What is CNF Cellulose nanofiber?

Plant Biomass

- Wood, branches and leaves, fruits
- Food residue
- Unutilized biomass (Rice straw, weeds)
- Used paper

Pulp

Cellulose Nanofiber

- Plant-derived material
- Nanosized fibrils made by defibrating cellulose taken from plant by chemical / mechanical treatment
- Strong and lightweight (five times the strength of steel at one-fifth the weight)
- Large specific surface area (>250m²/g)
- Low coefficient of thermal expansion (One-fiftieth of glass)

Consortium Members of the NCV Project

京都大学 KYOTO UNIVERSITY

京都市産業技術研究所

UBE 宇部興産株式会社

株式会社 昭和丸筒

昭和プロダクツ 株式会社

国立大学法人 名古屋工業大学

RISHO

Akita Prefectura University 秋田県立大学

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トヨタ自動車東日本 TOYOTA MOTOR EAST JAPAN

KIT 金沢工業大学

TOYOTA CUSTOMIZING & DEVELOPMENT

東京大学 THE UNIVERSITY OF TOKYO

産総研 技術を社会へ Integration for Innovation

SuMPO 一般社団法人 サステナブル経営推進機構

■ Published

Ministry of the Environment, Government of Japan
Climate Change Projects Office, Climate Change Policy Division,
Global Environment Bureau

■ Representative Body

Kyoto University Research Institute for Sustainable Humanosphere
http://www.rish.kyoto-u.ac.jp/ncv/

環境省 Ministry of the Environment

NCV PROJECT

Nano Cellulose Vehicle

Nature-gifted Automotive

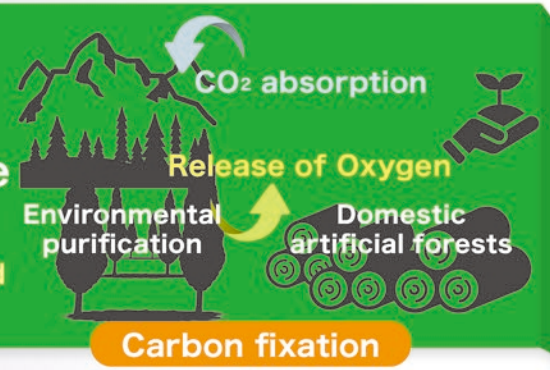
Nano Cellulose Vehicle

NCV Nano Cellulose Vehicle PROJECT

Nature-gifted Automotive Nano Cellulose Vehicle

Cellulose

Plant-derived Material



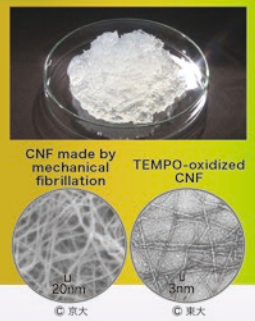
Carbon fixation

Cellulose Nano Fiber

- 50% of wood components
- 5 times the strength of steel
- 1/50 thermal expansion coefficient of glass

Nano

Strong and Lightweighted Nanosized Material



Promoting dissemination of CNF-based products in automotive field

Development and evaluation of CNF-based automotive components

Vehicle

- Utilization of domestic and regional resources
- Carbon neutral
- Reduction of greenhouse gas emissions
- Weight reduction of automotive
- Promotion of multi-material
- High robustness

Production of concept car

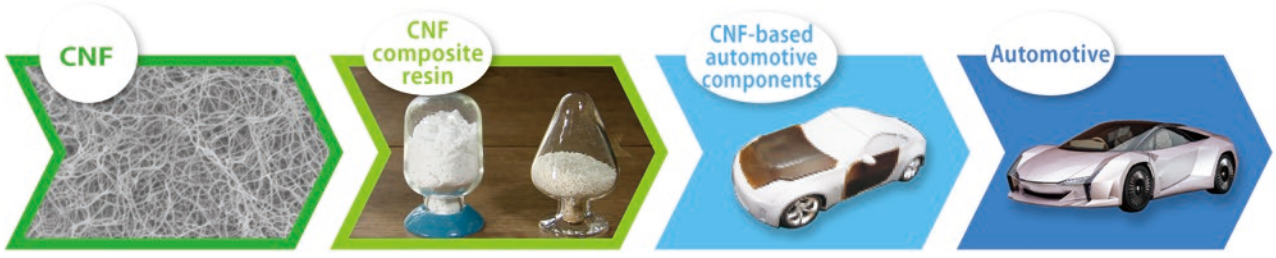
- SDGs
- Society 5.0
- Paris agreement
- Regional Circular and Ecological Sphere
- CE100 RE100

What is NCV project ?

Cellulose nanofiber (CNF) is a material composed of nanosized cellulose fibrils. This plant-derived material, which offers high strength and high modulus at one-fifth the weight of steel is expected to be used in products in various fields as the next generation material.

The Ministry of the Environment of Japan launched the NCV (Nano Cellulose Vehicle) project by forming a consortium led by Kyoto University in FY2016. This project is designed to develop CNF composite resin and automotive components and the performance of these CNF-based products is also evaluated at each stage.

NCV project aims the dissemination of CNF-based products in the automotive industry in order to reduce CO_2 emissions through promoting energy conservation and weight reduction of automotive.



Evaluation of material properties	Evaluation of manufacturing process	Evaluation of CNF-based automotive components	Evaluation and validation of the CO_2 emissions reduction effect