



**CREATIVE INNOVATION**

***NGETech Inc.***

# Resources of CEO

## Ph.D/President (Kim, Jong-Soon)

<b>■ Educational Background:</b>	
1992.02	Materials and Science Engineering, Pukyong National University, Korea
1995.03	Master, Materials and Chemical Engineering, Yokohama National University, Japan.
1998.03	Ph. D in Materials and Chemical Engineering, Yokohama National University, Japan.
<b>■ Scholarship and Fellowship:</b>	
1992. 10 ~ 1998. 03	Scholarship of Japanese Ministry of Education.
1998. 07 ~ 1999. 06	Postdoc. in Chemisty Deparment of UWC.
1999. 09 ~ 2000. 02	Postdoc. in the Korea Institute of Energy Research.
<b>■ Business Background:</b>	
1997.04 ~ 1998.03	Research assistant in Yokohama National University
1999.09 ~ 2000.02	Part-time lecturer in Pukyong National University
2000.03 ~ 2000.10	Associate researcher in Korea Institute of Energy Research
2000.10 ~ 2002.02	Director in Nanopac Co., Ltd
2002.03 ~ 2006.07	Director in Nanux Co., Ltd
2006.09 ~ present	President in NGETech Co.,Ltd

# Resources of Company

## Company History

2006.09.08	Business Incubator Center (No. 306) at Pukyong National University
2006.09.08	Established NGETech Inc.
2006.09.08	Mr. Kim, Jong-Soon inaugurated as CEO
2006.09.27	Designated as TBI (Government project) -Nano-metal material development and its application to infrared reflection coating-
2006.09.29	A payment contract with LG Electronics for deliverables
2006.11.29	Venture Company Certificate (Technology Assessment Guaranteed Company, No. 20060100625)
2006.11.30	Pure-gold particle and its manufacturing techniques by photoelectrochemical reaction (patent pending, #10-2006-0119456)
2007.04.01	Designated at Eco-Technopia 21 project (Government project) - Development of high efficient air-filter by using nano-metal/inorganic materials
2007.04.19	A development contract with LG Electronics
2007.07.11	Preparation method of organic inorganic hybrid binder and their coated products (patent pending, #10-2007-0066614)
2007.11.16	A non-disclosure agreement contract with SKC
2007.11.19	Foundation a industrial R&D centers
2008.01.04	A non-disclosure agreement contract with LG Electronics
2008.02.13	Preparation methods of nano-metal colloids and their applied products (patent pending, #10-2008-0012911)
2008.04.24	Certified the materials & components company

# Customers & Products

<b>■ LG Electronics</b>			
1	Photocatalyst coating fluid and filter	Air conditioner, Air purifier	2001
2	Nano-Silver(Ag) coating fluid and filter	Air conditioner, Air purifier	2002
3	Nano-Copper(Cu) coating fluid and filter	Air conditioner, Air purifier	2002
4	Nano-Silver(Ag) M/B chip	Dust collector	2003
5	Nano-Bio fusion coating fluid and filter	Air conditioner, Air purifier	2005
6	K-AV(anti-virus) coating fluid and filter	Air conditioner, Air purifier	2006
<b>■ POSCO</b>			
1	Anti-Corrosion coating fluid ; organic/inorganic hybrid binder	Cr-free, EGI	2004
<b>■ SAMSUNG SDI</b>			
1	Nano-Metal dopped photocatalyst coating fluid	VTR	2004
<b>■ SSANGBANGUL(Underwear makers)</b>			
1	Nano-Silver(Ag) coating fluid	Textile	2003
<b>■ Others</b>			
1	Blocking UV ray and super-hydrophilic coating fluid	A bill advertise plate	2001
2	Photocatalyst coating fluid for purification polluted indoor air	House, Building	2003

## ▶ PRODUCTS

- Nano-Metal / Metal Oxides
- Nano-Metal dopped Nano Metal Oxides
- Bio-Ceramic
- Inorganic Binder
- Organic / Inorganic Hybrid Binder
- Dehumidifier / Humidifying Polymer
- Anti-Bacterial spray
- Deodorant spray
- Functional Coating Materials



; Anti-Bacterial, Anti-Fungi, Anti-Aging, Anti-Corrosion, Anti-fingerprints, Super-hydrophobic, Retardant, Hard coating, Deodorization, Near-Infrared ray Block

## ▶ APPLICATION

- Functional Filter, Functional Non-Woven
- Functional M/B Chip
- Functional Additives  
; Cosmetic, Soaps, Mask pack, toothpastes.
- Ohters



**ANTI-BACTERIAL / DEODORANT**

; Petrochemical Catalyst, Electronic Materials, Optical Materials, Dental Materials, Biomaterials.

# Core Technology

## Nano-Metal/Metal Oxide Synthesis Technology

- Chemically
- Electrochemically
- Photoelectrochemically
- Sol - Gel
- Peptized-Sol

+

## Binder Synthesis Technology

- Inorganic
- Organic/Inorganic Hybrid

## Nano-Metal Colloid

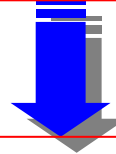
Gold (Au), Platinum (Pt),  
Palladium (Pd), Silver (Ag),  
Gold Capped Silver (Au/Ag),  
Platinum Capped Silver (Pt/Ag), etc.

