

# HYDROGEN-CHLORINE PEM REVERSIBLE FUEL CELL ENERGY STORAGE SYSTEM

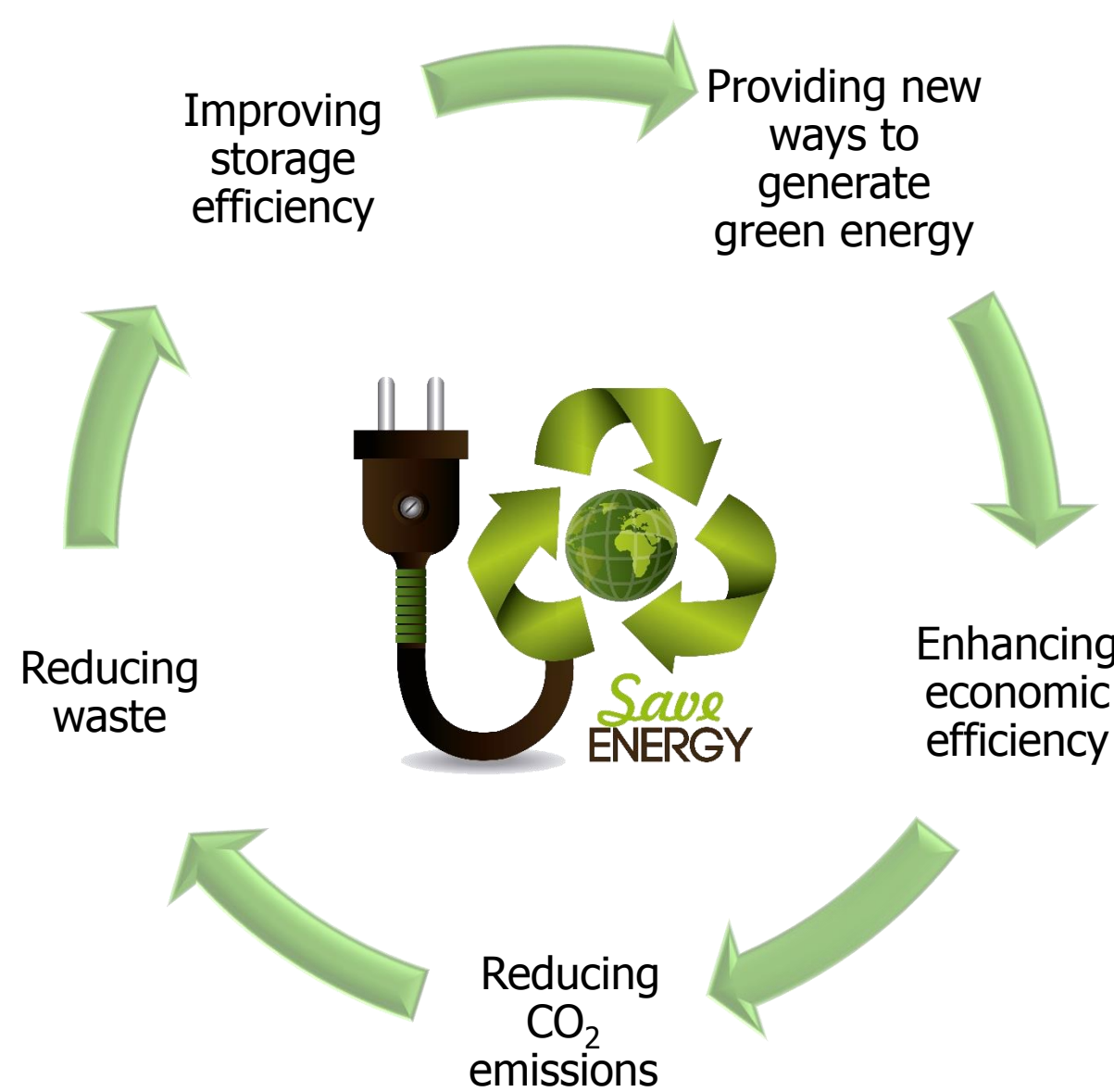
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## INTRODUCTION

Use of **hydrogen** to produce **electric power** has seemed as a very **promising** option for a long time [1], although **storage** procedure is still a **big problem** [2].

