MiCoPower’s High Efficiency Solid Oxide Fuel Cell Wins the Grand Prize at H2 Innovation Awards at H2 MEET 2023

First Prize winners in other categories are JM International, Doosan Fuel Cell, and Korea Carbon Industry Promotion Agency.

MiCoPower’s booth at the H2 Innovation Award, where it secured the grand prize Photo by AVING NEWS

GOYANG, GYEONGGI, REPUBLIC OF KOREA, September 21, 2023 /EINPresswire.com/ -- MiCoPower's "High Efficiency Solid Oxide Fuel Cell" was named the top innovation at H2 MEET 2023.

The H2 MEET Organizing Committee (Chairman Kang Nam-hun, co-chair of the Korea Automobile Manufacturing Association, hereinafter “Organizing Committee”), comprising the Korea Automobile Manufacturing Association (KAMA), the Hydrogen Convergence Alliance (H2KOREA), the Hydrogen Energy Network (HYNET), the Korea Energy Agency, and the Korea Industry Alliance Forum (KIAF), unveiled the eight exceptional winners of the H2 Innovation Awards on Wednesday, March 13. These awards celebrate the pinnacle of innovative technologies in the hydrogen industry and were presented at H2 MEET 2023, the largest global exhibition dedicated to hydrogen technologies.

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> *Tae-hyung Ha, CEO of MiCoPower*

The H2 Innovation Awards, now in its third year, is hosted by the Organizing Committee and jointly organized by H2KOREA, the Korea Energy Agency, and the Korea Evaluation Institute of Industrial Technology to promote industrial development by recognizing pioneering technologies in the hydrogen sector, fostering innovation, and facilitating technology exchange within the industry.

A total of more than 40 companies competed for this year's awards, and the winners were selected by a review panel of industry experts who evaluated them in terms of four categories: innovation, technology, merchandising and progress.

As a result, the grand prize was awarded to the "high efficiency solid oxide fuel cell" produced by MiCoPower Co., Ltd (CEO Tae-hyung Ha). In the hydrogen production category, the first prize was awarded to the "hydrogen production reforming catalyst" produced by JM International Inc. (CEO Kim Gyeong-ha, Kim U-yeon), and the first prize in the hydrogen storage and transportation category was awarded to the "composite pressure vessel for high pressure hydrogen transportation" produced by the Korea Carbon Industry Promotion Agency (General Director Bang Yun-hyeok). In addition, the first prize in the hydrogen utilization category was awarded to the "hydrogen fuel cell-5CSA" produced by Doosan Fuel Cell Co., Ltd (CEO Je Hu-seok).

MiCoPower's solid oxide fuel cell, which won the grand prize at the H2 Innovation Awards, displayed in the booth Photo by AVING NEWS

Panels explaining MiCoPower's products Photo by AVING NEWS

The H2 Innovation Awards ceremony took place on the afternoon of the 13th at H2 MEET 2023, held at KINTEX in Goyang-si, Gyeonggi-do.

"The importance of hydrogen as an essential energy source for achieving carbon neutrality cannot be overemphasized, and technological innovation is paramount for the sustainable future of the hydrogen industry," said Kang Nam-hun, Chairman of the H2 Innovation Awards. "The H2 Innovation Awards will continue to serve as a platform for discovering innovative technologies to jointly build the hydrogen value chain and create an environment for growth."

Grand Prize (Utilization Category): MiCoPower's "High Efficiency Solid Oxide Fuel Cell"

At the ceremony, Tae-hyung Ha, CEO of MiCoPower, said, "MiCoPower's high-efficiency fuel cell technology is expected to open a new horizon for fuel cell utilization and economics, which has been a major industry concern." He further added, "It is even more meaningful to receive a prestigious award for a homegrown Korean technology at the H2 Innovation Awards, a comprehensive technology awards ceremony in the hydrogen industry, and we will continue to take on the challenge of creating a better world for future generations."

