Hydrone Xc05 by Tianmushan Laboratory Wins Gold A' Aerospace and Aircraft Design Award

Hydrogen Powered Unmanned Aerial Vehicle Recognized for Long Endurance and Extreme Cold Resilience



Hydrone Xc05

COMO, CO, ITALY, September 8, 2026 /EINPresswire.com/ -- The A' Design Award has announced Hydrone Xc05 by Tianmushan Laboratory as a Gold winner in the Aerospace and Aircraft Design category. The A' Aerospace and Aircraft Design Award is one of the highly respected and well-recognized honors in the field of aircraft design, evaluating entries through a rigorous blind peer-review process conducted by an expert jury panel. This Gold A' Design Award acknowledges Hydrone Xc05 as an outstanding example of good design within the aerospace and aircraft industry. The recognition highlights the considerable engineering work invested in developing a hydrogen powered unmanned aerial vehicle suited to demanding operational conditions. The distinction positions the work among notable contributions to contemporary aircraft design.

The A' Aerospace and Aircraft Design Award holds relevance for the broader industry because unmanned aerial vehicles have become vital tools across numerous sectors, yet traditional battery powered models remain limited in endurance and cold weather performance. Hydrone Xc05 addresses these constraints by extending flight time and enabling reliable operations in harsh environments. The design aligns with the industry movement toward cleaner propulsion and greater autonomy. For operators in logistics, inspection, and remote missions, the work offers practical utility through extended range and adaptable power systems. These qualities reflect current needs for efficient, smart, and safe aerial platforms.

Hydrone Xc05 distinguishes itself through a combination of hydrogen propulsion and intelligent navigation. The vehicle flies more than 100 kilometers beyond visual line of sight and operates for three hours, while ultra low temperature adaptive technology allows reliable performance down to minus 40 degrees Celsius. As the first system of its kind to combine a quick detachable fuel cell with seamless switching between hydrogen and electric modes, it adapts to diverse and complex scenarios. An aviation artificial intelligence model works alongside laser and visual fusion navigation, enabling autonomous operation without reliance on manual control or satellite signals. The seamless carbon fiber airframe features an aerodynamic, streamlined profile, while foldable arms and landing gear reduce storage volume by 70 percent.

This Gold A' Design Award recognition may inform future projects at Tianmushan Laboratory and support continued exploration in green propulsion, autonomous flight, and resilient design. The achievement serves as encouragement for the research team to pursue further innovation in endurance, environmental adaptability, and intelligent systems. By establishing new reference points for multirotor unmanned aerial vehicle performance, the work may contribute to evolving industry practices. The distinction reinforces the laboratory commitment to advancing aviation science and technology.

Team Members
Hydrone Xc05 was developed by a dedicated team at Tianmushan Laboratory, including Weiqiang Xu, Ding Gao, Qing Shi, Jian Wang, Zhigang Zeng, and Liang Cheng, who together contributed to the engineering, system integration, and design refinement of the hydrogen powered unmanned aerial vehicle.

Interested parties may learn more about Hydrone Xc05, view its features, and explore the work of its creators at the dedicated page on the A' Design Award website.
https://competition.adesignaward.com/ada-winner-design.php?ID=179050

About Tianmushan Laboratory
Tianmushan Laboratory is a new type of research and development institution in Zhejiang Province, China, based on the Sino-French School of Aeronautics of Beihang University and Beihang University. In response to major national strategic demands and in line with Zhejiang Province's Strong Manufacturing Province strategy and the 14th Five-Year Plan for the Development of Zhejiang Province's Aerospace Industry, the laboratory works to break through fundamental theories and technical principles. It has established research centers including the Green Civil Aircraft Intelligent Design Center, the Green Civil Aviation Engine Integrated Design Center, the High-Performance Aviation Materials and Advanced Manufacturing Center, and the Intelligent Flight Management and Onboard Energy Integration Center. The laboratory carries out original innovation research with international influence, addressing key core technologies and promoting the integration of industry, academia, and research to support Zhejiang Province in becoming one of the leading aviation manufacturing provinces in China.

About the Gold A' Design Award Recognition
The Gold A' Design Award is granted to designs that demonstrate a high level of innovation and a meaningful impact on their intended audience. Within the Aerospace and Aircraft Design category, entries are assessed against criteria including innovative use of materials, aerodynamic efficiency, fuel efficiency, safety measures, integration of technology, environmental impact, aircraft performance, design aesthetics, versatility of design, and manufacturing process. Recognized as a notable achievement by the A' Design Award, Gold honored designs reflect a visionary approach and the considerable skill of their creators. These works serve as reference points for excellence, encouraging further innovation across art, science, design, and technology. The designation acknowledges solutions that deliver substantial value and advance the standards of their field.

About A' Design Award
The A' Aerospace and Aircraft Design Award is a respected aircraft design competition that welcomes a diverse range of participants, from aircraft designers and design agencies to companies and brands operating within the aerospace and aircraft industries. Participants have the opportunity to demonstrate their creativity, gain international recognition, and be commended for their aircraft design capabilities, contributing to the progress of the industry and inspiring future trends. Entries are evaluated through a blind peer-review process by a world class jury panel of design professionals, aircraft industry experts, journalists, and academics, based on pre-established evaluation criteria. Organized since 2008 and now in its 18th year, the A' Design Award is an international and juried design competition held across all industries and open to entries from all countries, driven by a philanthropic mission to recognize and promote superior products and projects that benefit society and help create a better world. Interested parties may learn more about the A' Design Award, explore the jury members, view past laureates, and take part with their projects at the following url: https://aircraftdesignawards.com

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