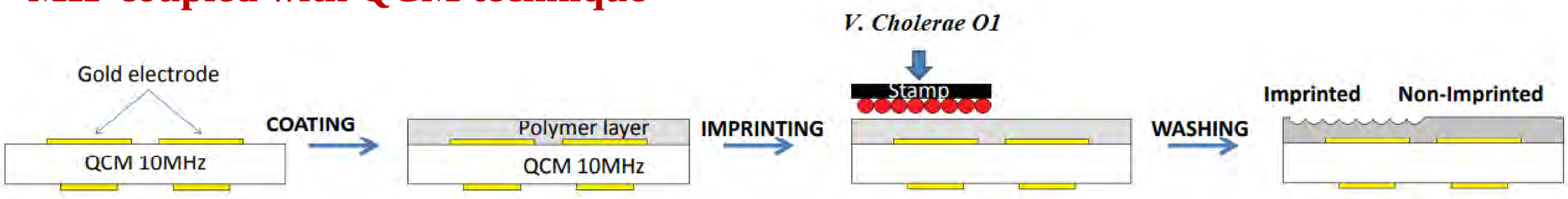
# Sensor for Direct detection of *Vibrio cholerae* in Frozen Seafood

Panwadee Wattanasin1*, Suticha Chunta[2], Phanthipha Runsaeng[3], Proespichaya Kanatharana[1], and Panote Thavarangkul[1]
[1] *Division of Physical Science, Faculty of Science, Prince of Songkla University, Songkla 90110, Thailand*
[2] *Department of Department of Clinical Chemistry, Faculty of Medical Technology, Prince of Songkla University, Songkla, 90110, Thailand*
[3]*Division of Health and Applied Sciences, Faculty of Science, Prince of Songkla University, Songkla 90110, Thailand*

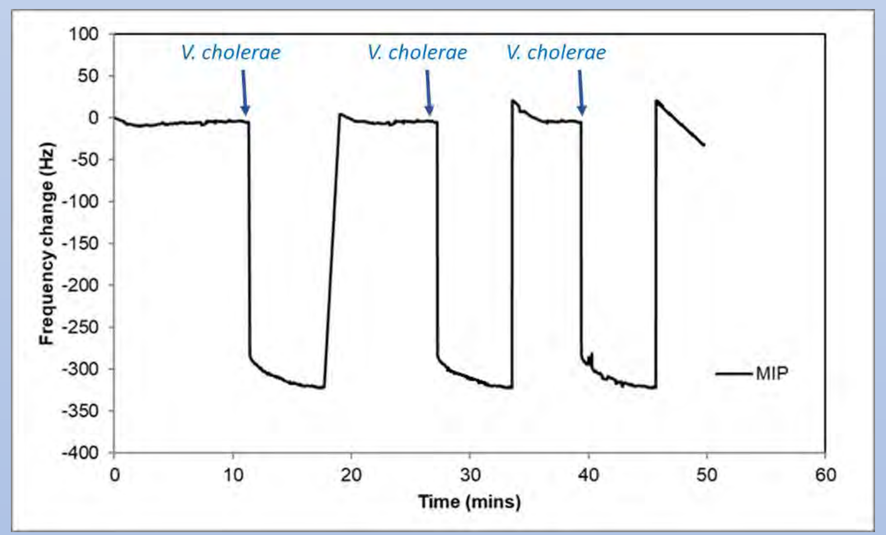
## Introduction

*Vibrio cholerae O1* serves as a life threatening pathogenic bacteria due to it can produce a cholera toxin. This causative agent promotes the cholera symptoms with the short incubation time of 1-5 days, leading to a severe secretory rice water diarrhea. If left untreated, the patient can die within 12-24 h. *V. cholerae O1* is frequently contaminated in food, especially in seafood and seawater because it is a halophilic bacterium. Currently, the Vibrio risk linked to seafood consumption is continuing increased due to the growing of worldwide seafood demand. Therefore, early detection of pathogenic Vibrio in seafood products by rapid and reliable approach is essential necessary to avoid the epidemic and pandemic of this foodborne pathogen.

