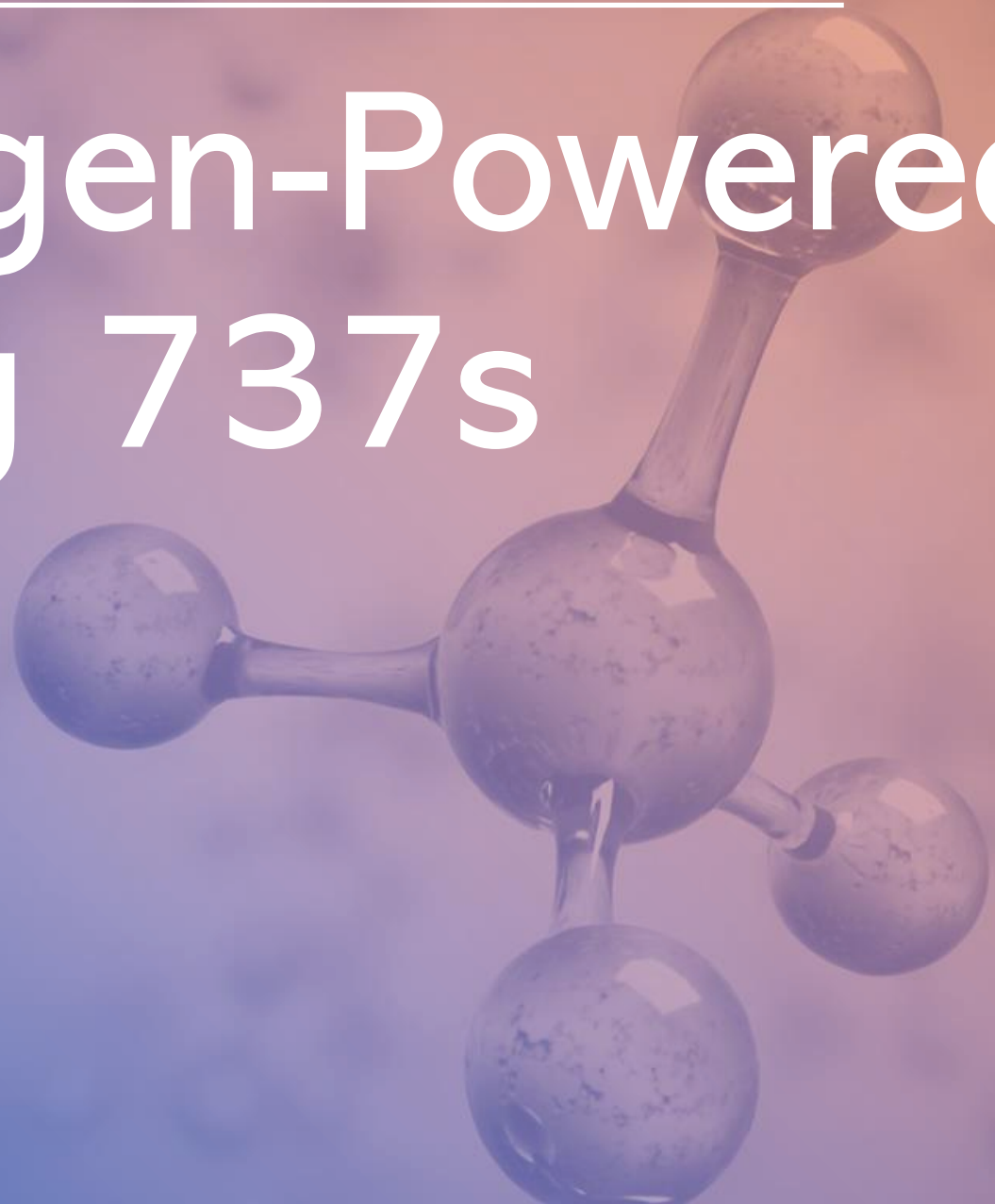
Hydrogen-Powered Boeing 737s



Engineer: Philon Yu

Course: Aerospace (Period 3)

