



New-Generation of Powder Processor for Precision Mixing and Composing Treatment Technology

## NOBILTA®

The Nobilta is the New-Generation powder processor designed to perform rapid precision mixing of macro to micro powders, surface modification to create and treat composite materials and spherulization of particles in accordance with specific requirements in one processor.



NOB-130  
Lab. Machine  
(0.5 Liters)



NOB-300  
(10 Liters)



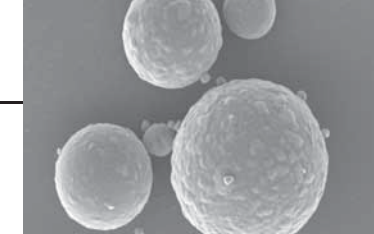
NOB-700  
Production scale  
(100 Liters)

### Features

- To process precision mixing, composition, surface modification, spherulization etc. in one machine
- To reduce operation time
- To achieve particle design in the nano range
- Process of wide range powders from nano to micronsizes
- High energy efficiency
- High suitability for difficult materials such as heat-sensitive material, abrasive material, adhesive material, etc.
- Easy to dismantle for inspection, maintenance and cleaning
- Compact, low energy consumption, low capital and operating costs

### Specification

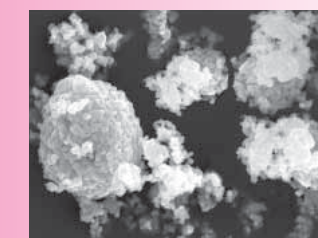
Model	NOB-130	NOB-300	NOB-450	NOB-700	NOB-1000
Motor [kW]	5.5	30	55	110	200
Rotor [Max.rpm]	6,000	2,600	1,700	1,100	780
Volume [L]	0.5	10	30	100	300
Width : W[mm]	600	800	1,700	2,000	2,800
Length : L[mm]	1,010	2,270	2,400	2,500	3,500
Height : H[mm]	550	1,260	1,600	1,700	2,300
Weight [kg]	230	1,000	3,000	5,000	10,000



### Applications

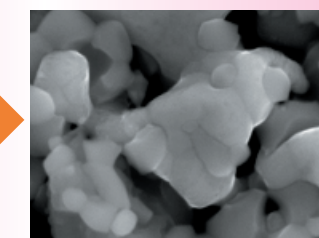
- Energy storage** Improved capability of fuel cell electrode materials and high performance separator. Improved packing density and burning ability for secondary batteries.
- Copy & Photos** Better flowability of Toner. Surface modification of carrier particles.
- Pigments** Better color tone by high dispersion
- Chemicals** Functional resin (nano filler + resin), High performance catalysts, Effective high temperature treatment
- Cosmetics** Controlled refraction, Improved flowability by surface modification
- Architecture** High resistance to environment, High temperature resistance and high intensity material, Gradient functional composite
- Environment** Improvement of catalytic performance, effective high temperature treatment and high stability to environment

#### Nickel oxide / YSZ for fuel cell materials



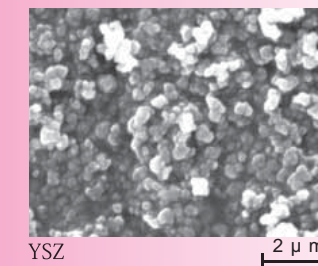
Nickel oxide

2 μm



Anode structure of composite

500nm

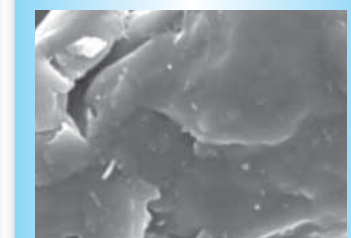


YSZ

2 μm

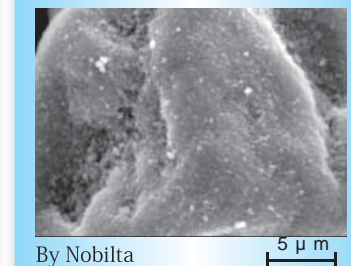
Yttria stabilized zirconia was bonded onto nickel oxide. It is realized to reduce operating temperature of SOFC due to wider interface between both materials, where the chemical reaction occurs.

#### Toner / Additives for Toner



Convention

5 μm

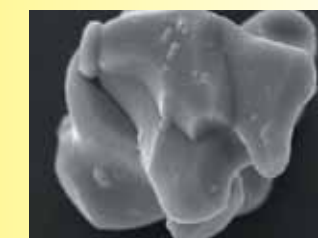


By Nobilta

5 μm

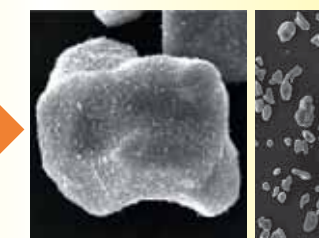
Fine additives were bonded onto toner with higher dispersion and shorter operation time against the convention. In addition to this, flowability was improved a lot.

#### Lithium cobaltate / Nano carbon for secondary batteries



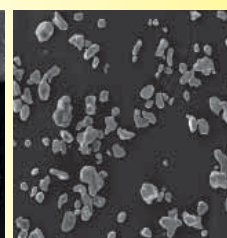
Lithium cobaltate

10 μm

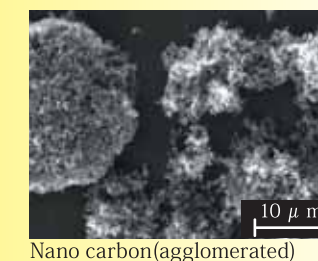


Composite

10 μm



50 μm



Nano carbon (agglomerated)

10 μm

Nano carbon was bonded onto lithium cobaltate. Inner conductivity was improved but also viscosity of slurry was reduced due to high dispersion of nano carbon. High productivity and low operating cost were achieved.