

**Sketch Corporation**  
**Manufacturer of Inorganic Adhesive Binder**  
**Opens new horizons in Nanotechnology Functional Coating**  
**Development**

**CORPORATION OUTLINE**

To See is to Believe

But

Try is Best !



A cup of kindness  
From  
Sketch

## HISTORY

### What brought us into the Nanotechnology Industry.

Over 15 years ago our involvement with ToTo's Hydro therapeutic business brought us into the nanotechnology Industry.

Our experience with maps and car navigation led us into helping with ToTo's researches on photo catalytic Titanium Oxide.

There we tackled with films applied to motor cars and super hydrophilic self coating used for the body.

To this end we imported 3,500 low pressure spray guns from the United States and got started on photo catalytic coating.

Then we had to face up to problems arising from global warming. At the time, the only Insulating products at window panes were mainly film material.

The cost was too high & installation required professional skills.

Our answer was to develop a product that would last Twice As Long, Cost Half the Price & be Easily Installed by Anybody.

Our participation in the production of ToTo's 2 enterprises, Photo Catalytic coating & Thermal Insulation coating for Window Panes, combined with our view that the Ultra fine particle Nanotechnology market was bound to noticeably expand, were major factors for making Nanotechnology the main pillar of our operations.

Round that time, the Japanese Government too, recognized Nanotechnology as a new Industry and the mass media backed by Television, showered the public with unending reports. Strong exposure did create a new wave but the state of the Nanotechnology then was full of thorns.

Our first 5 years in the field were plagued with problems.

We discovered the main reason was not only due to working out the Nano material but that most of all, that the nanotechnology coating as well as the powerful adhesive agent had to be 100 % inorganic & transparent.

As a result, 10 years ago we succeeded in developing a 100% inorganic adhesive agent that could be added to various types of nano materials.

We now develop & manufacture Electrostatic, Dirt Prevention Coating & Deodorizing. Antibacterial Coating, among others.

Presently, Sketch has developed Energy Saving Glass Coating for Window panes insulation & Electrostatic, Dirt & Stain Prevention Coating to replace photo catalytic coating.

Those 100 % inorganic super hydrophilic nano coatings are now the main 2 nanotechnology coatings actually distributed within Japan, Korea, China & Canada as Super Glass Barriers.

On the Japanese market The Energy Saving Glass Coating or glass Insulation Coating is distributed OEM to 20 Companies, while ECO Business Club, an organization started up directly by Sketch, gathers over 150 companies distributing across Japan in a common operation. This network with a unified pricing policy, boasts the No. 1 market shares in Japan.

After over 4 years of trial inspection by Shimizu Construction Co.

The Electrostatic, Dirt Prevention coating was recognized as a replacement to Photo Catalytic Dirt Prevention Coating, adopted for the Tokyo Big Site and Gradually an increasing number of corporations.

A newly ( July 2010 ) Electrostatic, Dirt Prevention Super Hydrophobic coating , that can be coated by hand, is now facing the demand for solar panels, and the Chinese Market abundant in high rise buildings featuring glass panels. The Low cost & high performance of this product are the main factors behind the drastic & speedy change from Photo catalytic & Fluorine coating, on the Dirt & Stain Prevention Market.

With the development of Electrostatic Prevention Coating & subsequent improvements in production & technology, Sketch started to introduce its unique adhesive agent techniques to the Chinese market with a thorough slash on prices & new coating effects.

From the present coating centered on housing material the trend shifted to functional nanotechnology coating, covering processing lines to supply Construction & Road materials at forbiddingly low prices.

This translates into the following : Performance Prices.