Beneficiary: NASA

Date: 5/25/22

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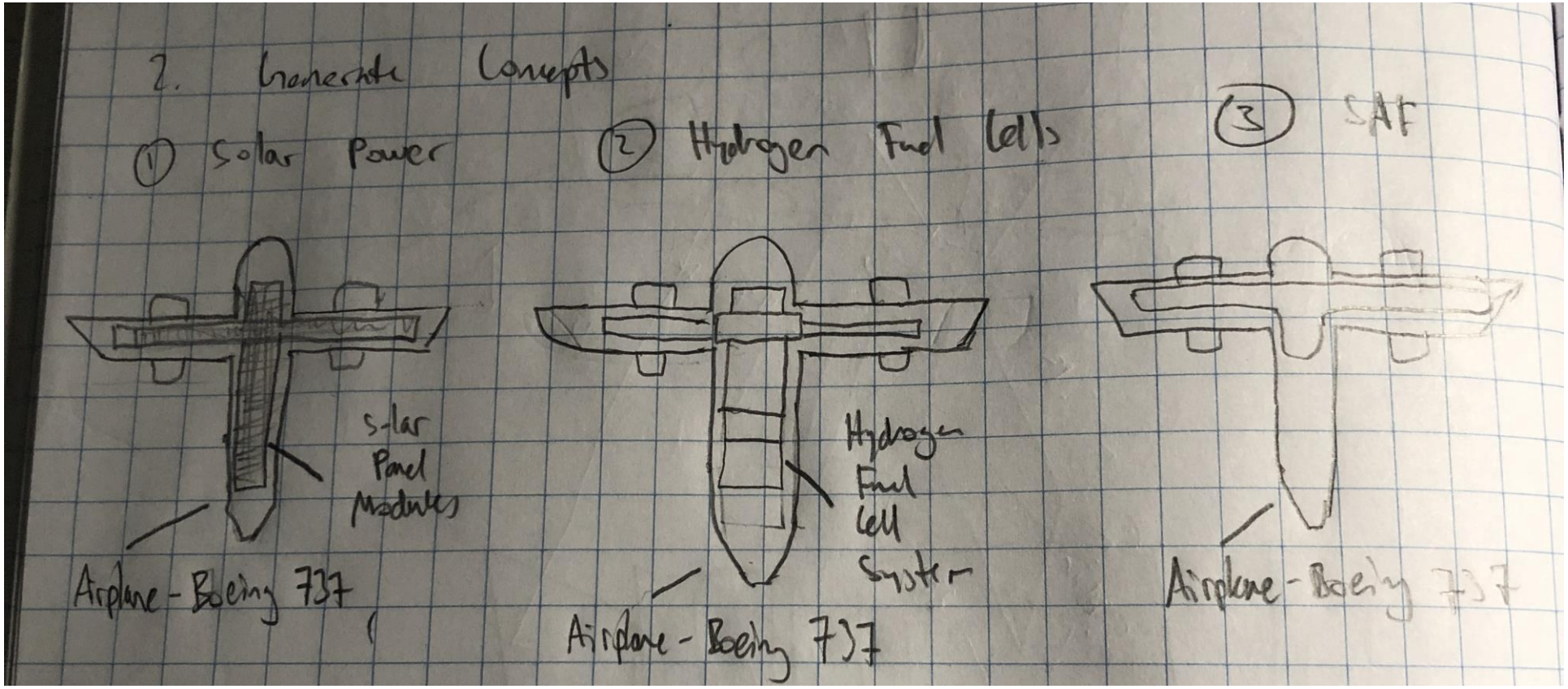
Design Brief

- Define the Problem: Design a new aircraft, or part of an aircraft, that would minimize the impact passenger planes have on the environment. Research what NASA is already doing then brainstorm new ways to accomplish this goal. How can we make aircraft more sustainable using new, green technologies. (Challenge 3)
- Resources
  - -MyPLTW
  - -Google
  - -Youtube
- Constraints
  - -Alternative energy source
  - -Innovative
  - -Benefit Environment
  - -Finished by May 25, 2022

