



## H2SCAN DIGEST

# Welcome to the December 2022 issue of the H2scan Digest.

We hope everyone is having a wonderful holiday season so far, and that you continue to enjoy the festivities with your loved ones throughout the rest of the year.

### In this issue we present:

- H2scan's GRIDSCAN 5000 Becomes First On-Line Transformer Health Hydrogen Monitoring Sensor to Receive FM Approval
- Julie Feng Discusses Dissolved Gas Analyzers
- RE+ Interview with Traci Hopkins and Alan Ross
- Jeff Donato Sheds Lights on Hydrogen Management in Battery Rooms
- Houston Power Outage Triggers Boil Water Notice for Millions
- Hydrogen Tomorrow News
- Upcoming Tradeshow and Conferences

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## H2scan's GRIDSCAN 5000 Becomes First On-Line Transformer Health Hydrogen Monitoring Sensor to Receive FM Approval

We're excited to announce that H2scan has become the first company to receive FM Approval for a hydrogen sensor with our GRIDSCAN 5000 product. Utilized in transformer monitoring, the H2scan GRIDSCAN 5000 Hydrogen Sensor pairs a high performance ASIC to H2scan's field-proven solid-state hydrogen sensor. FM Approvals is the independent testing arm of international insurance carrier, FM Global. FM Approvals uses scientific research and testing to ensure products conform to the highest standards for safety and property loss prevention. It is our mission to equip the industrial market with safe, affordable, and effective hydrogen sensing technology, and the GRIDSCAN 5000 receiving this reputable industry approval is an integral part of that vision. Read the press release [here](#).



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## Julie Feng Discusses Dissolved Gas Analyzers

The Asia Pacific dissolved gas analyzers (DGA) market is expected to reach USD 1.11 billion by 2024. H2scan's Julie Feng explains how incorporating real time DGA analytics aids companies in detecting faults in power transformers at the onset instead of weeks or months later. Read her full article entitled "Monitoring Technology of Dissolved Hydrogen in Transformer Oil" by clicking [this link](#).



# TRANSFORMER TECHNOLOGY<sup>COMM</sup>

## RE+ Interview with Traci Hopkins and Alan Ross

H2scan's Alan Ross interviews Traci Hopkins, H2scan's Sales Manager for Central and South America, about H2scan's role in the hydrogen economy, women in power systems, and much more. Watch the full video by clicking the image below.



# Jeff Donato Sheds Light on Hydrogen Management in Battery Rooms

Jeff Donato, Director of Safety, Power Storage Systems for H2scan, explains the ins and outs of hydrogen management in battery rooms in his recently published article in Transformer Technology. Learn how best practice standards state that you must deal with hydrogen in battery rooms, and much more, by clicking the image below.



**Hydrogen Management in Battery Rooms**

Jeff Donato is the Senior Vice President of Sales and Marketing at H2scan, a company that specializes in hydrogen management solutions for battery rooms. Jeff has over 20 years of sales and management experience in the industrial battery industry, representing safety and compliance products in the datacenter, utility, and telecommunications applications. Jeff is an active member of the IEEE Power & Energy Society and is the current chair of working group 1070 in the Energy Storage and Stationary Battery Committee (ESBC). Jeff is also a member of several other IEEE working groups including alternative energy storage technologies and the nuclear working group. He has provided on-site power system, environmental health & safety training to engineering, architect and OEM manufacturing firms and delivered extensive training to end users and specifying engineers.

Best practice standards such as IEEE documents and fire code state that you must deal with hydrogen in one of two ways: 1) Prove the hydrogen evolution of the battery (using IEEE 1635 / ASHRAE 21), or 2) have continuous ventilation in the battery room. Vented Lead Acid Batteries (VLA) are always venting hydrogen through the flame arrestor at the top of the battery and have increased hydrogen evolution during charge and discharge events. Vented Lead Acid Batteries (VLA) batteries are 95-99% recombinant normally, and only periodically vent small amounts of hydrogen and oxygen under normal operating conditions. However, both types of batteries will vent more hydrogen during equalize charging or abnormal charge conditions.