### Looking for...

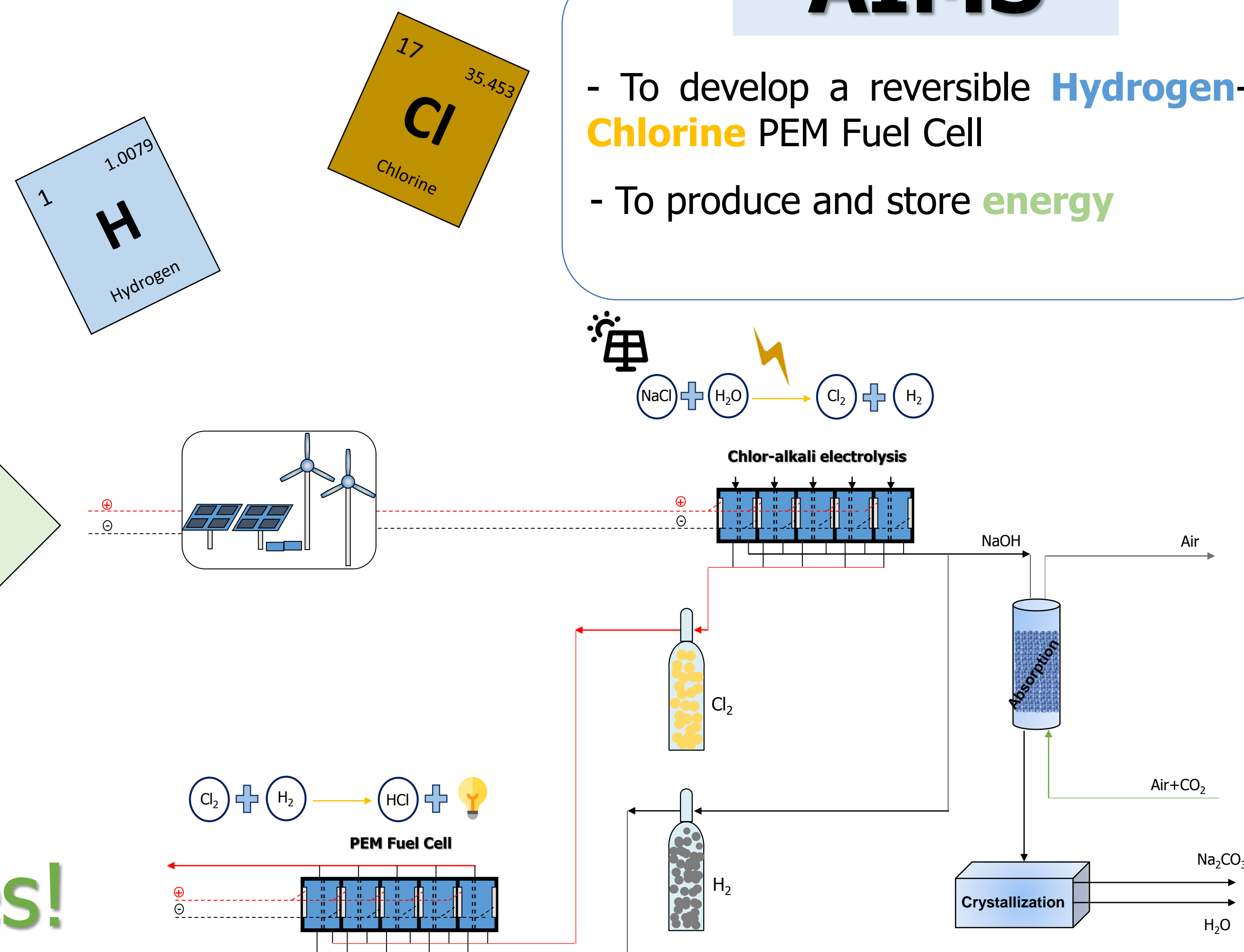


### Proposal

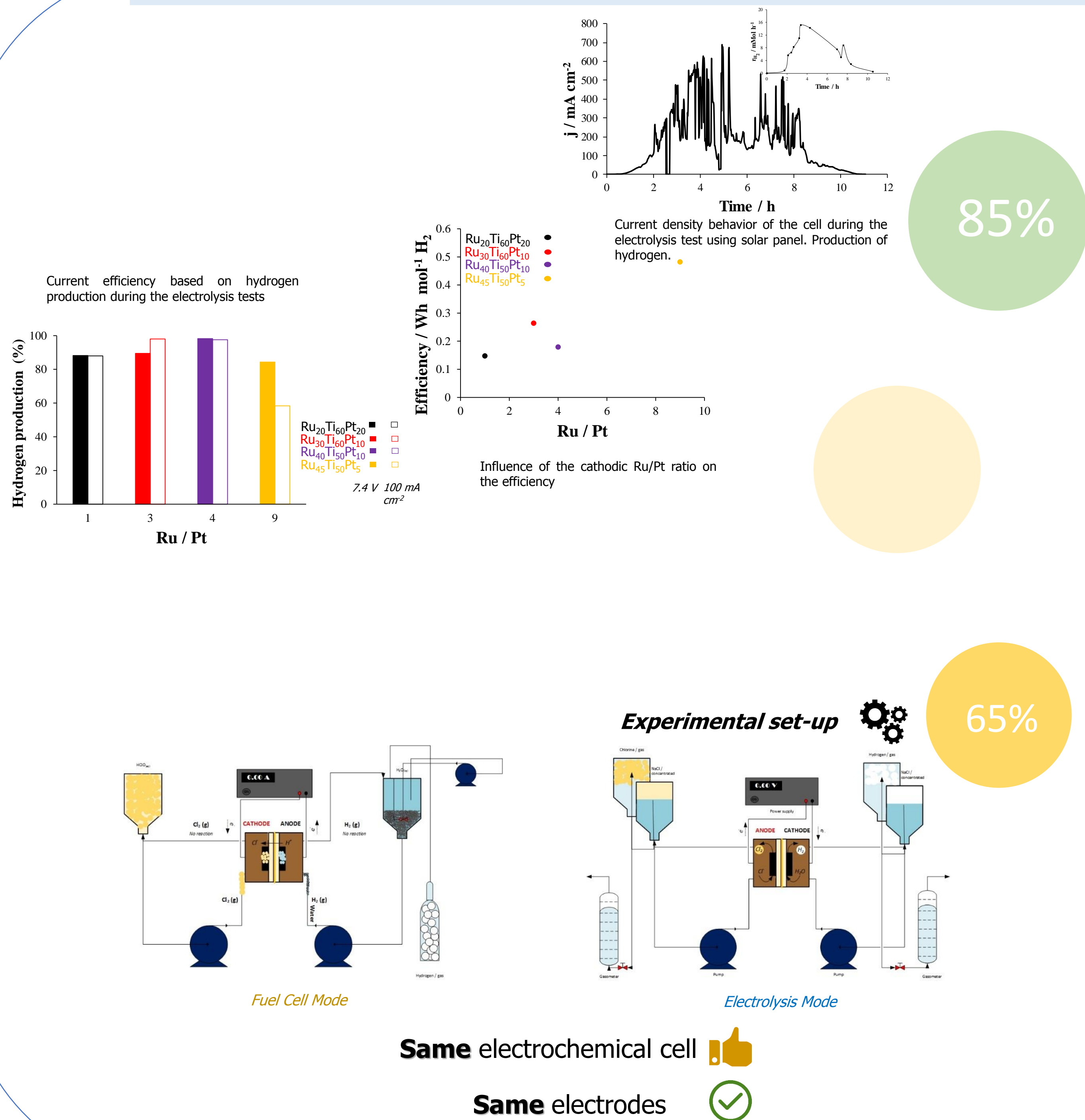
...new energy storage devices!

## AIMS

- To develop a reversible **Hydrogen-Chlorine** PEM Fuel Cell
- To produce and store **energy**