Generating Concepts



Research

Solar Power

+ renewable energy and minimal green house gas emissions

-expensive, heavy, dependent on availability of sun, and inefficient

Hydrogen Fuel Cell

+renewable energy, minimal green house gas emissions, and efficient

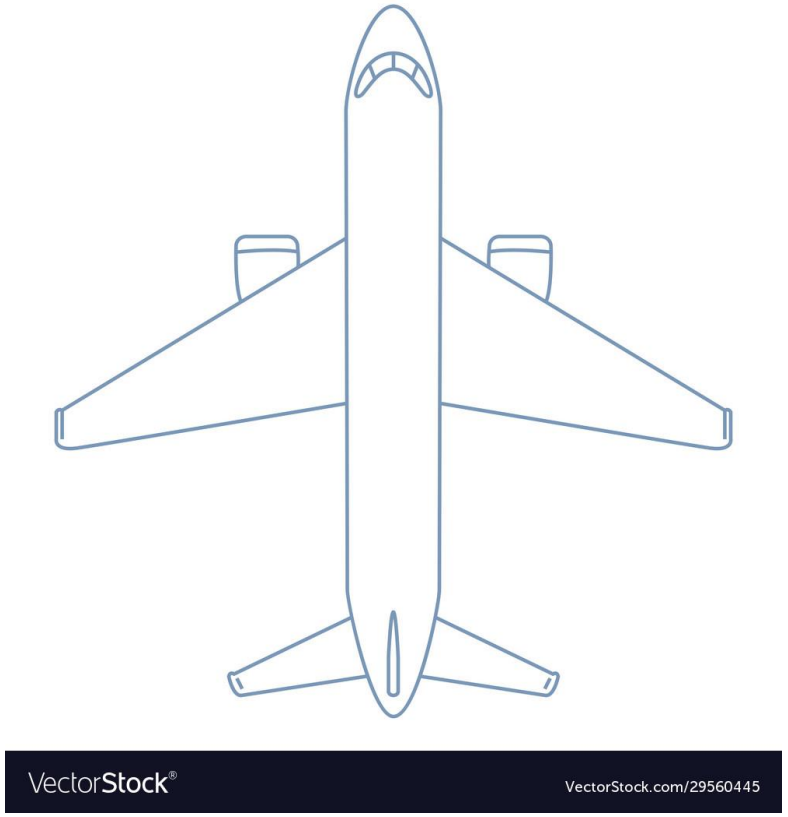
-expensive and takes space

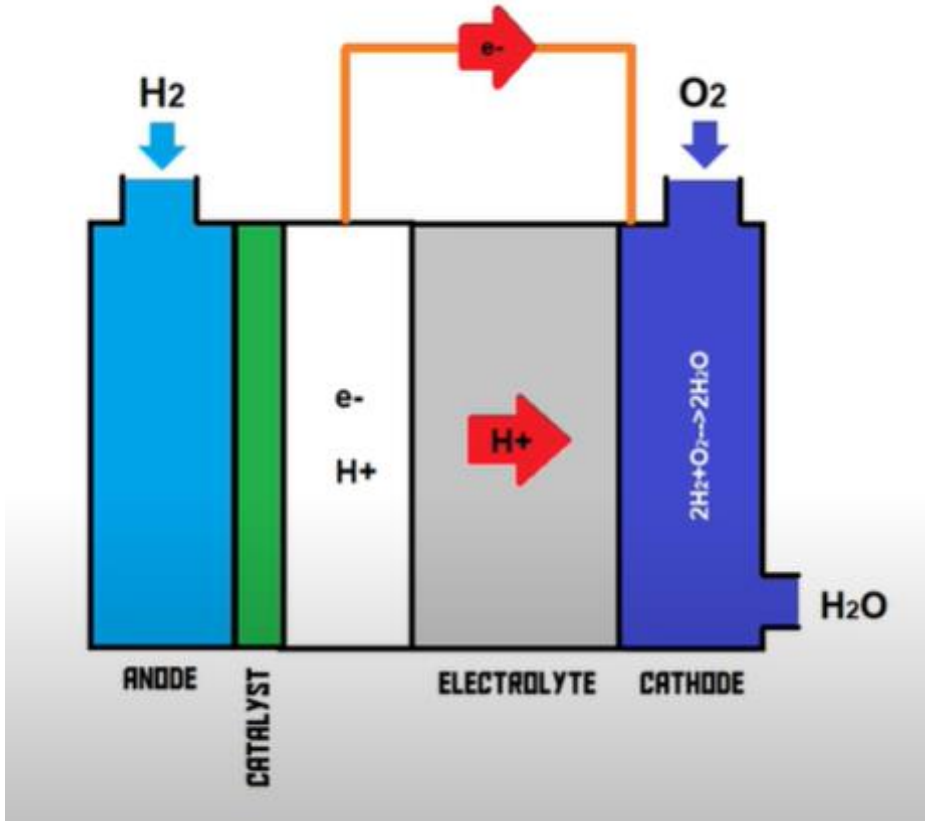
Sustainable Aviation Fuel

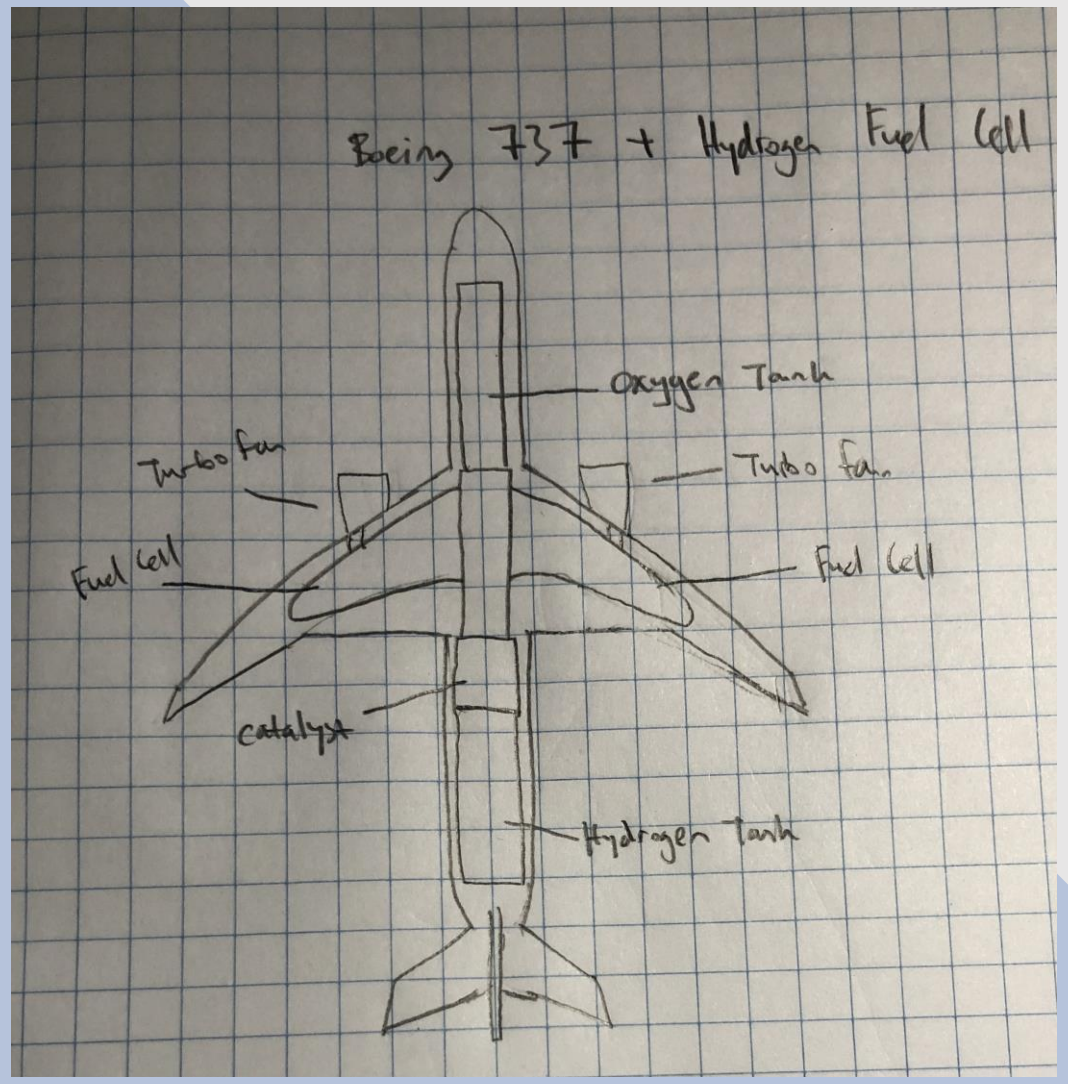
+easily implementable and efficient

-not innovative and expensive

Concepts Part 2







Develop Solution

Evaluate Solution

Although this is merely a rough idea of hydrogen powered 737, executing this idea would…

Pros

-mitigate most green house gas emissions

-decrease carbon footprint

-preserve ozone

Cons

-economically unsound

Citations

- https://www.twi-global.com/technical-knowledge/faqs/what-are-the-pros-and-cons-of-hydrogen-fuel-cells
- https://www.youtube.com/watch?v=9zgx-PIDEKA
- https://afdc.energy.gov/fuels/hydrogen_basics.html
- https://simpleflying.com/boeing-no-hydrogen-focus/