

## MASTER'S THESIS

### The use of the rock shell, *thais clavigera*, as a biomonitor of tributyltin contamination in Hong Kong and Shenzhen

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*Date of Award:*  
2008

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**The Use of the Rock Shell, *Thais clavigera*, as a Biomonitor of  
Tributyltin Contamination in Hong Kong and Shenzhen**

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**A thesis submitted in partial fulfillment of the requirements  
for the degree of  
Master of Philosophy**

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**February 2008**

## Abstract

Tributyltin (TBT) is widely used as an active ingredient in antifouling paints to prevent the fouling of marine organisms on ship hulls. It is effective, but exerts adverse effects on many non-target organisms, such as imposition of male sexual characteristics (i.e. imposex) in female neogastropods. With busy traffic of shipping and pleasure vessels in Hong Kong and Shenzhen, the coastal water in these regions is seriously contaminated by TBT. This study aims to assess the suitability and problems of applying *Thais clavigera*, a common neogastropod in western Pacific, as a biomonitor of TBT contamination in southern China, including Hong Kong and Shenzhen.

The thesis is organized into six chapters. Chapter 1 is a general introduction of the problems and the objectives of the study. Chapter 2 is a literature survey encompassing the source and fate of TBT, its toxicity to marine animals, as well as the biology of *Thais clavigera*, the experimental animal used in this study. Chapter 3 is a survey of TBT contamination in Mirs Bay, based on seasonal changes in imposex status and tissue butyltin concentrations in different populations of *T. clavigera*. The results are compared with those from previous studies conducted in Hong Kong waters. Taken together, these results provide us a geographic view of TBT contamination in these two regions, their seasonal changes, and factors that may be

Tsang, Ms. Y.M. Lee and Ms. N.C. Wong, for their advice and help on my experiments.

Finally, my deepest appreciation is extended to my family including my parents, my brother for their continuous support, love, patience, encouragement and effort to understand what I was doing.

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