Electric Vehicles over Contemporary Combustion Engines

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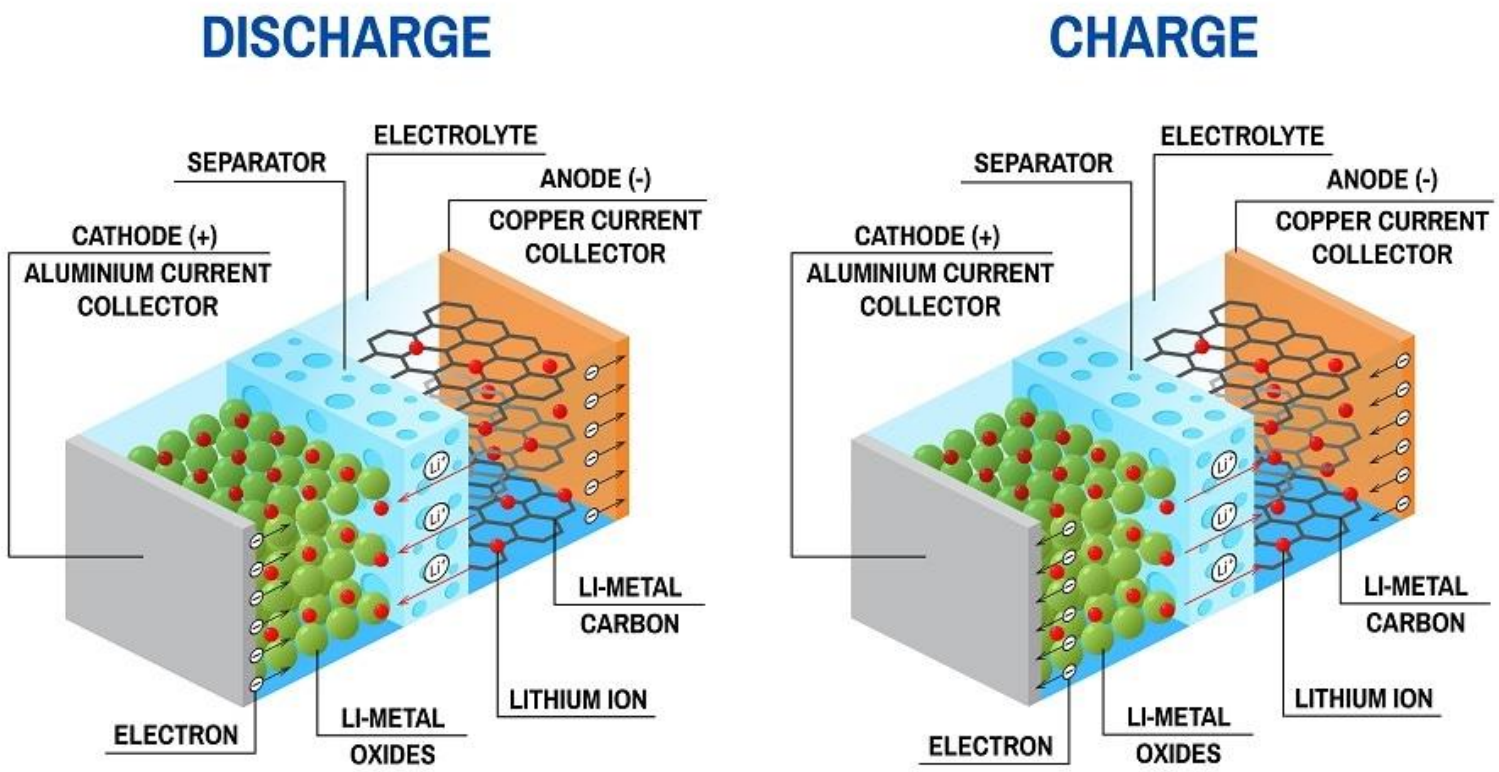
ELECTRIC CARS VS IC ENGINES (A COMPARISON)

