**Self – driving Car : Converting Manual transportation to Automatic transportation**

Autonomous vehicles, sometimes referred to as self-driving cars, use sensors, cameras, lidar, radar, and sophisticated software algorithms to navigate and run without the assistance of a driver. Their main objectives are to increase traffic flow, decrease accidents, improve road safety, and increase accessibility to transit. Beyond personal transportation, self-driving cars have a wide range of uses that are revolutionizing sectors including ride-sharing and logistics. They improve traffic patterns, lessen congestion, and cut emissions while providing effective mobility options for those with impairments. They are useful for urban planning, last-mile deliveries, and public transit because of their versatility. The cost of self-driving cars as of 2021 varies based on manufacturer, technology level, and features. Fully autonomous vehicles were still in development, and Tesla offered advanced driver-assistance features but not fully self-driving. The cost is expected to decrease as technology matures and widespread.

As a result of their elaborate sensor systems and complicated software, self-driving automobiles present special maintenance issues. For proper perception, lidar and cameras need to be calibrated and cleaned often. Software upgrades enhance driving behaviour and accommodate changing road conditions. Security measures and clearly laid out maintenance procedures guarantee a safe and dependable functioning. Fully autonomous self-driving cars operate without human intervention, allowing individuals without traditional driving skills to theoretically use them. However, basic understanding of the vehicle's user interface and emergency protocols is necessary for passengers' safety and confidence. This awareness is essential, even if not at the same level of expertise as traditional driving.

**Lithium–Air Batteries: Developing energy source for sustainable future**

Utilizing the chemical interaction between lithium and oxygen from the air, lithium-air batteries, an emerging energy storage technology, increase battery energy density. Utilizing the high energy density of lithium and the plentiful supply of oxygen in the atmosphere, this technology provides energy storage options that are more effective and long-lasting. High energy density lithium-air batteries provide longer range for electric vehicles and less frequent recharging. Additionally, they are essential for the effective storage of surplus energy from solar and wind power sources. By providing longer-lasting gadgets and expanded mission capabilities for aviation and space missions, this technology also improves portable electronics and aerospace applications. Specific cost information for lithium-air batteries was difficult to come by because the technology was still in the research and development stage. Emerging battery technology costs frequently depend on elements including manufacturing procedures, materials utilized, and production volume. It's important to note that cost savings are often predicted as the technology develops and ramps up.

Due to the reactivity of lithium and oxygen, lithium-air batteries have maintenance issues, including deterioration of the electrolyte and cathode. This significant issue decreases battery performance and calls for stability, appropriate cathode materials, and the prevention of contamination from moisture and carbon dioxide to preserve efficiency and increase cycle life. Due to its complex chemistry and materials, lithium-air batteries demand specialist knowledge for creation, use, and maintenance. The technology may not be necessary for end users to grasp, but manufacturers, researchers, and technicians engaged in battery production, integration, and maintenance must have a thorough understanding.