## Nano-Metal Oxide Colloid

Photocatalyst (TiO<sub>2</sub>),  
SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, etc.

## Nano-Metal Doped Metal Oxide

Au/TiO<sub>2</sub>, Au/SiO<sub>2</sub>, Pt/TiO<sub>2</sub>, Pt/SiO<sub>2</sub>, etc.



## Application of Nano-Materials

Near-Infrared Ray Block, Fire Retardant,  
Anti-Static Coating, Hard Coating,  
Super-Hydrophobicity, Anti-Bacterial,  
Anti-Corrosion, Deodorization,  
Dehumidify Polymer, etc.



## Application Products

Functional Filter or Non-Woven Fabric  
Functional Coating Material  
Functional M/B Chip  
Functional Additives, etc

## Fusion Technology

# Nano-Gold (Au)

Riding on the recent well-being boom, nano-gold (Au) is being applied to various industrial fields including premium cosmetics and soaps. It is well known that its efficacies in oriental medicine include the prevention of skin aging and the prevention and treatment of dermatitis. Dongeuibogam have reported that nano-gold has the action of purifying skins. In addition, western medicine records that gold has been used for treatment of rheumatism.

NGETech provides various Nano-Gold(Au) Products, that may be applied in various fields of industry.

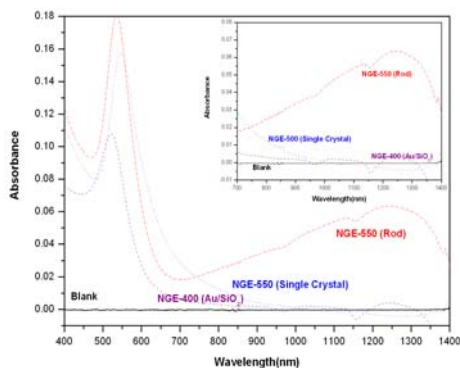
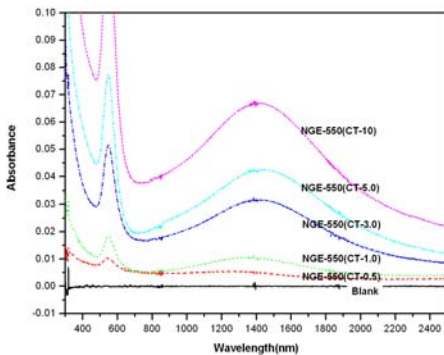


NGE-300

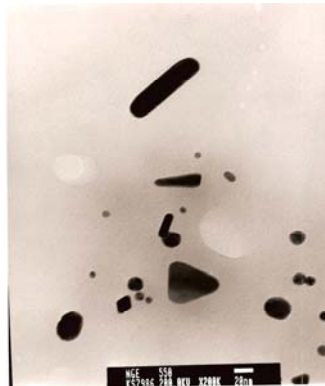
NGE-550

Model.	Type	Application
NGE-300	Golden Pearl	A Luxury Cosmetic, A Luxury Soap, Medical material, Drinking
NGE-400	Au/SiO <sub>2</sub>	Anti-bacterial, Deodorization
NGE-500	Single Crystal	Conducting Material
NGE-550	Rod	Near-Infrared ray Block

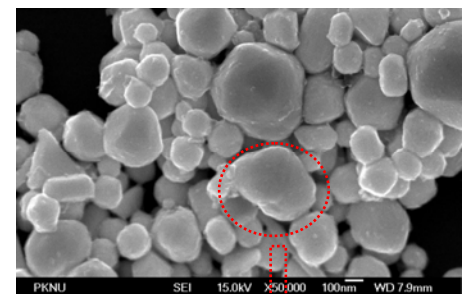
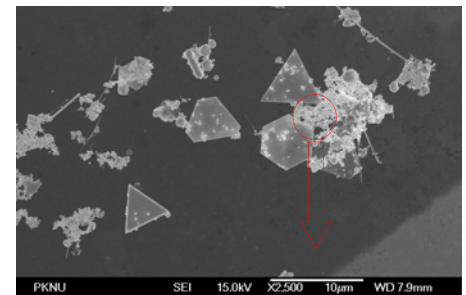
## UV/VIS/NIR Absorbance Property of Nano-Gold



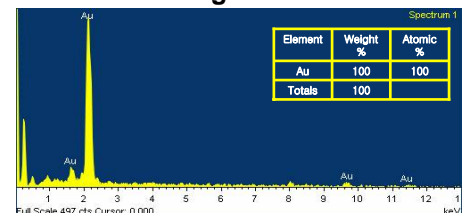
## TEM Image of Nano-Gold Rod



## SEM Image of Single Crystal Gold



## SEM/EDS Image



# Nano-Materials(Pt, Pd, Ag, TiO<sub>2</sub>)



NGE-700

NGE-750

NGE-100

NGETech retains the technologies to synthesize nano-metal colloids and nano-metal oxides. NGETech will provide the highest level nano-material products for various needs of customers.

