

Hydrogen 2.0 Overview

Exceptional Energy Finally Made Possible

Hydrogen is the universe's most abundant element. It's also the world's cleanest source of energy if you can find an efficient way to safely harvest, store, transport and release that energy.

Hydrogen 2.0™ is the realization of such a sustainable way to deliver hydrogen energy on-demand, where and when it's needed, unlocking its potential as an affordable, emission-free and universally available alternative to today's hydrocarbon economy.

Significant breakthroughs in the areas of production and consumption now enable hydrogen to be supplied as part of an efficient, low-cost process with no carbon footprint. The new Hydrogen 2.0 paradigm is based on the inexhaustible supply of hydrogen from water, making it cost-competitive to all other forms of energy. Systems based on Hydrogen 2.0 enable applications to extract easily hydrogen on-demand, at the point-of-use where and when it is needed, without special infrastructure requirements for storage and distribution.

Hydrogen 2.0 unleashes the hydrogen era by establishing hydrogen as a practical and abundant energy source to power a new generation of hydrogen-fuelled applications for electrical power generation, heat generation, transportation and even drinking water.

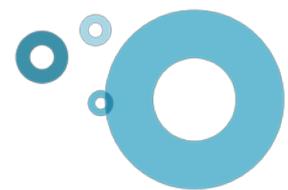
The Defining Characteristic of Hydrogen 2.0

In contrast to traditional hydrogen energy produced by electrolysis, steam reformation or the gasification of coal, a Hydrogen 2.0 energy system is characterized by the following:

Zero Emissions. Unlike traditional hydrogen production processes that emit 5 kilograms of greenhouse gases for every 1 kilogram of hydrogen produced, Hydrogen 2.0 production processes generate hydrogen without the use of chemicals or electrolysis and without any greenhouse gas emissions. On the consumption side, hydrogen fuel returns only water back into the atmosphere. The use of the Hydrogen 2.0 system, therefore, eliminates both the ecologically damaging greenhouse gasses and the health-damaging particulates emitted by coal, diesel and other hydrocarbon-based fuels.

On-Demand. Systems using Hydrogen 2.0 enable the localized production of hydrogen on-demand; meaning that hydrogen is generated on-site or on-board where and when it is needed. In contrast, traditional hydrogen production is a centralized process that requires a specialized and expensive infrastructure for safe storage and distribution that constrains hydrogen's availability and efficiency.

Affordable. Hydrogen 2.0 can be produced in abundance at a cost that is competitive with other energy alternatives. Since Hydrogen 2.0 is made from



nature's most abundant resources, it doesn't require expensive exploration or drilling and is available 24/7, providing an unprecedented level of predictability in pricing stability.

Available. Unlike other forms of renewable energy, Hydrogen 2.0 offers uninterrupted availability, any time of day, in any weather, anywhere. The aqueous-basis of Hydrogen 2.0 renders it applicable in any global region for any application. This allows the benefits of Hydrogen 2.0 can be shared worldwide without the need for the highly expensive infrastructure required for the transportation and distribution of traditional hydrogen, making it ideal for developing economies.

Infrastructure. Without sufficient infrastructure in place, traditional hydrogen, centrally produced then transported as a compressed gas or in its liquid state, has struggled to become a reality. The cost of such an infrastructure and the scale at which it must be rolled out has proven prohibitive, limiting traditional hydrogen as a small, niche energy source. Hydrogen 2.0 overcomes these problems through localized production at the point of use; no special storage, transportation or unwieldy infrastructure are required.

Safety. Hydrogen 2.0 introduces a novel way to store hydrogen in an aqueous state at room temperature and without pressure before the hydrogen is extracted. It's on-demand and on-board nature mean that hydrogen is converted into a gas at the point of use, thus, eliminating any requirements for safe storage and transportation. Hydrogen 2.0 is safe to handle, store and even spill. It is non-flammable and non-hazardous - for people, the environment and all its creatures.

About Joi Scientific

Joi Scientific™ was founded by a group of global business leaders, technologists and social entrepreneurs who believe that plentiful hydrogen holds the key to giving the world a viable, no-compromise energy alternative. The company's Hydrogen 2.0 solution is the world's first hydrogen production process that is on-demand, economically competitive, and environmentally neutral. The company is licensing its Hydrogen 2.0 technologies to a wide range of major power industries including electrical generation, heat generation, transportation, and specialty power. Joi Scientific is headquartered at the Kennedy Space Center in Florida.

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