# 鄭學淵 教授　生態毒理學研究室

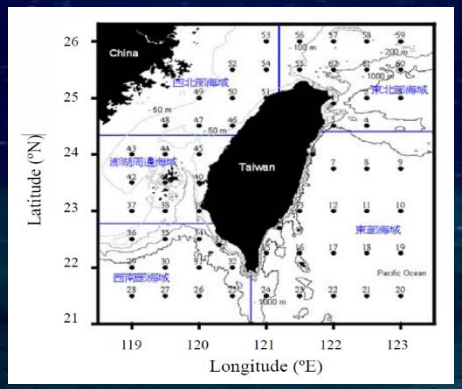
學　　歷：國立台灣海洋大學 水產養殖學系 農學博士

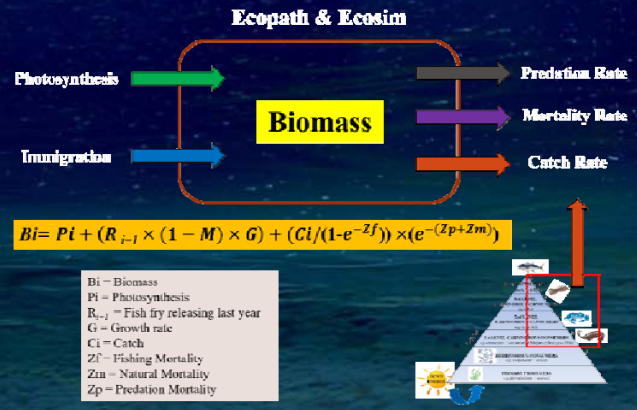
經　　歷：國立臺灣海洋大學 學生事務處　學務長
國立臺灣海洋大學 國際事務處　國際長
國立台灣海洋大學 環境生物與漁業科學學系 副教授
國立台灣海洋大學 環境生物與漁業科學學系 助理教授

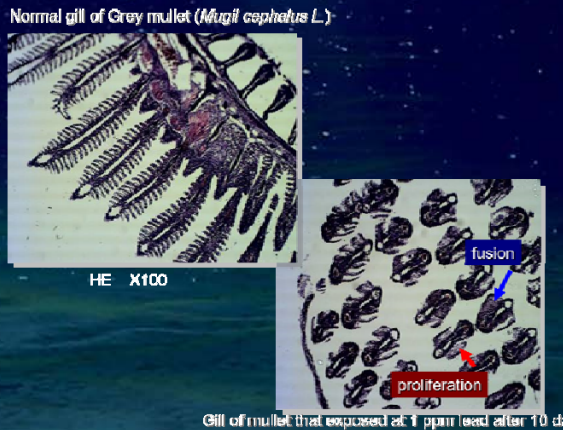
研究領域：環境化學、環境生物學、生態學、生態毒理學

## 研究內容：

- 主要的研究是以生物體內的含量來瞭解生物累積及生物放大的情形，並以此作為生物指標，同時解析此類污染物或毒性物質造成生物何種程度之影響、如何影響等等的研究議題。
- 研究重點以水域環境中對生物之有毒污染物以及環境變動下造成生物之影響為主，並研究環境變動下生物之容忍性、生理變動等。
- 過去的研究成果大致可以區分為兩部分：以鉛為主要研究重點，探討鉛於不同環境下對水生生物之致死、蓄積、代謝、緊迫反應、免疫及基因表現。同時參與台灣周邊海域研究計畫，以船測、衛星等方式分析台灣周邊海域之基礎生產力及水質變動狀況，並且以海洋基礎生產力為指標，輔以漁業生物營養位階等數據，瞭解周邊海域過漁之狀況。另外以環境變動為主題，了解生物在環境變動的緊迫條件下之生理變化狀況。



# Sha-Yen Cheng, Professor

## Laboratory of Ecotoxicology

**Education** :

- Department of Aquaculture, National Taiwan Ocean University (Ph.D.) (Doctor of Agriculture)

**Professional experience** :

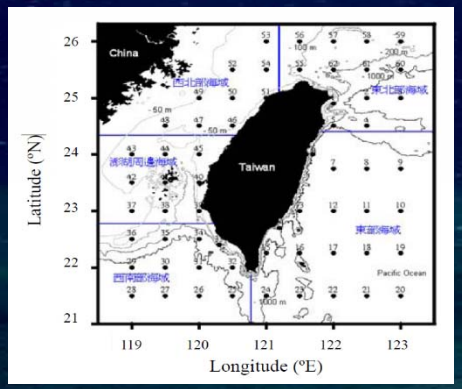
- Vice President of Student Affairs, Office of Student Affairs, NTOU
- Dean, Office of International Affairs, NTOU
- Associate Professor, Department of Environmental Biology and Fisheries Science, NTOU
- Assistant Professor, Department of Environmental Biology and Fisheries Science, NTOU

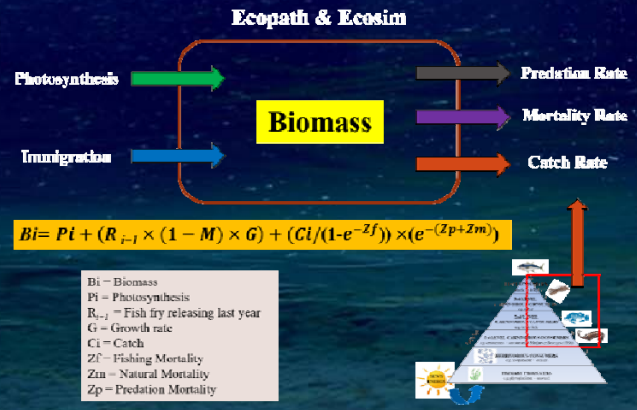
**Expertise** :

