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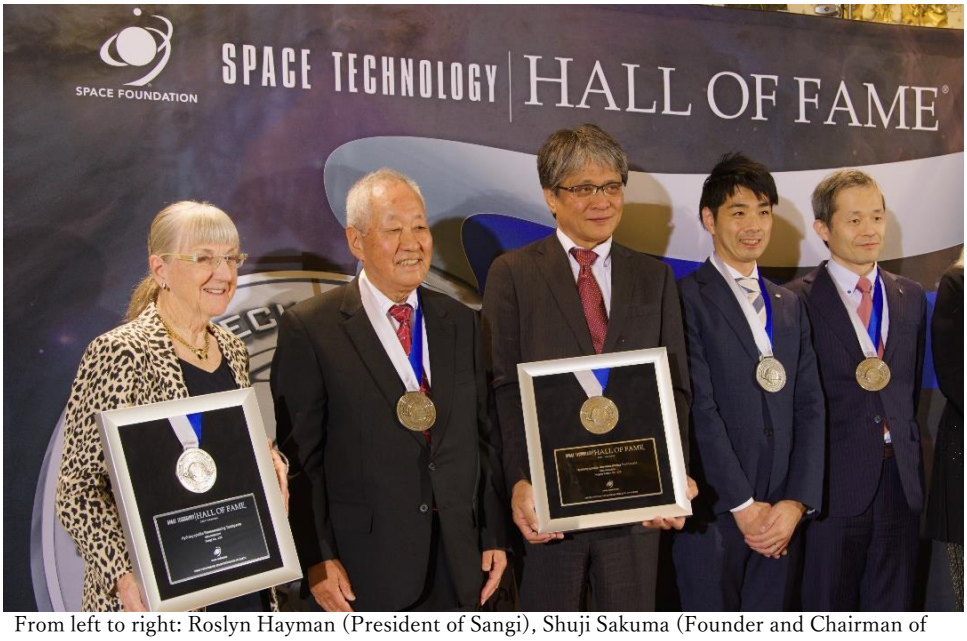
Company Information

【First Japanese company to receive this award!】 Inspired by a NASA technology, Sangi's development of remineralizing toothpaste is inducted into the Space Technology Hall of Fame®

— Award Ceremony held at the Space Symposium in the U.S. —

Sangi Co.,Ltd. has been inducted into the U.S. Space Technology Hall of Fame for its development of remineralizing toothpaste containing Medical Hydroxyapatite, an ingredient that prevents tooth decay, inspired by a NASA technology. Sangi is the first Japanese company to receive this award, which recognizes outstanding developments in the application of space technology. Sangi's product portfolio includes APAGARD®, the No. 1 selling* brand of high-performance whiteness enhancing toothpaste in Japan, and APADENT®, a long-selling medicated toothpaste that has been on the market for more than 40 years.

The 2024 award ceremony was held during the Space Symposium in Colorado Springs, USA, from April 8 to 11, and was attended by Sangi's president and chairman and representatives from its development partner and contract manufacturer, Nippon Zettoc Co. Ltd.



From left to right: Roslyn Hayman (President of Sangi), Shuji Sakuma (Founder and Chairman of Sangi), Tomoki Saito (Technical Advisor, Sangi), Nobuo Wakui (Group Manager, Nippon Zettoc), Yoshinobu Hasegawa (Group Manager, Nippon Zettoc)

The Space Technology Hall of Fame was established in 1988 by the Space Foundation, a non-profit organization founded in the United States in 1983, to recognize outstanding developments in space technology. It is given annually to companies selected from among many nominations, and is widely known as an award that honors product developers, scientists and engineers for their world-class technologies. Sangi's toothpaste was nominated for induction by the staff of NASA's online journal Spinoff.

** Intage SRI 2023 High-Performance Whitening Toothpaste Market Sales Value Top Series APAGARD*

Established as a trading company in 1974, Sangi became aware of NASA's technology while buying and selling patents. The technology was originally developed in the late 1960s at NASA's Electronics Research Center with a view to protecting astronauts from mineral loss in a gravity-free environment by producing hydroxyapatite, the main component of teeth and bones, via a chemical reaction in the mouth from its precursor brushite. Sangi's founder and current chairman Shuji Sakuma took a hint from the NASA technology and proposed putting hydroxyapatite itself into toothpaste, from which it could be taken up into the tooth surface during daily tooth brushing. Thus, in 1980 the world's first hydroxyapatite-containing toothpaste APADENT was born.

Space Symposium Space Technology Hall of Fame Award Ceremony

Roslyn Hayman, Sangi president, making her acceptance speech.

Sangi's president Roslyn Hayman spoke at the Space Technology Hall of Fame award ceremony held during the Space Symposium (April 3-11, 2024) in Colorado, USA. Expressing Sangi's joy at receiving the award, she explained how the company came to develop a toothpaste containing hydroxyapatite, how it became a medicinal ingredient, and how the company is developing its business today.

Space Foundation CEO Heather Pringle honored the technology's benefits in her congratulatory comment. "We are proud that remineralizing toothpaste has helped so many people on Earth. It's a great pleasure to be able to apply space technology for the benefit of all mankind. Congratulations indeed!"

What is the Space Symposium?

The Space Symposium has been hosted by the Space Foundation since 1984 and is the leading gathering of the global space ecosystem. Held in Colorado Springs, USA, this live event is widely attended by business and government leaders, and other professionals, entrepreneurs and educators from around the world.
Link to official homepage: https://www.spacesymposium.org/

What is the Space Foundation?

