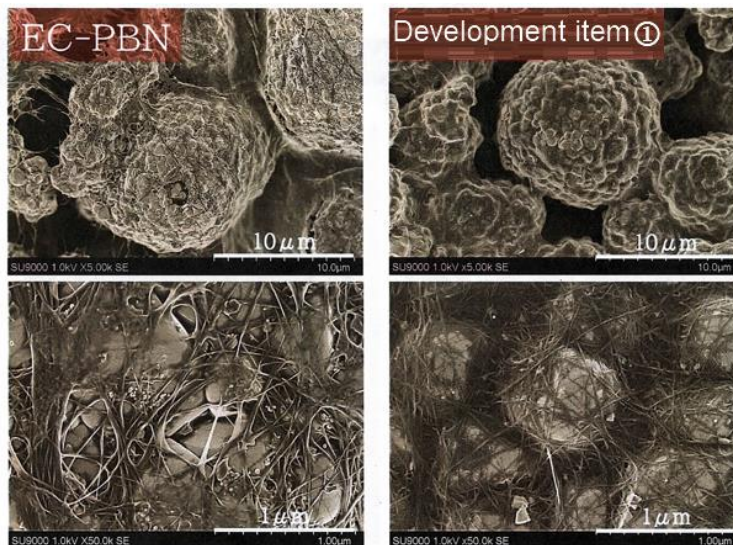


## Ultra-high-concentration CNT dispersed powder (development item: for NMP)

Appearance (CNT 0.1g)

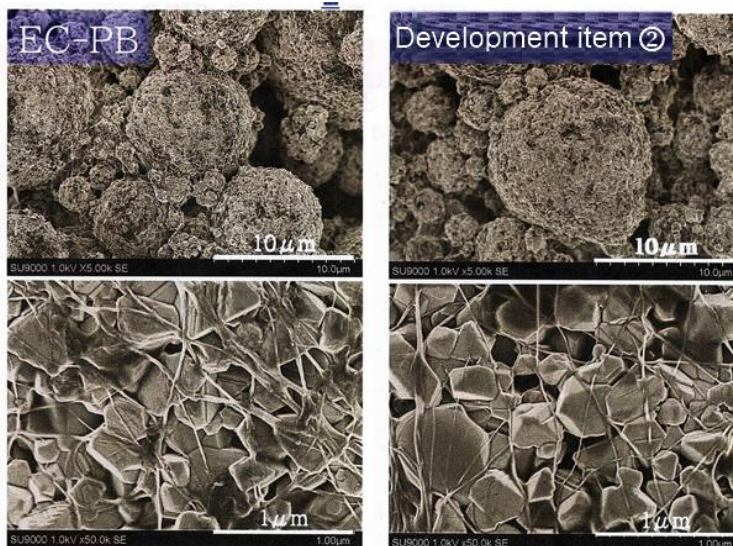
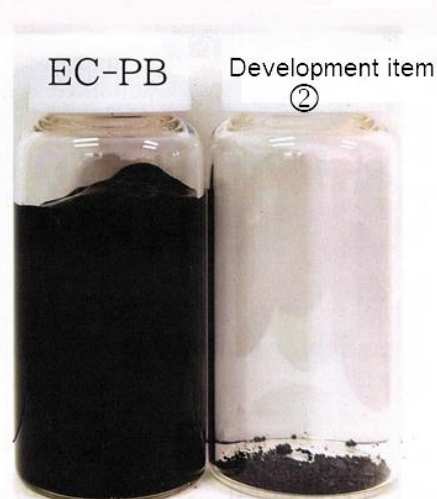


Electrode composition: NCM523/EC2.0-P/Dispersant (Dispersion source) + Binder = 97.95/0.05/2.00

Model	Type	CNT Concentration	CNT Type	CNT Center Diameter	Applicable solvents
EC-PBN	Slurry	0.4wt%	EC2.0-P	2-3nm	NMP
Development item ①	Powder	50.0wt%	EC2.0-P	2-3nm	NMP

## Ultra-high-concentration CNT dispersed powder (developed item: suitable for H<sub>2</sub>O)

Appearance (CNT 0.1g)



Electrode composition: LTO/EC2.0-P/Dispersant (Dispersion source) + Binder = 96.8/0.2/3.0

Model	Type	CNT concentration	CNT type	CNT center diameter	Applicable solvents
EC-PB	Slurry	0.4wt%	EC2.0-P	2-3nm	H <sub>2</sub> O
Development item ②	Powder	34.0wt%	EC2.0-P	2-3nm	H <sub>2</sub> O

## Carbon Nanotube Dispersed Powder

### ➤ Summary

This dispersed CNT powder is produced using a proprietary, patent-pending processing technology that restructures previously defibrillated CNTs. The restructured CNTs can be defibrillated again during use. Its extremely high CNT content provides superior re-dispersion (re-defibrillation) performance and active-material coverage compared with paste-type products, making it ideal as a conductive additive for energy-storage applications such as lithium-ion secondary batteries.

### ➤ Appearance and Composition (Example)



Type	CNT	Fiber diameter nm	Composition			Volume cm <sup>3</sup> /per CNT1g
			CNT	Dispersant	solvent	
solvent-based	SWCNT	1~2	50.0%	50.0%	0.0%	5.2
water-based	SWCNT	1~2	34.0%	51.0%	15.0%	5.6

We can also perform dispersion processing according to the raw materials (carbon nanotubes, dispersants, solvents) required by customers.

