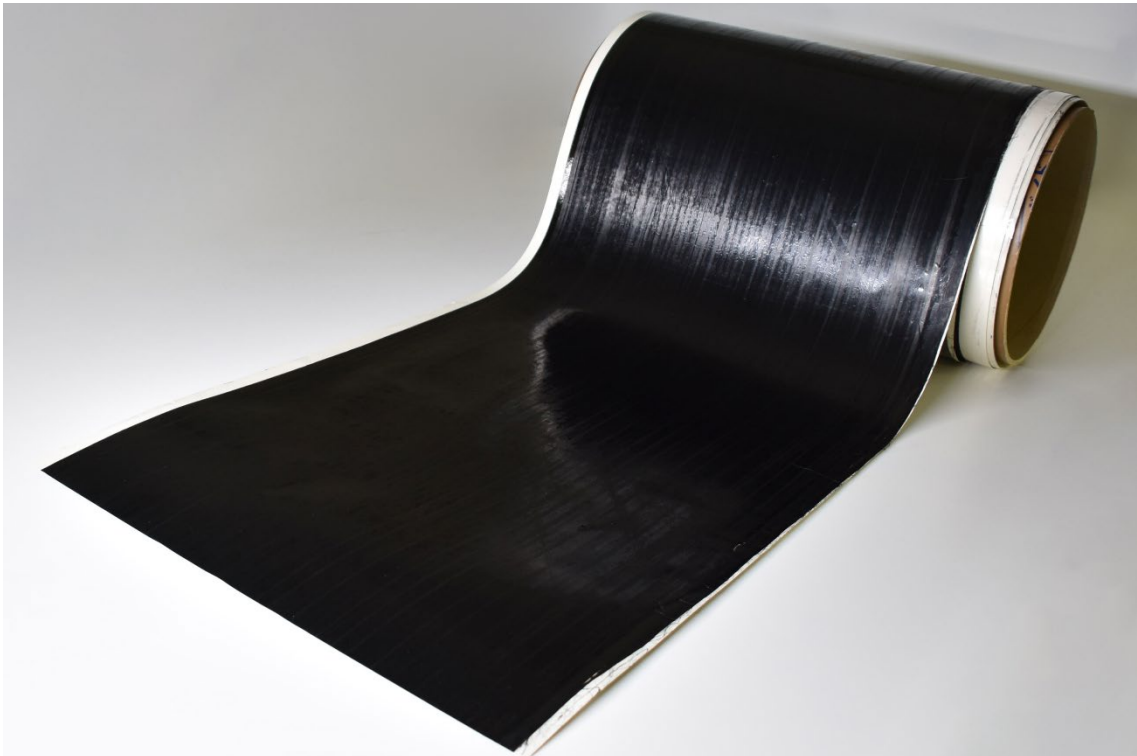


**CARBON FLY Inc. launching next-generation CNT hybrid prepreg with
Japan U-pica.co.ltd, a partner in space material development,
and aiming for mass production in 2024**

TOKYO, October 12, 2023 /CARBON FLY, Inc./ --

CARBON FLY Inc. (Based in Koto City, Tokyo, hereinafter referred to as "CARBON FLY"), a startup aiming for social implementation of carbon nanotubes (hereinafter referred to as "CNTs"), and Japan U-pica.co.ltd (Based in Chiyoda City, Tokyo, MITSUBISHI GAS CHEMICAL Group, hereinafter referred to as "Japan U-pica") have jointly developed lightweight and highly durable next-generation CNT hybrid prepreg for space materials.



This CNT hybrid prepreg is the composite material of carbon fiber, CARBON FLY's CNT film, and Japan U-Pica's CFRP resin [CBZ]. CARBON FLY's CNT film is made from CNTs

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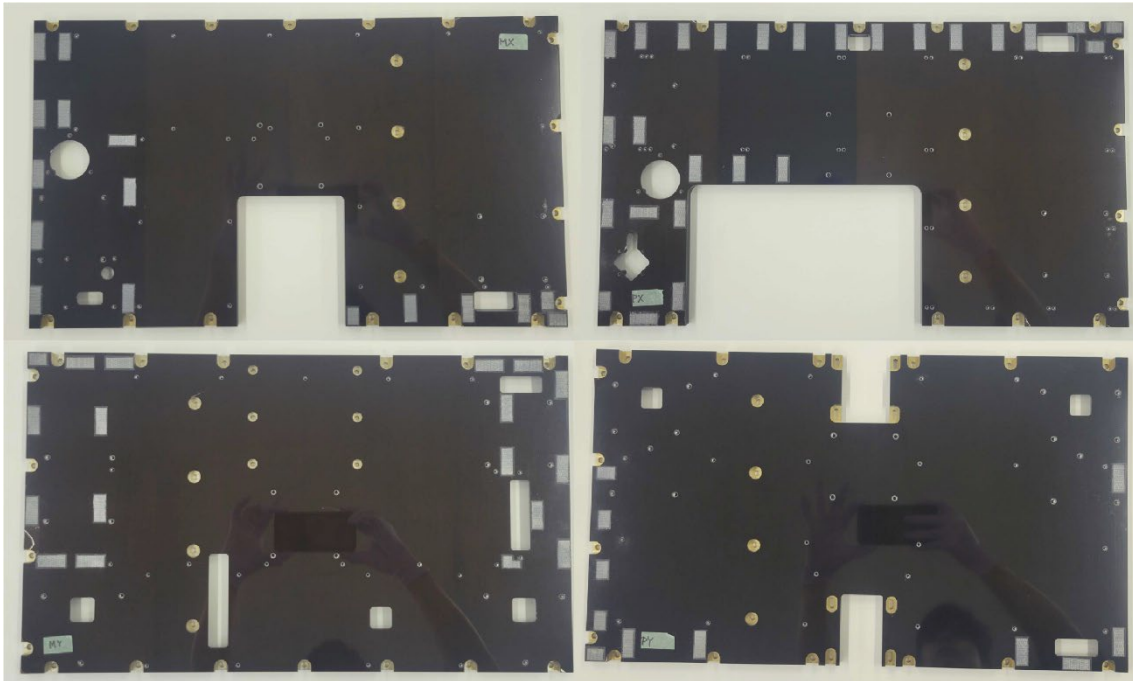
without any other additives, and can maximize CNTs' advantages "light weight," "high strength," and "high toughness". Japan U-Pica's [CBZ] has the characteristics of "fast curing," "high strength," and "storage at room temperature", compared to conventional CFRP resins. By combining these characteristics, we have created the next-generation CNT hybrid prepreg that is "lighter", "stronger", and "more productive" than CF prepreg and can be used as space materials.