## Nano-Metal/Metal Oxides Synthesis Technology

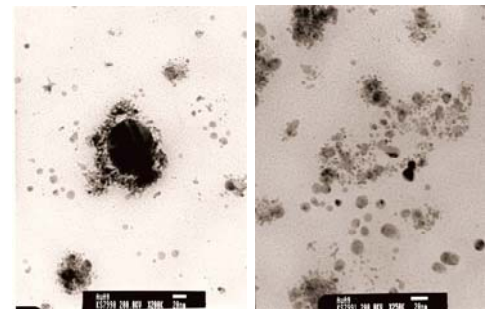
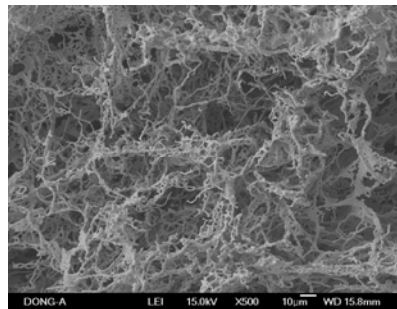
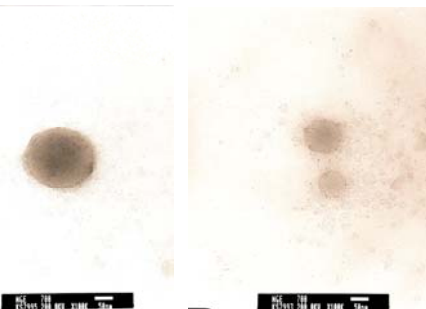
- Chemically
- Electrochemically
- Photoelectrochemically
- Sol-Gel / - Peptized-Sol

Model.	Type	Application
NGE-700	Platinum(Pt)	A Luxury Cosmetic, A Luxury Soap, Catalyst
NGE-750	Palladium(Pd)	Catalyst of Chemical Process
NGE-100	TiO <sub>2</sub>	Removal of VOCs, Anti-Bacterial & Deodorization, UV Block
Ag Sponge	Ag	Anti-Bacterial, Deodorization, EMI
Au Capped Ag	Au/Ag	No Color Change, Anti-Bacterial, Deodorization

TEM Image of Nano-Platinum(Pt)

SEM Image of Ag Sponge

TEM Image of Nano-Gold capped Silver



## ► Nano-Platinum (Pt)

### 1. Superior anti-aging and anti-bacterial effect

; Platinum nano-colloid may eliminate 11 kinds of oxygen free radicals which are generated in human body by absorbing oxygen.

### 2. Approved as food additive in Japan

; Platinum is known to have half-life of 26 hours in human body.

### \* What is oxygen free radical?

; It refers to what 1-2% of oxygen from air that is respired was changed within the body

; It causes arterial sclerosis, diabetes, arthritis, atopic dermatitis, etc.

; It promotes oxidation of cells, which cause skin aging)

; It is also caused by overeating of processed foods, excessive drinking, smoking, stress, or severe exercise.

# Functional Coating Materials

## ■ Inorganic Binder

Though inorganic binders are mainly constituted by silicone which can be substituted in Ti and Al during the synthesis, they provide strong binding force and hence the excellent adherency with an addition of small amount to the functional nano-material fluid.

GE-100



## ■ Organic/Inorganic Hybrid Binder

NGETech has developed an organic/inorganic nano-composite hybrid binder to overcome the shortcomings of organic binder and inorganic binder as well. The organic/inorganic hybrid binder shows an excellent binding property regardless of the type of substrates such as plastic, inorganics or metals. These binders are helpful to develop the functional coating nano-materials, functional filters, functional non-woven fabric and functional plastic with nano-particles.

GE-200



## ■ Super-Hydrophobic Coating Material

Super-hydrophobic coating surface



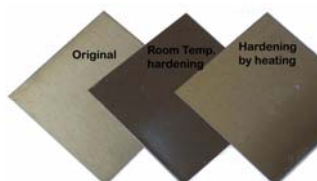
Materials that repel water on a molecular level are called hydrophobic. Superhydrophobic surfaces have generated a lot of interest due to their significant potential for industrial and scientific application. NGETech super-hydrophobic coating material has water contact angle of its coating surface higher than 150°.

ET-100



## ■ Hard-Coating Material

- Hardness: 6~8H
- Coating films; Flexible
- Hardening: over 70 °C



ET-200



Model.	Type	Application
GE-100	Inorganic Binder	Binder for Nano-material Coating
GE-200	Organic/Inorganic Hybrid Binder	Binder for Functional material (ex : Anti-corrosion, Anti-finger, etc)
ET-100	Super Hydrophobic Coating	Anti-frost, Anti-corrosion(Steel, etc)
ET-200	Hard Coating	Surface protection (LCD plate, plastics, STS, etc)



**CREATIVE INNOVATION**

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