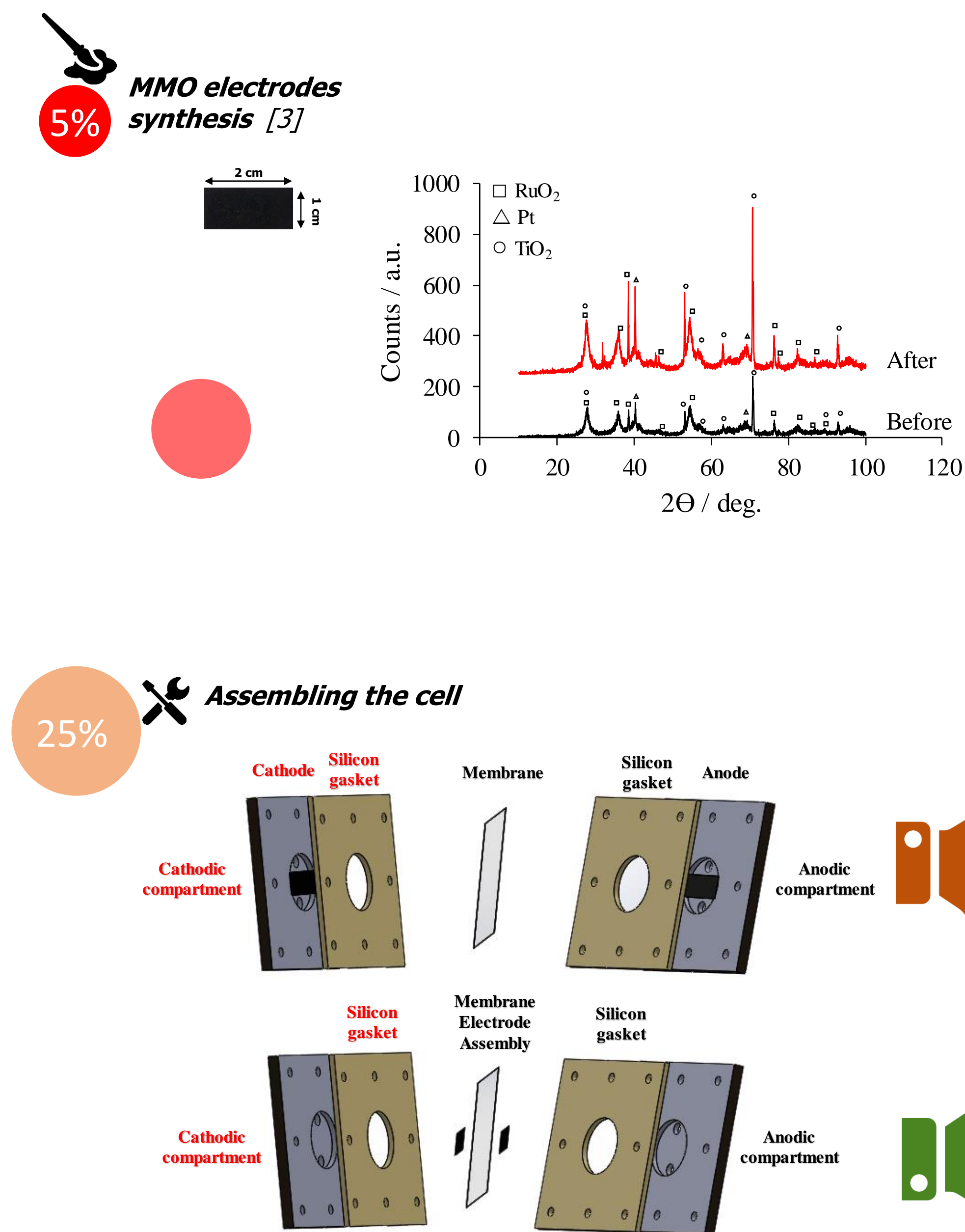


## METHODOLOGY



## LOADING

## RESULTS



## CONCLUSIONS

✓ Reversible chloralkaline cell operating successfully in both modes.

ELECTROLYSIS  $\rightleftharpoons$  FUEL CELL

🔌 Green energy has been produced by applying electrical energy to the cell from solar panels.

## REFERENCES

- [1] C.A. Grimes, O.K. Varghese, S. Ranjan. *Light, water, hydrogen: The solar generation of hydrogen by water photoelectrolysis*, (2008).
- [2] M. S. Thomassen, B. Børresen, G. Hagen, R. Tunold. *H<sub>2</sub>/Cl<sub>2</sub> fuel cell for cogeneration of electricity and HCl*, Journal of Applied Electrochemistry, 33 (2003), 9-13.
- [3] L.M. Da Silva, G. M. De Oliveira, M. De Salles, K.I.B. Eguluz, G.R. Salazar-Banda. *Influence of heating rate on the physical and electrochemical properties of mixed metal oxides anodes synthesized by thermal decomposition method applying an ionic liquid*, Journal of Electroanalytical Chemistry, 813 (2018), 127-133.

## ACKNOWLEDGEMENTS

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