

STARTUPCITY

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**JAPANESE
STARTUPS
EDITION**



**TOP
JAPANESE
STARTUP
2023**

AWARDED BY
STARTUPCITY



Hydro Powtech

Chemical and Allergen-Free Food Ingredients



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Factory Manager

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THE CHALLENGE OF IMPLEMENTING SDGS

There is a growing tendency among Japanese companies to implement sustainable development goals (SDGs) into their company policies. The Japanese government is increasingly promoting the domestic production of sustainable aviation fuel (SAF). At this juncture, collaborating with Green Earth Institute Co., Ltd, Hydro Powtech—a Japanese startup—is participating in a public project to produce SAF from food waste efficiently. It uses its hydrolysis technology to quickly manufacture brewed and fermented products without chemicals necessary in existing brewing, fermentation, and decomposition methods.

THE SOLUTION- HYDRO POWTECH'S HYDROLYSIS TECHNOLOGY

Hydrolysis is a decomposition reaction that occurs when chemical compounds react with water to break down complex molecules into simpler forms. The process is used to produce food ingredients such as sweeteners, amino acids, peptides, and flavors. However, the traditional hydrolysis methods take a long time, and modern general hydrolysis technology requires complex equipment for chemical treatment. Today, with the advancement of the industry, technology for quick and efficient hydrolysis has been developed by combining techniques such as acid and enzymatic decomposition.



To further the innovation and provide quality products, Hydro Powtech has patented a method to create chemical food additive-free alternatives to umami seasonings using hydrolysis technology. This method combines thermal, physical, and enzymatic decomposition. Since the processing requires low electricity and gas and uses no wastewater, Hydro Powtech has successfully implemented SDGs. Consequently, its products are relatively cheap due to the production method's low initial installation cost, while customers benefit from installing the hydrolysis technology to earn sufficient profits.

The technology uses a unique method to decompose different materials, mainly food particles, to alter their characteristics and process them into raw materials for food manufacturing. With NHP hydrolyzate, Hydro Powtech advances food development and manufacturing and creates new opportunities.

"We cut the molecular bonds of dietary fiber, carbohydrates, proteins, and manufacture powder and liquid raw materials that have been reduced to the desired molecular weight," says Mr. Masazumi Kumazawa, CEO of Hydro Powtech.

By reducing the molecular weight of the ingredients, the hydrolysis technology improves the texture, taste, and sweetness and promotes digestion and absorption.

Based on chemical manufacturing technology, hydrolysis occurs in a machine (special designed extruder); the ingredients are dried, and finely powdered within 1 second, adds Mr. Kumazawa. As a result, the desired molecular weight with a moisture percentage below ten is achieved.

Hydro Powtech's products can be used as alternatives to additives in various cases. Clients can use Hydro Powtech's anti-aging products such as hydrolyzing grains, vegetables, kelp, and bonito flakes to create a powder that brings out the umami, sweetness, and aroma in each material. The powder obtained by hydrolyzing rice with Hydro Powtech's technology has the same function as emulsifiers and chemical thickening agents like xanthan and guar gum. Since the rice is hydrolyzed by high temperature and pressure with no chemical treatment, it can be used for food labels.



We cut the molecular bonds of dietary fiber, carbohydrates, proteins, etc., and manufacture powder and liquid raw materials that have been reduced to the desired molecular weight



BEHIND EVERY SUCCESS, THERE IS A GREAT TEAM

Mr. Masazumi Kumazawa (CEO), Mr. Kazuo Nakabayashi (CTO), and Mr. Jun Sugimura (CFO) are the stalwarts of the company. Despite the fact that Mr. Kumazawa discovered the principle of the technology, Hydro Powtech would not have

thrived as a business without the support of Mr. Nakabayashi and Mr. Sugimura.

Each executive adds great value to the company, with Mr. Nakabayashi taking the hydrolysis theory to the mass production level and Mr. Sugimura securing the necessary funding for the technology.

VARIOUS USE CASES AND APPLICATIONS

Hydro Powtech has successfully developed allergen-free milk chocolate powder—Botani-Milk Choco—through its patented hydrolysis technology. The chemical-free product, which has an authentic taste, is a game changer for individuals allergic to milk. Kumazawa fondly recalls the smile on a child's face



Mr. Sugimura,
CFO



Botani Milk
Choco Powder
F-100 100g

名 称 チョコレートパウダー
原 料 名 グラニュー糖(外国製造又は国内製造)
カカオ豆、乳糖(乳糖分解糖)、香料
白いんげん豆粉、食塩 / 香料
内 容 量 100g
賞 味 期 限 密封下部に記載
保 存 方 法 直射日光・高温多湿を避けて保存してください。
製 造 者 日本ハイドロパウワテック株式会社
〒940-0377 新潟県長岡市堀保4-750-3
TEL 0258-77-3987
取扱上の注意●開封後はお早めにお召し上がりください。

アレルギー物質 28 品目不使用

栄養成分表示 (100g 当たり) (推定値)

エネルギー	471 kcal	炭水化物	73.07 g
たんぱく質	5.19 g	食塩相当量	0.003 g
脂肪	17.6 g		

賞味期限 2023. 6. 19
製造者 日本ハイドロパウワテック株式会社
https://hydro-powtech.co.jp



Botani Milk
Choco Powder
FJ-82 100g

名 称 チョコレートパウダー
原 料 名 グラニュー糖(外国製造又は国内製造)
カカオ豆、乳糖、乳糖分解糖
白いんげん豆粉、食塩 / 香料
内 容 量 100g
賞 味 期 限 密封下部に記載
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アレルギー物質 28 品目不使用

栄養成分表示 (100g 当たり) (推定値)

エネルギー	454 kcal	炭水化物	75.13 g
たんぱく質	5.34 g	食塩相当量	0.003 g
脂肪	14.67 g		

賞味期限 2023. 6. 19
製造者 日本ハイドロパウワテック株式会社
https://hydro-powtech.co.jp

when offered an allergen-free chocolate for the first time. Due to its authenticity and reliability, Hydro Powtech's Botani-Milk Choco is delivered all over Japan, and it aims to export the product overseas soon, including in the United States.

The company's hydrolysis technology can also be applied to other applications besides allergen-

free chocolate. The technology makes it possible to consume previously hard, tasteless, unsanitary, and inedible food. In Japan, hydrolysis technology has already been applied to food waste,

such as rice bran. Hydro Powtech is also working on applying the technology in industrial fields such as biorefineries and cosmetics. Moreover, the technology can also be helpful in obtaining chemical substances, which can be used as fodder for microorganisms (SAF).

Since its establishment, Hydro Powtech has pursued new food-related opportunities with its unique technology and expertise in hydrolyzate manufacturing. Its hydrolysis technology can also be applied to various industrial fields, including biorefineries and cosmetics. Hydro Powtech also provides consultancy services on the use of the technology to introduce and set up the equipment.

THE ROAD AHEAD

Due to its promising future, Hydro Powtech has secured funding worth 310 million yen. Building on the recent support it has gained, it aims to meet the growing demands of food development. Hydro Powtech is currently seeking to reduce the molecular weight of various materials through its hydrolysis technology. ⑤