting to say that the idea of using silver supported on alumina for drinking water sterilization as practiced in this study is new. The ultimate goal of this project was to develop a simple, low cost and low maintenance water purification/sterilization system. Silver as metal is believed to exhibit its oxidation power on killing bacteria contaminated in water.