MiCoPower's "high efficiency solid oxide fuel cell," which boasts the highest certified power generation efficiency in Korea at 63.3%, was highly praised by the award review panel for the successful development and mass-production of the entire cycle process, from single cell to stack to system, with the company's own technology. Furthermore, the product is modularized to allow for flexible increases in power generation capacity, and a fuel recycling system is integrated to ensure that no residual energy is wasted, enhancing overall efficiency and durability.

First Prize (Production Category): JM International's "Hydrogen Production Reforming Catalyst"

JM International's "hydrogen production reforming catalyst," which won the grand prize in the hydrogen production category, was recognized for its price competitiveness, which is due to the 75-80% reduction in the amount of precious metals used while maintaining the same performance. This was achieved by applying a catalyst coating to the surface to compensate for the shortcomings of existing pellet-type catalysts that use precious metals which are expensive to produce. Particularly noteworthy is the insulation of the supporting components within the catalyst, which are engineered to withstand thermal shock at high temperatures while maintaining exceptional thermal efficiency. In addition, the use of organic materials in the manufacturing process eliminates the need for costly chemical dust collection equipment, making it safe for human use and easy to manufacture.

First Prize (Storage and Transportation Category): "Composite Pressure Vessel for High-Pressure Hydrogen Transportation" produced by the Korea Carbon Industry Promotion Agency

Korea Carbon Industry Promotion Agency's "composite pressure vessel for high-pressure hydrogen transportation," which won the grand prize in the hydrogen storage and transportation category, is an ultra-large pressure vessel designed for tube trailers for hydrogen transportation and which uses domestic carbon fiber material to secure price competitiveness. In addition, even with an operating pressure of 530 bar, a volume of 1,700 liters and a hydrogen storage capacity of 56 kilograms, the vessel weighs less than 875 kilograms, making it more competitive for transportation. When applied to hydrogen transportation, a 20-foot skid consisting of 9 containers weighs only 10 tons, including 500 kg of hydrogen, while a 40-foot skid has the capacity of 1 ton of hydrogen per trip while keeping the skid weight below 20 tons.

First Prize (Utilization Category): Doosan Fuel Cell's "Hydrogen Fuel Cell-5CSA"

Doosan Fuel Cell's "hydrogen fuel cell-5CSA," honored with the Grand Prize in the Hydrogen

Utilization Category, represents a clean energy source that uses hydrogen, natural gas, and LPG to generate electricity and heat, and has notably increased output to 550~660 kW, compared to 440 kW for existing products, thereby reducing power generation costs and improving production efficiency. 5CSA excels in energy conversion efficiency, emitting only pure water as a by-product, and produces no noise and low emissions compared to conventional power generation methods, especially when hydrogen is used as a fuel, thus enabling zero-emission power generation.

In addition to the grand prize and the first prize, the second prize was awarded to LightBridge, Inc. (modular hydrogen electrolysis system and stack) and Emerson Electric Co. (hydrogen electrolysis device application “Emerson digital twin”) in the hydrogen production category, Hydrolux Co., Ltd (home emergency generator) in the hydrogen storage and transportation category, and Samjung ENC Co., Ltd (hydrogen gas control panel) in the hydrogen utilization category.

Winning companies will receive cash prizes (10 million won for the grand prize and 5 million won for the first prize), plaques and certificates, as well as advertising support and the opportunity to display the award-winning company certification mark on their booths at the exhibition center.

Meanwhile, H2 MEET (Mobility + Energy + Environment + Technology) is a specialized hydrogen industry exhibition for domestic and foreign companies and institutions in the fields of hydrogen production, hydrogen storage and transportation, and hydrogen utilization. The event is organized by the H2 MEET organizing committee, with main sponsors Chevron Corporation, TUV Rheinland, BP, Korea Hydro & Nuclear Power, Forvia, and the Korea Conformity Laboratories. During the exhibition, the K-BATTERY SHOW 2023 was held in conjunction with the Secondary Battery Materials, Parts and Equipment Exhibition.

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