#### **Company Introduction**

**Nature Gift Co.,Ltd.** is a venture company established by Dr. Hiroyuki Yano of Kyoto University and Hexa Chemical Co., Ltd. to accelerate the commercialization of Cellulose Nanofiber (CNF) materials.

The company will manufacture and sell plastic compound and masterbatch reinforced with sustainable and carbon-neutral CNF using the Kyoto Process™\*.

CNF Reinforced Polymers have many desirable properties such as lightweight, elastic, strong, low thermal expansion, and easily recyclable, so it can be used in many different products such as automobiles, home appliances, construction materials, and daily necessities. Nature Gifts Co.,Ltd. will widely contribute to society by commercializing it.

#### \*Kyoto Process:

A technology that allows for the efficient production of CNF-reinforced plastics by simultaneously performing nano-fibrillation of pulp and compounding with resin using an extruder.

### **Company Profile**

| Company Name    | Nature Gifts Co., Ltd.  |
|-----------------|---|
| Contact Address | 10-30 Yokomakura-nishi, Higashiosaka City,<br>Osaka Prefecture, 578-0956<br>TEL:072-929-9255 / FAX:072-966-3320 |
| Representative  | Shinji Ishii  |
| Capital         | 10 Million Yen  |
| Establishment   | September 10th, 2020  |
| HP              | https://www.naturegifts.co.jp   |
| E-mail          | info@naturegifts.co.jp  |

Send to: Natsumi Ogaki





#### **Business Activities**

## 1. Standard Line Up

Standard grades are available in commodity plastics and some engineering plastics (some development grades are available).



|                           |       | Standard | Standard | Development     | Development   | Standard             |  |
|---------------------------|-------|----------|----------|-----------------|---|----------------------|--|
| Physical<br>Properties    | Unit  | Low GHG  | Common   | High Elasticity | Impact Strength & Low<br>Coefficient of Thermal Expansion | High Heat Resistance |  |
|                           |       | Bio-HDPE | PP       | PP              | PP  | PA6                  |  |
| Cellulose<br>Content      | wt%   | 10       |          |                 |   |                      |  |
| Flexural<br>Strength      | MPa   | 30~50    | 70~80    | 80~90           | 30~40   | 150~160              |  |
| Flexural<br>Modulus       | GPa   | 2.0~3.0  | 3.0~3.5  | 4.0~4.5         | 1.6~1.8   | 4.5~5.0              |  |
| Charpy Impact<br>Strength | kJ/m² | 2~4      | 2~4      | 2~4             | 7~10  | 2~4                  |  |

The above data is a guide only and the figures are not guaranteed.

# 2. Eco Friendly Materials

Development of CNF-reinforced biomass plastics, biodegradable plastics (bio PE, PLA, PBS, etc) and upcycling of recycled plastics.

## 3. Customized Items

 Contract manufacturing of CNF-reinforced polymers according to customer requests and applications
 (Based on our experience in handling various types of plastics resin)



## 4. Proposal of unique technologies

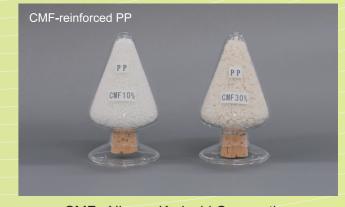
Proposal the addition of design and function to plastics by using Hexa Chemical technology such as coloring and Plagenom\*

(URL: www.plagenom.co.jp).

We also have experience of using pulp and cellulose microfiber (CMF).



Samples: Ueyama Plastics Manufacturing Co., Ltd.



CMF: Nippon Kodoshi Corporation