

CNT production system derived from marine plastic waste

TEAM

<Co-investigator>

Future Earth Lab. Co., Ltd / Tokyo University of Science | Ikuno Lab.

SERVICE VISION

Upcycling marine plastic waste into carbon nanotubes (CNTs), a high value-added functional material. By popularizing this trend, we will create a large incentive for marine litter collection and accelerate marine litter reduction.

We will realize a new circular economy by producing CNTs derived from marine plastic waste using our proprietary CNT conversion process and equipment, and supplying them to a wide range of fields including the battery industry, automobile industry, and the construction industry.



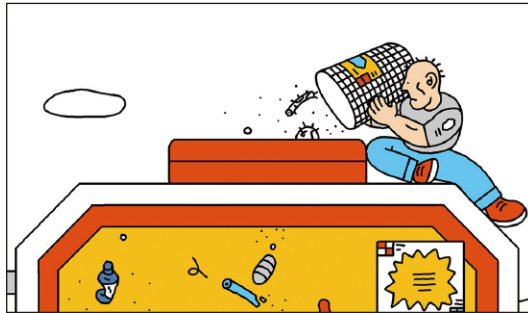
SERVICE FEATURES

Our proprietary process and equipment convert general-purpose plastic materials, similar to actual waste plastics, into CNTs at high speed and in large quantities. It has also been proven that the physical properties are equivalent to those of commercially available products.



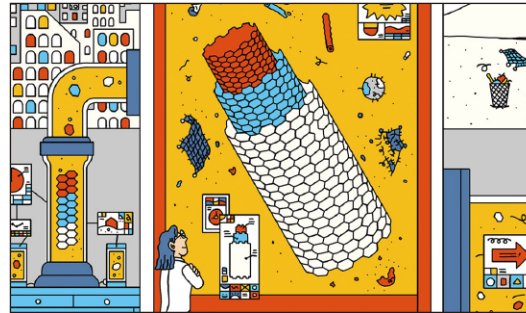
Converting plastic materials such as oyster pipes, artificial turf, and fishing nets into CNTs.

SERVICE OVERVIEW



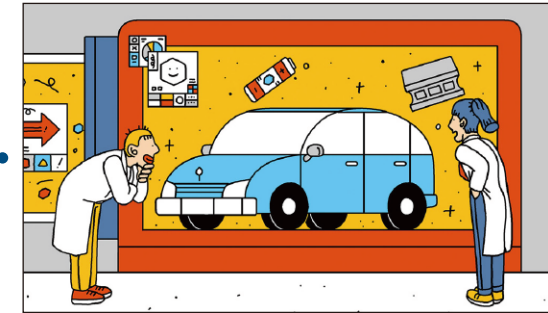
Can be used for a wide variety of plastic materials

Ten types of plastic materials are available for CNT conversion in this process, which include PE, PP, PS, PVC, and ABS. Almost all common waste plastic materials are covered by our technology.



High speed and high volume conversion

The CNT conversion efficiency of this process is on average 2 to 4 times higher than that of conventional CNT production methods, and depending on the feedstock material, as much as 8 times higher. The current maximum yield is 200g/day.



Physical properties equivalent to those of commercial products

Although made from marine plastic waste, the CNTs have proven to have comparable properties in terms of diameter, length, and electrical properties to commercially available multilayer CNTs made from high-purity hydrocarbon gas.

PROCESS and SCHEDULE



Initial cost ▶ 150,000 yen / 1,000-5,000 yen per gram of CNT

※ Please consult with us as needed, including joint research.

※ CNT prices vary depending on the type of marine litter, availability of CNT conversion, conversion yield, and production volume.

TEAM



Future Earth Lab. Co., Ltd

Location : 2-2-14 Honmachi, Kokubunji-shi,
Tokyo, Japan

Representative : Yuji Matsukawa, CEO

Website : <https://www.future-earth.jp/>

Main Business Description

- Sales and installation of environmental products.

Tokyo University of Science | Ikuno Lab.

Location : 6-3-1 Shinjyuku, Katsushika-ku, Tokyo, Japan

Representative : Takashi Ikuno, Associate Professor,
Department of Electronic Systems Engineering

Website : <https://www.rs.tus.ac.jp/tikuno/>

Main Research

- Development of conversion technology of polymeric materials to nanocarbon materials.
- Research and development of flexible nano-devices.

Inquiries about this service

Project Ikkaku Secretariat (in Leave a Nest)

✉ ikkaku@lne.st

Web site is here.



<https://ikkaku.lne.st/>



ABOUT PROJECT IKKAKU

Project Ikkaku was launched in 2019 by the Nippon Foundation, JASTO, and Leave a Nest with the goal of realizing businesses that reduce marine waste in society.

The project adopts a process that promotes the development and commercialization of innovative technologies through the collaboration of "hyper-interdisciplinary teams" including venture companies with new technologies and unconventional ideas, as well as academic institutions, town factories, large corporations, and small and medium-sized businesses. With support from the Nippon Foundation, a number of services have been developed over a three-year period through 2021.

From April 2022, we will continue to work with the participating teams as a stand-alone project to promote the social implementation of businesses that reduce marine waste.