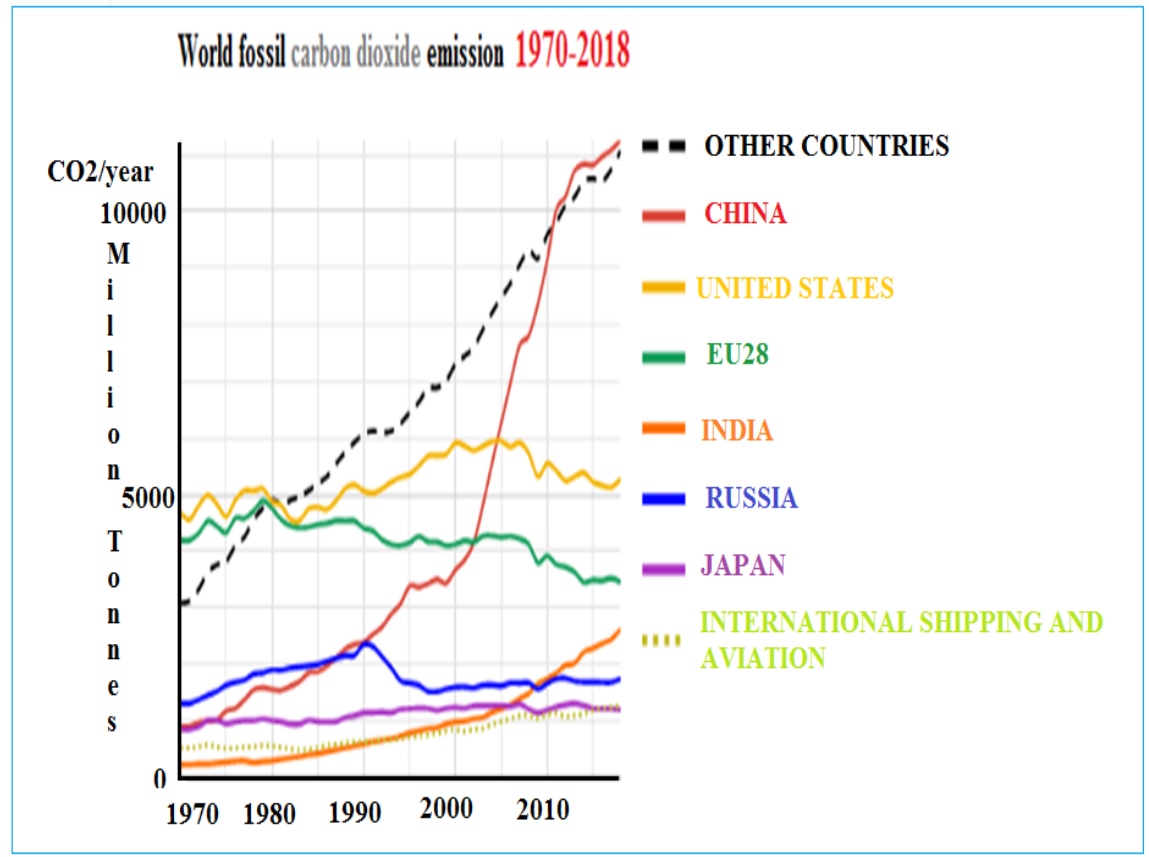
ELECTRIC CARS	IC ENGINES
• Just established in market	• BEEN THERE FOR ALMOST 80 YEARS.
• AUTONOMOUS SYSTEMS AND ELECTRIC CARS GO HAND IN HAND.	• DIFFICULT TO DEVELOP AUTONOMOUS SYSTEMS WITH IIC ENGINES.
• MORE EFFICIENT.	• LESS EFFICIENT.
• ELECTRIC CARS HAVE RELATIVELY LES WEIGHT THAN IC ENGINES.	• IC ENGINE POWERED CARS ARE HEAVY THAN ELECTRIC CARS.
• ELECTRIC CARS ARE QUIET.	• IC ENGINES TEND TO BE NOISY THAN ELECTRIC CARS.
• HAVE NO TAILPIPE EMISSION.	• WATSE FROM ENGINES ARE RELEASED AS SMOKE FROM TAILPIPE.
• LESS MOVING PARTS.	• LARGE NUMBER OF MOVING PARTS.
• HIGH ACCELARATION.	• LESS ACCELARATION.