The Space Foundation is a non-profit organization founded in 1983 to provide information, education, and collaboration to the global space ecosystem. Its board members include CEOs of space-related companies and leaders from the U.S. military and various government agencies. Members can be found at: https://www.spacefoundation.org/who-we-are/leadership/. Driven by partnerships, the Space Foundation unites all stakeholders - business, government, education, and community - through support from corporate members, sponsors, fundraising activities, and grants.
Link to official homepage: https://www.spacefoundation.org/

NASA Spinoff

Since 1976, NASA's now online journal Spinoff has been collecting and introducing outstanding products and services that have been created based on technologies and patents researched and developed by NASA. Currently, the number of registered patents exceeds 2,000. An article on Sangi's Medical Hydroxyapatite toothpaste was published in the journal on January 2024.
NASA Spinoff official website: https://spinoff.nasa.gov/spinoff
NASA Spinoff article on Sangi:
https://spinoff.nasa.gov/Semiconductor_Research_Leads_to_a_Revolution_in_Dental_Care

Medical Hydroxyapatite, an anti-caries ingredient developed by Sangi

Medical Hydroxyapatite is a proprietary ingredient developed by Sangi using hydroxyapatite, the main component of teeth and bones, on a nanoparticle scale. It is recognized as an anti-caries agent in Japan and used only in Sangi's own-brand products, such as APAGARD, and OEM products. Medical Hydroxyapatite is distinct from other types of hydroxyapatite such as fillers or abrasives, and works directly on tooth enamel to protect against caries in three ways – collecting and removing plaque, filling surface microfissures, and remineralizing subsurface demineralized areas, which are the beginning of tooth decay.
Detailed explanation: https://www.sangi-co.com/en/mechanism/index.html

History of Sangi's Development of Medical Hydroxyapatite

1974 First encounter with hydroxyapatite
Established as a trading company, Sangi becomes aware of the technology of the U.S. National Aeronautics and Space Administration (NASA) while trading in patents.

The original NASA technology

In the late 1960s, amid concern for the strength of astronauts' teeth and bones in a weightless environment, NASA's Electronics Research Center, led by Dr. Bernard Rubin, conceived a method of producing hydroxyapatite, the main component of teeth and bones, by a chemical reaction in the mouth from its precursor, brushite. NASA patented Rubin's idea in 1972, and Sangi purchased the intellectual property rights three years later in 1975.

1975 Sangi acquires the NASA patent.

1978 Taking a hint from NASA's technology, Sangi proposes directly using hydroxyapatite, which is the main component of teeth, as an ingredient in toothpaste, from which it can be taken up into and restore the tooth surface during daily tooth brushing.

The cycle of tooth demineralization and remineralization

In the mouth, the mineral components of tooth enamel are being constantly dissolved by acids from bacteria and foods, a phenomenon called "demineralization." Saliva constantly replaces this mineral, but if the amount of saliva secretion becomes inadequate, due to poor health, or if the oral cavity becomes acidic due to excessive consumption of acidic foods or neglect of dental care, demineralization is prolonged, and remineralization by the saliva cannot keep up, making the teeth more susceptible to decay.

1980 Launch of the first hydroxyapatite remineralizing toothpaste APADENT.
After encountering the NASA technology and conceiving the world's first "restorative toothpaste," Sangi begins synthesizing and researching hydroxyapatite and with the cooperation of manufacturer Nippon Zettoc (then Nippon Zeola Co. Ltd.), formulates it into toothpaste. APADENT is first sold for 2,800 yen per tube, an exceptionally high price for toothpaste at the time.

1985 Sangi establishes a subsidiary, Apatite Co., Ltd., and its second brand toothpaste APAGARD is launched

1989 Launch of Sangi's hydroxyapatite-based antimicrobial agent APACIDER

1992 Launch of the DENTA APATO brand toothpaste for co-op route sales.

1993 Birth of a new anti-caries agent, Medical Hydroxyapatite
Fully 15 years since its inception, Sangi's proprietary hydroxyapatite ingredient is finally recognized by Japan's then Ministry of Health and Welfare as a medicinal ingredient with caries-preventive effects, based on more than a decade of research including data from laboratory work and large-scale field trials carried out by two universities in Japanese primary schools. The ingredient is officially named Medical Hydroxyapatite to distinguish it from other types of hydroxyapatite, and its 3-step mechanism for the prevention of caries is officially recognized.

2003 Sangi succeeds in reducing the size of its hydroxyapatite ingredient from three-digit nanoscale (over 100nm) to two-digit (around 50nm), improving its penetration into the enamel surface and making it the world's first nanotech oral care ingredient.

Sangi Co., Ltd.
Established in 1974, Sangi is celebrating its 50th anniversary in 2024. After developing the world's first toothpaste containing hydroxyapatite in the late 1970s, launched as APADENT in 1980 and APAGARD in 1985, the company caused a sensation in the mid-1990s with a highly successful TV commercial series "A Celebrity's Teeth are His Life," at one point capturing almost 20% Japanese toothpaste market share. Sangi began exporting in 2011, and now supplies its products to almost 30 overseas countries including Russia, Canada, China and other parts of Asia, and in the EU, where it established a subsidiary in 2017. It also launched a range of skin care products containing hydroxyapatite, under the HAP+R brand in 2018. Sangi derives its name from the three ("san") principles ("gi") of the Chinese scholar Mencius, which translate as "The timing of the heavens, the riches of the earth, and the harmony of men."
Sangi homepage: https://www.sangi-co.com