To prevent fires and explosions, best practice standards such as IEEE documents and fire code state that you must deal with hydrogen in one of two ways: 1) Prove the hydrogen evolution of the battery (using IEEE 1635 / ASHRAE 21) or 2) have continuous ventilation in the battery room.

Vented Lead Acid (VLA) and vented Ni-Cad (Ni-Cad) batteries are either fully vented or partially recombinant battery types (Figure 1). They are batteries with free-flowing liquid electrolyte that allows any gasses generated from the battery during charging to be directly vented into the atmosphere. Partially recombinant batteries will contain a catalyst device in place of the flame arrestor and will result in half of the hydrogen released into the atmosphere. In abnormal conditions, greater amounts of hydrogen gas will be released into the atmosphere.

Lead Acid Vented Lead Acid Battery Fig. 1

Figure 1. VLA Cell Vented Lead Acid Battery

# Houston Power Outage Triggers Boil Water Notice for Millions

Late November, the nation's fourth-largest city — Houston — was put under a boil-water notice after a power outage at the city's water treatment plant triggered a drop in pressure that knocked out the delivery of safe drinking water for more than 2.2 million people. The outage occurred because two electrical transformers failed to deliver power at the East Water Purification Plant and officials were not able to turn on backup generators.

This event shines a bright light on vulnerabilities in the Southeast's sprawling water systems and ties to the electric grid. Last year, a deep freeze across the South hamstrung the region's grid and triggered boil-water notices and evacuations, and millions of Houston residents were placed under a boil-water notice due to a drop in water pressure.

H2scan's simple solution for monitoring hydrogen in transformers may have been able to provide an easy way to monitor the real time health of the city's transformers and avoid this type of outage. The H2scan GRIDSCAN 5000 Hydrogen Sensor pairs a high-performance ASIC with H2scan's field-proven solid-state hydrogen sensor to ensure the safety and effectiveness of transformers, battery rooms, industrial processes, and more. Learn more about the GRIDSCAN 5000 [here](#).

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## Hydrogen Tomorrow News

Houston Blames Water Outage on Failure of Backup Transformer: Houston's citywide water outage stemmed from the failure of two electrical transformers at a key treatment complex that prevented officials from turning on backup generators.

Centrica Sets Out To Develop A "UK Hydrogen Economy": Energy giant Centrica and Ryze Hydrogen will jointly build and operate hydrogen production facilities aimed at providing a reliable supply of hydrogen for industry and transportation.

British Airways, United aim to use hydrogen-powered planes for short-haul flights within decade: British Airways and United Airlines are both aiming to begin using hydrogen-

powered planes for short-haul flights beginning around 2030 as both airlines embark on their journey toward net-zero by 2050, the airlines' sustainability leaders said Nov. 30.

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## Upcoming Tradeshows and Conferences

### TechCon North America 2023

TechCon® North America Training and Expo has a trusted history of providing industry experts to lead discussions on the technical development and solutions which improve key high voltage maintenance programs and asset management strategies for the aging electrical grid infrastructure. This year, the conference will be taking place in Charlotte, North Carolina between January 31 and February 2, 2023. As the coffee sponsors of the event, we'd love for you to visit us and chat over a cup. Register [here](#).



### Hydrogen & Fuel Cell Seminar

Save the date: See H2scan at the Hydrogen & Fuel Cell Seminar which is the most established and dynamic hydrogen energy and fuel cell conference in the U.S., bringing together hundreds of international manufacturers, fuel providers, customers, policy makers, supply chain, integrators, academics, investors, media, and other key stakeholders. The next seminar will take place in Long Beach, California, between February 7-9, 2023. Learn more [here](#).

# HYDROGEN & FUEL CELL SEMINAR

## DistribuTECH International

Save the date: H2 scan will participate in DistribuTECH International, the leading annual transmission and distribution event for utilities, technology providers, and industry leaders. The next event will be taking place in San Diego, California, at the San Diego Convention Center between February 7-9, 2023. Learn more [here](#).

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