Conventional Battery (Lead acid Battery)

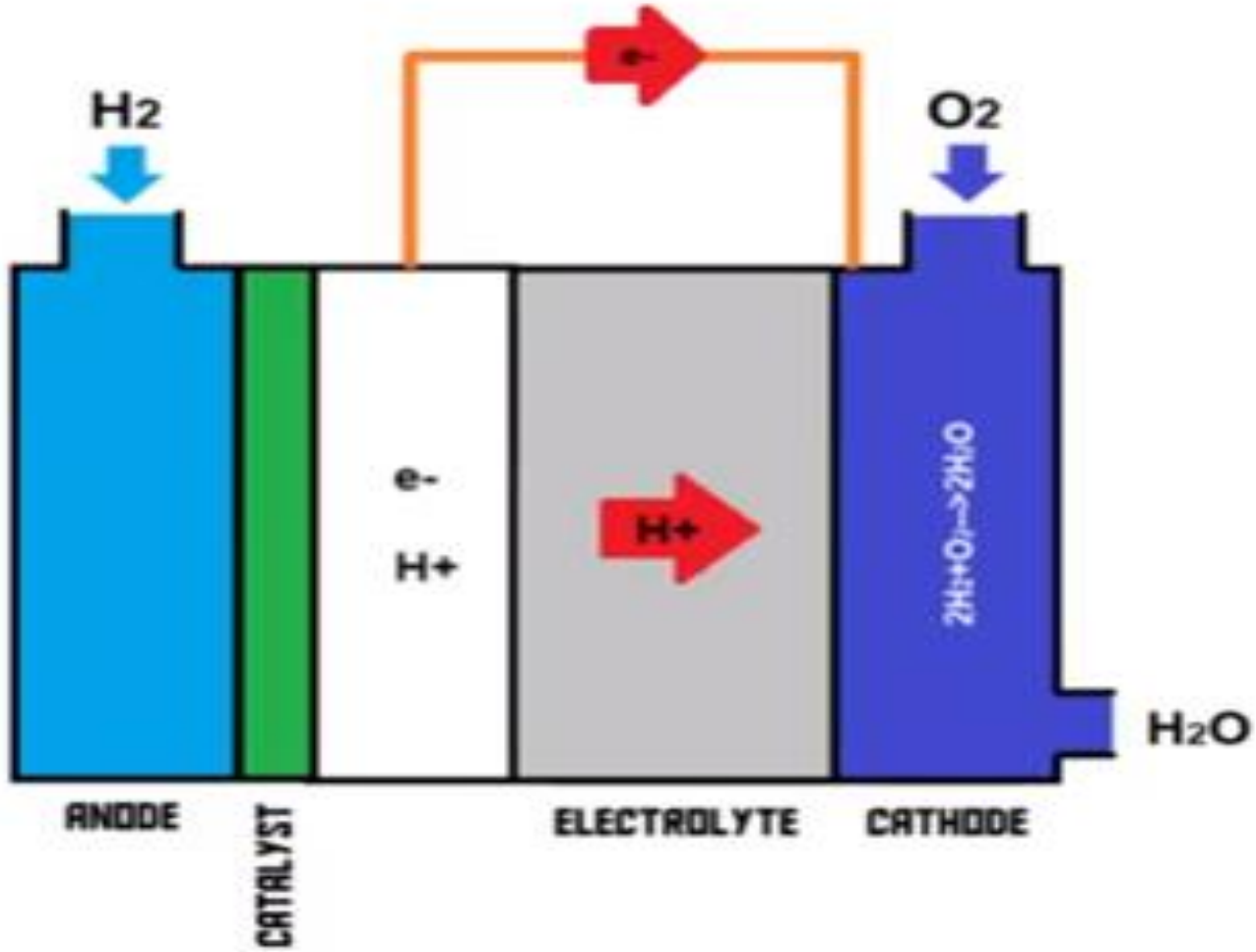
- Still being used very frequently as secondary storage in most automobiles.
- It is used because of it’s cheaper cost, simple to manufacture, reliable and also well understood technology.
- Also, it’s self discharge it among lowest in rechargeable battery systems.
- It is not used as primary battery in cars due to its, low watt per liter (i.e. it provides only 90 Wh/L while lithium ion provides 600 Wh/L). Also charging time of lead acid takes as long as 10 hours.

