





# Silk

## Empress Leizu

2640 BC

Silk, a luxurious fabric made from the fiber of certain cocooning insects, was first discovered by Empress Leizu around 2640 BC in China. One of many legends says that one afternoon, the Empress sat underneath a mulberry tree while enjoying a cup of tea. Out of nowhere, a cocoon fell into her cup and began to unravel. Empress Leizu gathered more cocoons and outstretched their fibers to later spin and weave them into cloth.

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Alongside her attribution as the creator of sericulture, the process of farming silkworms to produce silk, Empress Leizu is said to have discovered three other important factors about silk production, such as that the best species to use for silk is domestic silk moths. While some claim that her husband, the Yellow Emperor, discovered silk, many name Empress Leizu as the Goddess of Silk. Silk became the most valuable Chinese export, predated the use of paper as money, created the infamous Silk Road, and became a symbol of status in Chinese society. The success of the silk trade led to a huge growth of China's empire and cultural exchange amongst nations.





# Hybrid Sugar Cane Varieties

Janaki Ammal

1934–1939

The global consumption of sugar is expected to reach 177.8 million metric tons from 2020 to 2021. Now that's a lot of sugar! For all that sugar we consume, we better show some appreciation to Janaki Ammal. Ammal's brilliant research in cytogenetics, the study of how chromosomes affect cell behavior in genetics, led to her discovery of high-yielding and sweeter hybrid varieties of the sugarcane, *Saccharum officinarum*, in the 1930s. Ammal's research on intergeneric hybrids was just the beginning of her career— makes sense as she is known as India's first female plant scientist!

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Ammal took the path less taken by women of the time and attended Queen Mary's College in Chennai, India for her Bachelor's degree and the Presidency college for her Honours degree in Botany in 1921. While today India produces the second-largest amount of sugarcane in the world, this wasn't always the case. The Sugarcane Breeding Institute in Coimbatore, India was created in response to India's growing need to rely less on imported sugarcane from Indonesia. Alongside her discovery of cross-bred sugarcane that better suited India's climate, she also developed new hybrids by crossing sugar canes with several types of grass. After her work at the institute, she moved on to become an environmental advocate for protecting native Indian plants.





# Stir Fry Pan

Joyce Chen

August 10, 1971

Did you know the stir fry pot you know today isn't as old of an invention as you thought? Joyce Chen, a food pioneer who popularized North-style Chinese cuisine in the United States, found an opportunity for innovation when she realized woks could not cook properly on American stovetops. In China, stoves have a circular hole which a traditional wok fits in perfectly. On August 10, 1971, Chen patented the flat bottom wok to fit flat American-style burners better, which she called the Peking Wok. Nowadays, people recognize this style of wok as the stir fry pan.

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Chen made a name for herself and Chinese cuisine in the culinary world through her work as a successful chef, restaurant owner, TV host, and cookbook author. In 1949, her family fled Shanghai to Cambridge, Massachusetts to escape the communist revolution in China. The whole community came to love Joyce's cooking since she fed local homesick university students and served food at her kids' school events. With a fan-following, Joyce opened up her first restaurant in 1958, called "Joyce Chen Restaurant". Her restaurant was so popular that she opened up three more restaurants by 1973.





# Bubble Tea

Lin Hsiu Hui

1988

Whether you call it bubble tea, pearl tea, or boba, this sweet treat has taken the world by storm. Who would have thought that a simple lunch snack in 1988 would have inspired one of the most popular drinks to date? Lin Hsiu Hui, a product development manager at Chun Shui Tang teahouse in Taichung, Taiwan, decided during a work meeting to mix her sweet tapioca pudding dessert, fen yuan, with her tea. Her boss, Liu Han-Chieh, introduced drinking cold tea in the 1980s. By combining cold tea and tapioca balls together, Hui and Han-Chieh created the game-changing drink: bubble tea.

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Hui never trademarked or patented bubble tea, but her creation gave rise to a booming industry. The global bubble tea market size was valued at 2.02 billion USD in 2019 and could reach up to 3.39 billion USD by 2027. Instead, she and the company focused on spreading Taiwanese tea culture to the world and developing new products. Want to know one of their most popular tea flavors? Mango and coconut pearl tea.





# Ann Tsukamoto

## Bone Marrow Transplant

October 29, 1991

In 1991, Ann Tsukamoto and her team patented a discovery that would change the medical field forever— stem cell transplants. By successfully isolating stem cells, Tsukamoto’s team opened up a whole realm of possibilities for future medical advancements and cures. From bone marrow transplants to “comprehending the blood systems of cancer patients”, none of this technology would be here if not for Tsukamoto’s work.

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After Tsukamoto’s breakthrough while working for the California biotech company, SyStemix, she joined StemCells, Inc. Here Tsukamoto progressed medical technology and led research on isolating and applying neural and liver stem cells to various diseases.





# First Digital Museum

Lin Hsin Hsin

April 19, 1994

Thanks to the pandemic, virtual events have become one of the few outlets for people to socialize safely. Imagine how it must have felt to connect with others when the internet first became popular in the early 1990s. Lin Hsin Hsin embraced this new technology and created the world's first digital museum on April 19, 1994.

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Hsin is a Singaporean multidisciplinary artist, perfecting her craft in digital media, traditional art, music, poetry, and technology. Her work often melds her studies in mathematics and computer science with her visual crafts. One of her many merits includes becoming "the first person in the world to successfully use equations to create 3D design for sculptures, objects and jewelry."





# Organic light-emitting diode (OLED)

Vivian Yam

2004

Can you name at least one piece of everyday technology that uses OLEDs? Let us help you— cellphones, laptops, TVs, and handheld video game consoles are just the tip of the iceberg. Many of today's tech gear benefit from the crisp images and thin screens because of Hong Kong chemist researcher Vivian Yam's work on OLEDs. Her research on organometallic luminophores helped develop OLED into what we know today.

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The quest to find sustainable energy sources remains a problem across the globe. Yam believes the answer to this issue lies within innovation across disciplines and abundant but cheap materials. Organometallics fit the bill and Yam knows that they have the potential to meet our levels of energy consumption.

