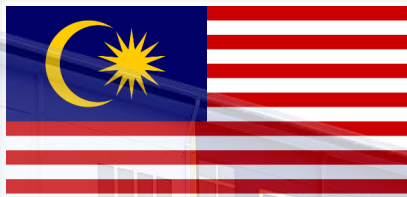


# e-PROCEEDING



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*'Embracing  
Innovation & Creativity  
in  
Industrial Revolutions'*

# PROTOTYPE OF PORTABLE HYPOCHLOROUS ACID PREPARED FROM PATTANI SALTERN

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**Keywords:** Sodium chloride salt, Hypochlorous acid, Electrolytic cell, Electrolyzed acid water, COVID-19.

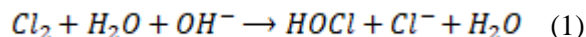
## 1. Introduction

Hypochlorous acid (HOCl) destroys the COVID-19 virus faster than alcohol in only 10 seconds and it is non-toxic. Hypochlorous acid can be prepared by using an electrochemical reaction to salt. This sweet salt is abundant in Pattani province salt-farms and contains many minerals. This research is to create a portable hypochlorous acid. Therefore, it is designed as a ready-made bottle that can be added salt and prepared in daily life.

## 2. Methodology

### 2.1. Equations

Based on the electrolytic cell, Hypochlorous acid can be prepared by using the following equation:



## 3. Results & Discussion

The concentration of hypochlorous acid was determined by argentometric methods. We found that 1.0 g salt with 1000 mL tap water under the 12 V electricity and 23 A for 10 min produced around 55-277 mg/L of hypochlorous acid concentration.

All elements in Pattani salt-farm were analyzed by XRF and results showed there are 69.88% Cl, 15.55% Na, 9.11% O, 3.73% Mg, 0.59% S, 0.55% K and 0.30% Ca. The sodium sulphate ( $\text{Na}_2\text{S}_2\text{O}_3$ ) compound available in the Pattani salt-farm is as shown in Figure 1.

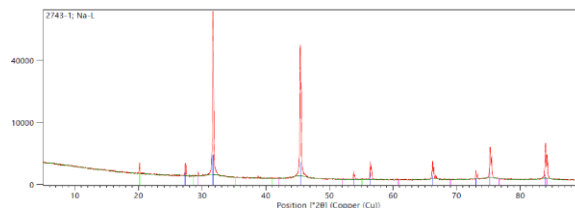


Figure 1. XRD pattern of Pattani salt-farm

## 4. Conclusion

The variety of ions allowed for a better preparation of hypochlorous acid and this is the reason Pattani salt is usually called sweet salt.

## Acknowledgments

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## References

- [1]E.G. Garcia, G. D. Peso, O. Celadilla, et al., Perit Dial Int. 30, no. 6, 644, (2010).
- [2]H. Hakim et al., Veter Med Sci., 14, (2007).
- [3]D. Schoeman, & B. C. Fielding, Virology Journal. 6, no. 1, 69, (2019).