Lithium Ion Battery

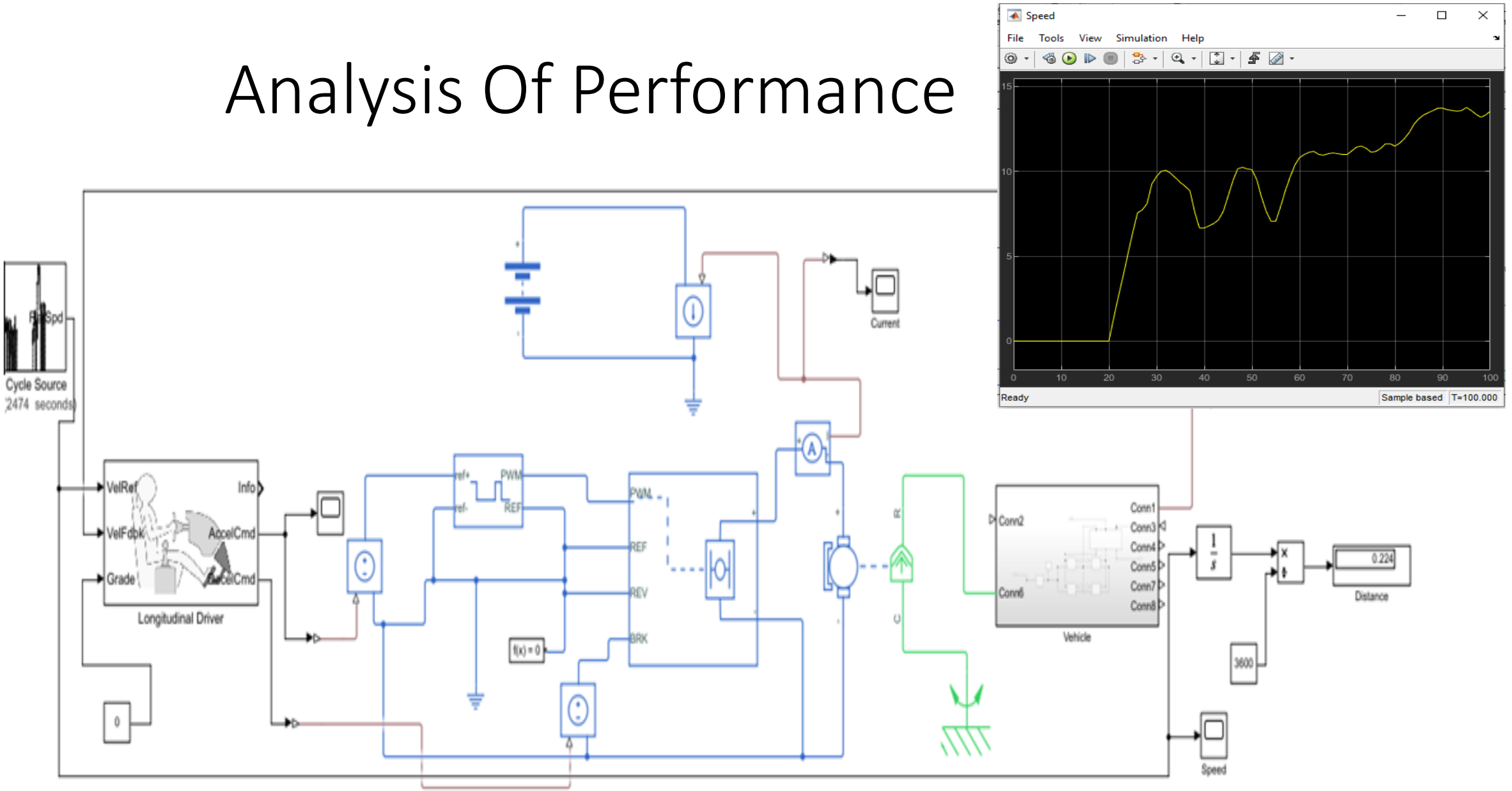



World fossil carbon dioxide emission 1970-2018
CO2/year
10000
Million Tonnes
5000
0
1970
1980
1990
2000
2010
OTHER COUNTRIES
CHINA
UNITED STATES
EU28
INDIA
RUSSIA
JAPAN
INTERNATIONAL SHIPPING AND AVIATION

Fuel Cell


H2
O2
e-
e-
H+
H+
2H2+O2→2H2O
H2O
ANODE
CATALYST
ELECTROLYTE
CATHODE

Analysis Of Performance



CONCLUSION

The electric vehicle has far more advantages than their I.C. engine counter parts. They are better for the environment as they run on renewable sources of energy. They are more reliable and have less maintenance as they have very few moving parts in their drivetrains as compared to their I.C. engine counterparts.Many researchers are working on increasing the durability and the reusability of the battery used in electric vehicles which in turn would make them more efficient and even more environmental friendly than now.

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