### ➤ Main Features

#### 1. High CNT Content

It achieves an extremely high CNT content (10%), which is not possible with paste-type products. In addition, it can be handled as a non-hazardous material, helping to reduce transportation and storage costs.

#### 2. Excellent Re-dispersibility & Active-Material Coverage

Although it is a powder product, it provides superior re-dispersibility and coverage compared to paste-type CNT materials. It enables the formation of CNT networks within the electrode, contributing to an ideal conductive pathway.

#### 3. High stability and high operability

The powder form gives it extremely high long-term stability and makes moisture control easier. Although it is a CNT, it has low scattering and excellent powder flowability.

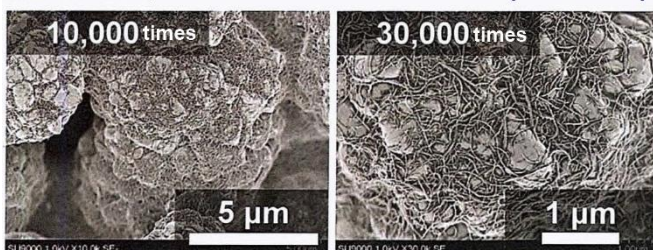


## ➤ Summary

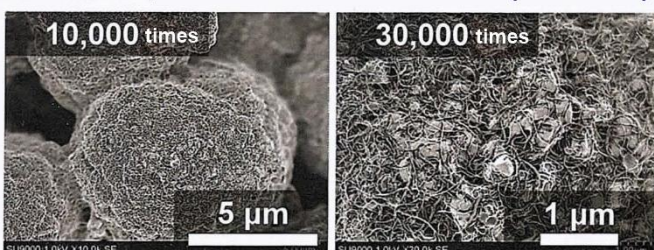
We also offer CNT (carbon nanotube) coating services for active materials, enabling the creation of active-material/CNT composite materials. A variety of CNT coating processes can be applied to a wide range of active materials. This eliminates the need for CNT redispersion and simplifies the battery manufacturing process. It is also considered highly effective for sulfide-based all-solid-state batteries and dry-process applications.

## ➤ Appearance and Composition (Example)

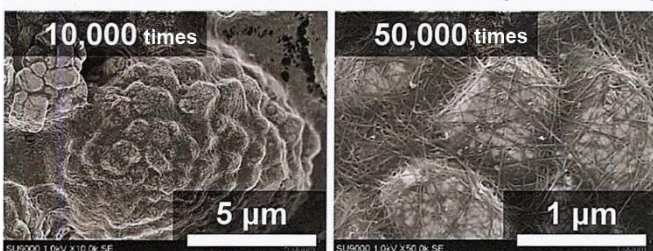
### NCM523/ Solvent-based MWCNT (~0.5wt%)



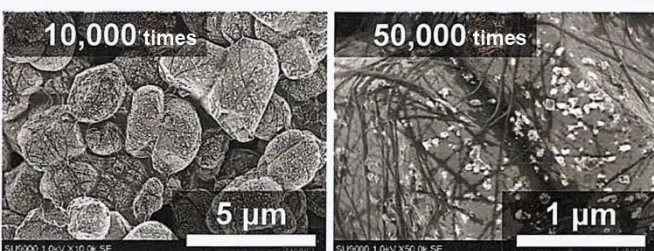
### NCM811/ Solvent-based MWCNT (~0.5wt%)



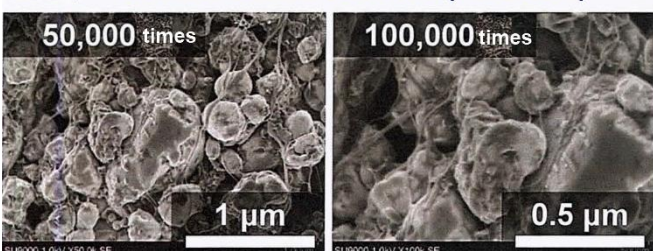
### NCM523/ Solvent-based SWCNT (~0.05wt%)



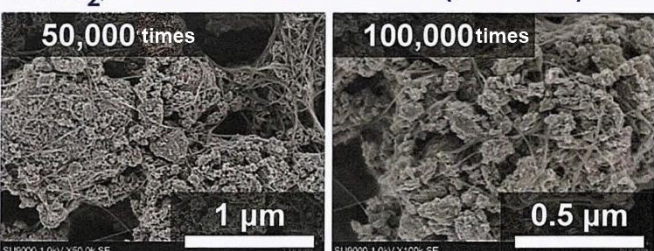
### NCM622/Solvent-based SWCNT (~0.05wt%)



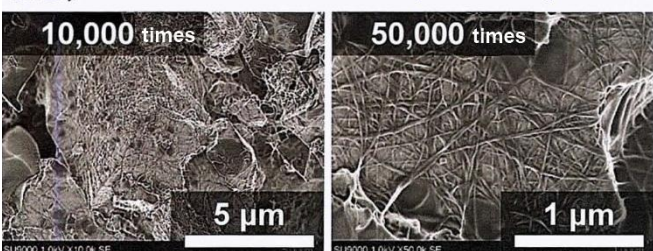
### LFP/ Solvent-based SWCNT (~0.2wt%)



### MnO<sub>2</sub>/ water-based SWCNT (~1.0wt%)



### SiO/ water-based SWCNT (~0.4wt%)



### Si-C/ water-based SWCNT (~0.2wt%)

