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Aluminum Fueling Station

timo kauppila

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Abstract:

The following public disclosure presents a comprehensive system and method for aluminum-based vehicle fueling, revolutionizing the way vehicles are powered. At the core of this innovation is a service station equipped with a cutting-edge dispensing system designed to fill vehicle fuel tanks with aluminum pellets or various shapes of aluminum. This approach enables on-board generation of hydrogen gas, which can be used in fuel cells to power vehicles. The system incorporates environmental consciousness, user convenience, safety measures, and fueling efficiency, making it a sustainable alternative to traditional fossil fuels.

Claims:

Claim 1: A system for aluminum-based vehicle fueling, comprising a service station equipped with a dispensing system designed to fill the fuel tanks of cars and other vehicles with aluminum pellets or other shapes of aluminum, enabling on-board generation of hydrogen gas for use in fuel cells.

Claim 2: The system of Claim 1, wherein the dispensing system is configured to efficiently deliver aluminum feedstock to vehicles, ensuring minimal environmental impact and optimizing the efficiency of the aluminum-gallium reaction within the vehicle's system.

Claim 3: The system of Claims 1-2, further comprising a control interface allowing users to select the desired quantity and form of aluminum feedstock for their vehicles, promoting flexibility and convenience during the fueling process.

Claim 4: The system of Claims 1-3, wherein the dispensing system is equipped with safety features to prevent spillage or mishandling of aluminum pellets during the fueling process, ensuring the secure and controlled delivery of feedstock.

Claim 5: A method for aluminum-based vehicle fueling at a service station, comprising the steps of positioning a vehicle adjacent to the dispensing system, selecting the desired amount and form of aluminum feedstock, and filling the vehicle's fuel tank with aluminum pellets or other shapes of aluminum to facilitate on-board hydrogen gas generation.

Claim 6: The method of Claim 5, wherein the aluminum feedstock is securely and efficiently delivered to the vehicle's fuel tank, minimizing environmental impact and optimizing the efficiency of the aluminum-gallium reaction within the vehicle's system.

Claim 7: The method of Claims 5-6, wherein the vehicle's fuel tank is designed with features to facilitate the efficient loading and containment of aluminum feedstock during the fueling process.

Claim 8: A fueling card or electronic device associated with a user, configured to interface with the service station's control interface, allowing for seamless selection and payment for aluminum feedstock, enhancing the user experience and promoting widespread adoption of aluminum-based vehicle fueling.

Claim 9: The method of any of Claims 5-8, further comprising monitoring systems to track and manage aluminum feedstock inventory at the service station, enabling timely replenishment and ensuring continuous availability for vehicle fueling.

Claim 10: A method for establishing and operating an aluminum-based vehicle fueling service station as described in any of Claims 1-9, providing a sustainable and efficient alternative for vehicle fueling, reducing dependence on traditional fossil fuels.