

# Extracting Hydrogen Using Electrolysis & Storing it Using Ammonia

TEAM: 41

Hassan Almusabbeh CHE  
 Mohammad Gaw ME  
 Ali Alshakhs COE  
 Abdullah Alabduhmuhsin ISE  
 Mohammed Al Marzooq ISE

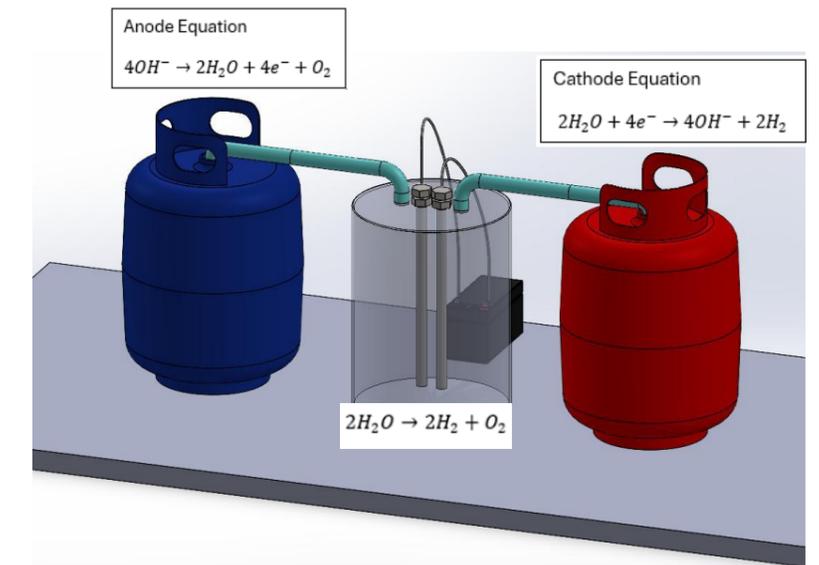
## Elevator Pitch:

Petrochemical and Energy Industries face a problem storing extracted hydrogen. **SO, FOR** Petrochemical and Energy Industries **WHO** need a reliable, efficient storage solution, Integrated Electrolysis, and Ammonia Storage System **IS A** hydrogen extraction and storage system **THAT** enables safe, efficient hydrogen storage. **UNLIKE** traditional hydrogen storage methods, **Integrated Electrolysis System** uses ammonia as a hydrogen carrier, offering a safer, more cost-effective solution.

## Objective:

The objective of this project is to extract Hydrogen from water and store it using Ammonia to be used as a power source.

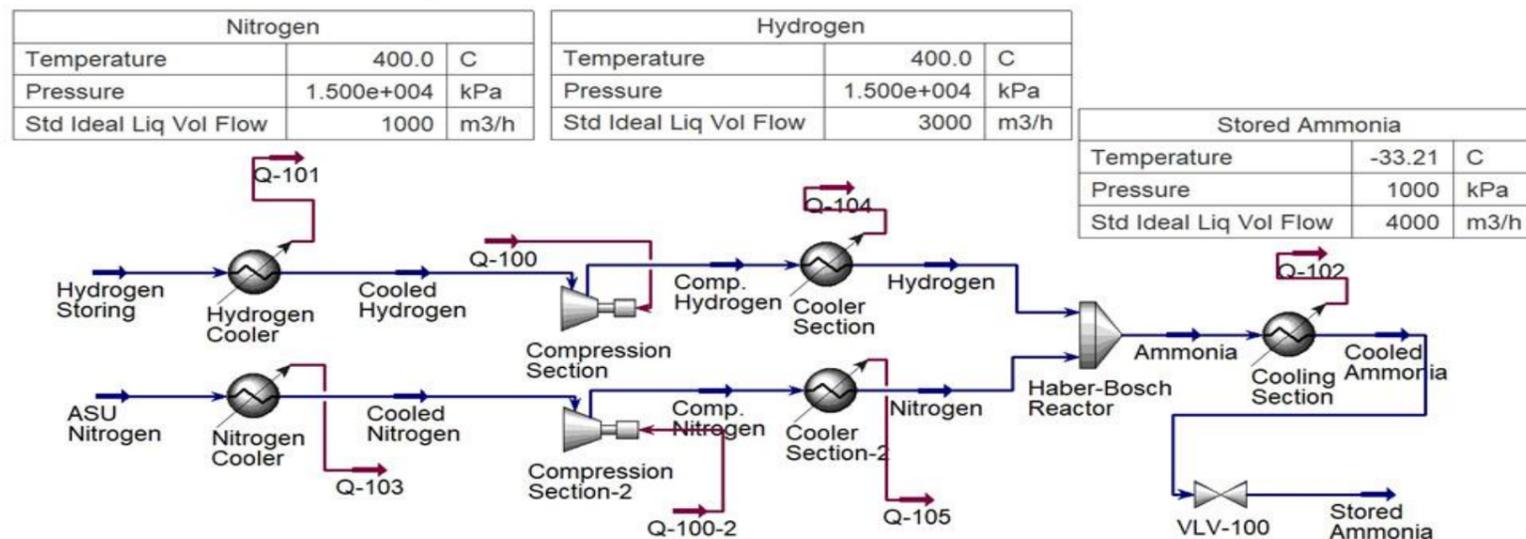
## Prototype Design



## Product Constraints & Specifications

<b>Haber-Bosch</b> Temp between 400-500 Pressure between 150-300 bar	<b>Water Type</b> Distilled Water	<b>Safety Features</b> 4 sensors
<b>Hydrogen PR</b> 0.5 - 5 L/Hr	<b>Storage Capacity</b> 8-10 bar for Ammonia Storage	<b>Power Supply</b> 12V, 2 - 5 A

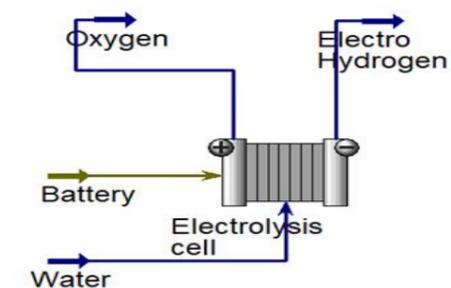
## Ammonia Storage System



## Project Impact:

The project will have a positive impact on the economy, society, and environment. It will create jobs, reduce reliance on fossil fuels, and decrease carbon emissions. The project is designed to be safe and efficient, and it will contribute to a more sustainable future.

## Electrolysis Cell



Electro Hydrogen		
Temperature	70.00	C
Pressure	100.0	kPa
Std Ideal Liq Vol Flow	1.000e-003	m3/h