In fact, nanosatellite panels made by CNT hybrid prepreg were delivered for the parent unit of Shizuoka University "STARS-X". The panels were adopted because it is on average 32% lighter than existing aluminum panels and has passed vibration and shock tests that simulate the entire process from rocket launch to satellite separation and deployment.



Nanosatellite [STARS-X] by Shizuoka University

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CNT-CFRP panels for [STARS-X]

		衛星			
	試験種目	X軸	Y軸	Z軸	ボトム底面
振動試験	モーダルサーベイ	合格	合格	合格	
	ランダム	合格	合格	合格	
	サインバースト	合格	合格	合格	
衝撃試験					合格

The results of vibration and shock tests

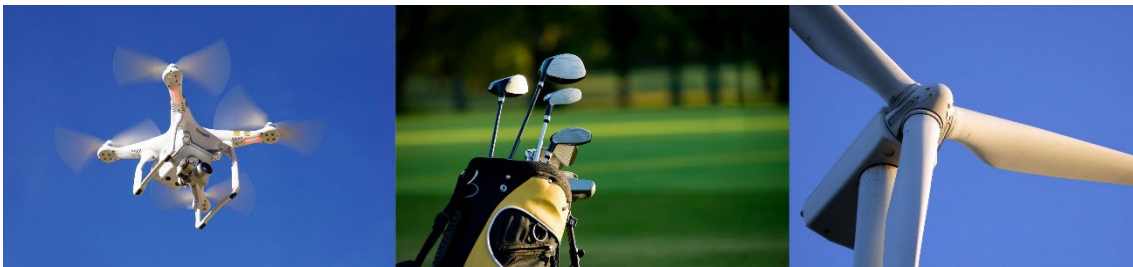
	パネル名称	重量(g)			軽量化率 (%)
		アルミ製 (a)	CNT-FRP製 (b)	差異 (b-a)	
1	MX	983.06	654.90	-328.16	33%
2	MY	1,067.18	710.20	-356.98	33%
3	PX	897.51	618.30	-279.21	31%
4	PY	1,085.91	742.40	-343.51	32%
Total		4,033.66	2,725.80	-1,307.86	32%

Weight comparison of Aluminum Panels and CNT-CFRP Panels

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By reducing the weight of satellite components, it is expected to reduce rocket launch costs or provide additional components for satellites.

In the future, we intend to take advantage of the features of this next-generation CNT hybrid prepreg to develop not only satellites but also drones, racing machines, sporting goods, wind power generator blades, and a wide range of other applications. To this end, we aim to establish a mass production system by the end of 2024.



About Japan U-pica.co.ltd

Since our foundation in October 1977, U-Pica has consistently conducted business under the Corporate Philosophy that “As a manufacturer of materials, we contribute to make society more affluent through the supply of unique materials.” and we have always believed that our most important asset is our technology.

U-Pica manufactures and sells plastics like unsaturated polyester resins and epoxy acrylate resins, as well as sheet molding compounds (SMC) and various methacrylic esters and coating resins. And to meet the needs of the times, we have developed and expanded our line of eco-friendly products like BIOMUP® .

We have gained a strong reputation in a wide range of areas, including materials for advanced technical fields like electronics and high-function composite materials, as well as flame-resistant resins, highly corrosion-resistant resins, and resins that cure under ultraviolet light or electronic beams.

<Company Profile>

Company Name: Japan U-pica.co.ltd

Address: Madre Matsuda Bldg., 4-13, Kioi-cho, Chiyoda-ku, Tokyo 102-0094, Japan

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Representative: Hiroyuki Otsuka (Representative Director and President)

URL: <https://www.u-pica.co.jp/en/>

Incorporation: October 1, 1977



About CARBON FLY, Inc.

CARBON FLY was founded in January 2022 in Tokyo, Japan, by a materials scientist. It's a startup whose main target is the development and mass production of ultra-high quality CNTs. CARBON FLY has succeeded in developing a technology to control and mass-produce high-quality CNTs, a longstanding issue in the CNT industry. CARBON FLY's CNTs can be formed into powder, fiber and film. It can be applied not only to conductive paste for lithium-ion batteries but also to aerospace, mobility, energy and many other fields.

<Company Profile>

Company Name: CARBON FLY, Inc.

Address: Madre Matsuda Bldg., 4-13, Kioi-cho, Chiyoda-ku, Tokyo 102-0094, Japan

Representative: Fei Deng (President)

URL: <https://carbonfly.co.jp/en/>

Incorporation: January 31, 2022



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with carbon nanotubes

Turning fantasies into ideas



CARBON FLY