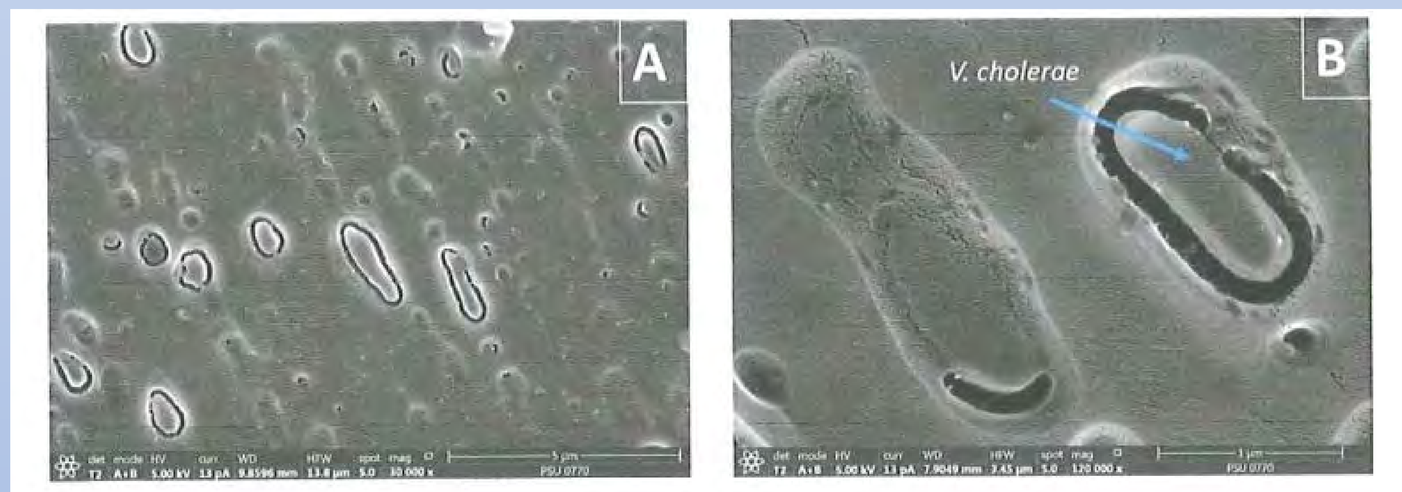
## MIP coupled with QCM technique



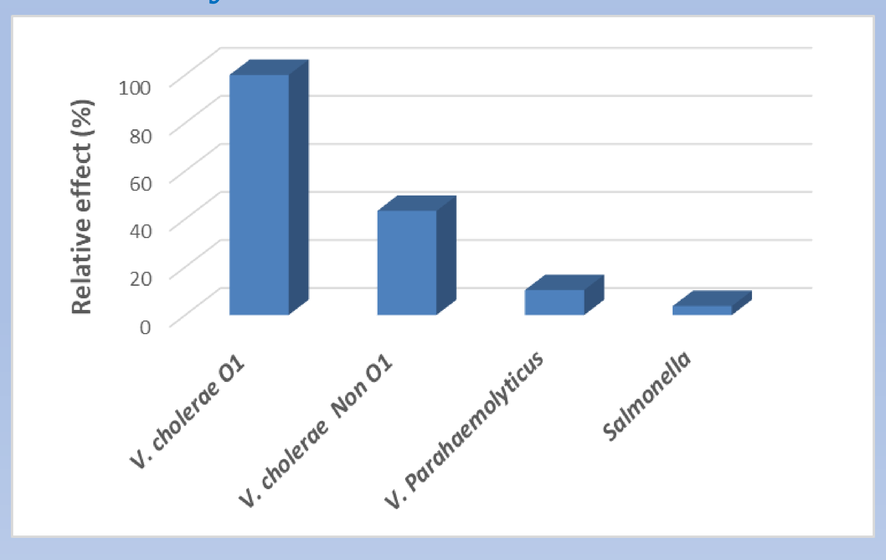

## Signal profile for *V. cholerae O1*




## SEM image of *V. cholerae O1*




## Selectivity of sensor




## Conclusion

This work was developed a new sensor for Vibrio cholerae based on molecularly imprinting technique coupled with quartz crystal microbalance (QCM)

- ❑ polyacrylamide (PAA) and washed with 10% acetic acid in 0.1% SDS solution.
- ❑ Under the optimum of developed method, a good linearity was obtained in the concentration of 1.0 x $10^3$ to 1.0 x $10^8$ CFU/mL with the limit detection of 1.5 x $10^2$ CFU/mL.
- ❑ The method accuracy was evaluated using recovery measurements in standard spiked samples and good recoveries of 84.0–114.3%

## Acknowledgments

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## References

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