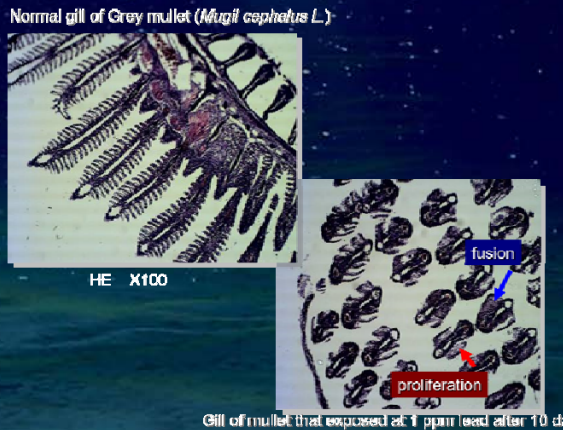
Environmental Chemistry, Environmental Biology, Ecology, Ecotoxicology

**Research interests** :

- The main research is to understand the status of bioaccumulation and biomagnification based on the content in the organism, and use this as a biological indicator. At the same time analyze the extent of the impact of such pollutants or toxic substances on the organism and how to affect it. In addition, parts of fisheries biology, such as age and growth, reproductive biology, diet ecology and migration and movement behaviors, are implemented through cooperation researches.
- Our lab. focuses on the toxic pollutants in the water environment and the impact on organisms caused by environmental changes. Understanding the tolerance and physiological changes of organisms under environmental changes.
- The past research results can be roughly divided into two parts. Investigating the lethality, accumulation, metabolism, emergency response, immunity and gene expression of lead on aquatic organisms under various environments. Meanwhile, participate in the research project of the surrounding waters of Taiwan, analyze the primary productivity and water quality changes in the surrounding waters of Taiwan by ship surveys and satellites. Furthermore, the primary productivity of the ocean is used as an indicator, supplemented by data such as the nutritional level of fishery organisms, to understand the surrounding waters. In addition, it takes environmental changes as the theme to understand the physiological changes of organisms under the urgent conditions of environmental changes.



International Journal of Environmental Research and Public Health, 17: 1294. doi:10.3390/ijerph17041294

International Journal of *Environmental Research and Public Health*

MDPI

*Article*

# Effects of Cadmium on Bioaccumulation, Bioabsorption, and Photosynthesis in *Sarcodia suiae*

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Received: 29 December 2019; Accepted: 14 February 2020; Published: 18 February 2020

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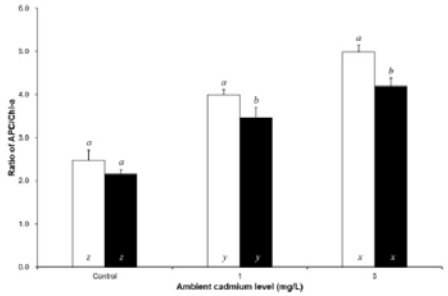
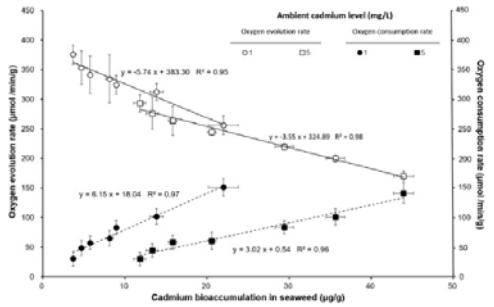
**重金屬鎘對海木耳生物累積、生物吸附及光合作用之影響**

## 重要研究成果

- 本研究將大型紅藻海木耳暴露於鎘環境中，於照光與不照光的條件下了解海木耳在生物累積及生物吸附作用的變化。
- 同時以藻膽蛋白及葉綠素a為汙染生物指標，了解海木耳對鎘的吸附及吸收的程度。
- 結果發現在照光條件下，海木耳對於鎘的生物累積及生物吸附作用均高於無光環境，此一結果顯示鎘會影響海木耳的光合作用及呼吸作用效率，並且重金屬鎘也會改變藻膽蛋白(PE、PC、APC)之含量與比例。



Frontier in Marine Science. 8: 671802.
https://doi.org/10.3389/fmars.2021.671802

frontiers in Marine Science

ORIGINAL RESEARCH
published: 21 June 2021
doi: 10.3389/fmars.2021.671802

# Heavy Metal Adsorption and Release on Polystyrene Particles at Various Salinities

*Beta Susanto Barus[1], Kai Chen[2]*, Minggang Cai[2], Rongmao Li[3], Huorong Chen[3], Cong Li[3], Jun Wang[2,4] and Sha-Yen Cheng[1]**

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不同鹽度下重金屬在聚苯乙烯(PS)微粒的吸收與釋放

## 重要研究成果

- 塑膠微粒與重金屬是目前海洋的主要污染物，本研究使用不同粒徑的聚苯乙烯塑膠微粒及鉛鎘銅鋅等重金屬，了解上述重金屬在不同粒徑聚苯乙烯表面的吸附與釋放速率。
- 本研究結果顯示聚苯乙烯的粒徑是非常重要的重金屬吸附和釋放因子，粒徑越大容易吸附重金屬。
- 鹽度也是一個很重要的環境因子，本研究顯示，在所有測試的重金屬中，鹽度越低，吸附率與釋放速率均越高。此一結果可提供河口感潮帶重金屬與聚苯乙烯微粒交互作用的重要參考。