- For solar Panels : over 5% Light Penetration up & Electrostatic, Dirt Prevention coating at less than ¥ 100 per Square meter (m<sup>2</sup>)
- Electrostatic, Dirt Prevention & Super hydrophilic functions for outer Window panes coating at less than ¥100 per square meter (m<sup>2</sup>) .
- Anti bacterial, including anti influenza & deodorizing coating for internal window panes at under ¥100 per (m<sup>2</sup>) .
- Electrostatic & Anti dirt coating for Roads & Exterior Materials at less than ¥ 100 per square meter (m<sup>2</sup>) .
- Application of electrostatic & Dirt Prevention functions to Acryl & Polycarbonate products for less than ¥100 per square meter (m<sup>2</sup>) .
- Moreover, our policy lies in applying this inorganic adhesive technology to developing products fit for South East Asia & the Middle East area in collaboration tie ups with partner corporations.

#### **SKETCH 'S SUPER HYDROPHILIC ADHESIVE AGENT.**

Sketch is an established manufacturer & developer of inorganic adhesive nanotechnology agents that harden fast, solidify at room temperature are transparent, feature thin layers and also have powerful adhesion & leveling properties to achieve multifunction nanotechnology coatings.

In our quest to achieve the Highest Grade in nanotechnology coating there are 3 technologies we have had to master.

(1)- The first Technology is concerned with turning the Ultra fine particles of Metal oxide & Chemical Substances to below 10 nano size.

Normally, anybody can easily manage up to 1u unit. But to reach below 200 Nano units, & especially to turn Ultra fine particles to a level below 10 nano size requires, from both facilities & cost point of view, a tie up arrangement with major chemical manufacturers.

- When ultra fine particles reach below the 10 nano size level, then functions improve to such a high degree that they can not be compared to what they were at the micron state.

-Various manufacturers of Chemical Materials in Japan daily strive to develop the functions of Ultra fine particles in metal oxide substances. What was unthinkable to this day may become possible the next day. With the constant development of materials featuring new functions, the Industrial world is destined to great changes.

(2)- The 2<sup>nd</sup> Technology aims at maintaining a stable & even spread of the Ultra fine metal oxide particles within 50 nano size without permitting the formation of Primary or Secondary lumps on the surface.

When Ultra fine particles reach a 2 or 10 nano size, the creation of a lump will bring down the level to round about 100 to 200 Nanos.

That will cause a lack of transparency and notable degradation of functions. This leveling technique is actually the focus where Japanese chemical manufacturers Capability is evaluated.

This leveling technique requires quite a lot of know how and cost. Cooperation with major chemical manufacturers here is much more efficient than independent development.

Major manufacturers of chemical materials are constantly on the look out for information on the market demands for materials development.

Therefore it is most important to transmit the needs of Specialists from various fields.

(3)- The third technique involves the efficient usage of ultra thin highly adhesive inorganic technique to fully exercise the respective functions of nano technology ultra fine particles spread in a stable and even form.

It would be senseless to develop functional materials through time consuming efforts & at great cost, without being able to attach the required function to such materials where needed.

For the Photo catalytic coating, especially, the introduction of an inorganic adhesive agent will make a vast difference in efficiency.

It is imperative that the functional material be beautifully spread on the coating surface.

Only through the amalgamation of these 3 technologies can a high performance, multi Function nano technology coating be achieved.

In this respect, Sketch Corp. has cooperated with major manufacturers of chemical Materials in the Research & Development of the first 2 technologies, while for the third, or the inorganic adhesive agent technology, it has succeeded in developing a world first, thin layer low cost, high performance, multifunction coating that hardens at room temperature.

Presently, Major manufacturers of nano technology coating have expressed strong interest in this development.

At the moment, several types of silica act as adhesive agent, while the inclusion of over 3 types of metal oxide between 0.1 to 0.5  $\mu$  enable the full exercising of characteristics.

One particularly interesting point in this technology lies in the fact that with a little amount of silica as adhesive agent, the material & the functional material can be powerfully bound. This permits the Electrostatic Prevention material to be nicely set on the coating surface. As the quantity of additives is reduced to less than half, performance is raised by over 100 %.

Actually, Japan is at the forefront worldwide in the process of turning metal Oxide substances into ultra fine particles & leveling.

Future developments are likely to revolutionize the present state of things with new developments in this technology of Ultra fine particles, to create new markets.