# Shimada Appli G.K. Company Detail

2016/Nov.

| | | | | | |
|---|---|---|---|---|---|
| Location | R & D Laboratory : 〒333-0842 3-7-15-101,Maekawa,Kawaguchi-shi,Saitama Pref. | | | | |
| | Head Office : 〒336-0926 3-2-17 Higasiurawa , Midoriku,Saitama-shi,Saitama Pref. | | | | |
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| | Tel No. : 048-269-7703 | Fax No : | 048-875-2811 | | |
| Representative Name | Title Representative | Capital | 8 mirion Yen | Agency | Diterectron,Kiyoritsu Chemical,Owell、Eunil |
| | Takaji Shimada | Foundation year | 2011/July | | |

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| Description of business | Shimada Appli G.K. is the venture combination company which performed a company in 2011, and sells the precision spray valves and system to each industry of semiconductor, PCB, battery, bio and food based on paint coating technology experience more than 40 years. |
| Its feature | The spray-type liquid discharge valve can make tornado style flow with the directivity by special extension adapter and the nozzle which has an extra-fine narrow. The coating valve which we named FSCC06 selective spray coater can have fine edge definition with a thin film.(Patent acquisition) |

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| Main products and technology | Outline | FSMicro Spray Gun,FSCC06 Selective Coater,SA Film Coat Gun & Table Coater |
| | Utilization introduction example | Conformal coating for VOC. Photo resist coating for MEMS & WLP. PE dot Coating. Electric conduction material coating. Coating of a photo catalyst and special adhesives. solder mask coating for PCW. Coating of a functional material in an LED manufacturing process. (The spray coating of a phosphor or a surfacing agent ) Coating to the thin film. Functional film formation to a thin film solar cell or a silicon substrate. The application of a platinum catalyst. Serective coating for solvent type, waterborn type & solventless type conformal coating |

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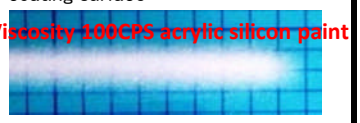
| Patent | 「Valve for ejecting small amount of liquid material and capable of being assembled and disassembled without use of tool」Japanese Patent No 5846645、Chinese No0039365.4, Taiwan NoI526251<br>「Coating system & method of waterborn type conformal coating」 Japanese Patent No 5661186、South Korea No 10-1415620<br>「Llow flow late valve for coating low & middle viscosty material] Japanese utility model No3191270<br>「Spray valve」 Japanese utility model No3199594 Additionally 5 cases of whole present's patent application |
| Commendation results | Saitama-shi new business section award in 2014<br>Shibusawa Eiichi business award Technical section in 2015 |

## An example of case study of main product FSCC06 selective spray coater

### Conventional method

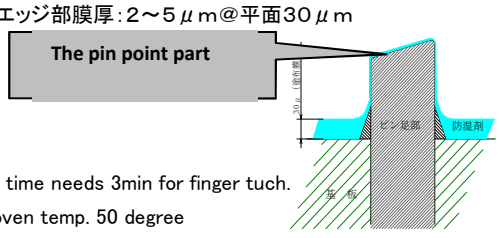
**Marking** Conventional air spray & brush

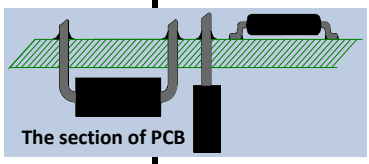
- Less than voscosty 200cps is needed for coating surface
- many sprash at min10mm width
- curing time 2min over at more than 25 μ
- Even brush coating is lack of the film thickness.
- Clogging on chip, flow late unstableness




**Conformal coating** Select coating with film pattern of lubber type material

- 防湿材約60%希釈で液粘度50CPSの液加温システム
- 凸部エッジ部膜厚：2～5μm@平面30μm




- Dring time needs 3min for finger tuch.

Heat oven temp. 50 degree

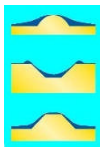
**Thin line coating** Slot orrRoll coater method

- A linear blur for the solid body is sometimes caused.
- Clogging
- There is no stability of continuous coating..
- The film thickness is uniform.

**Resist coating** Conventional spray & Screen printing

- Solder mask material

Transfer Efficiency Screen printing7～8㎡.kg,
Conventional spray 4㎡/kg @20-25μm(Dry),



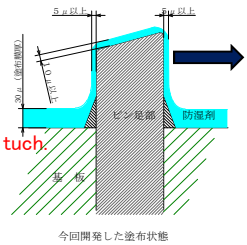
### Method of used to FSCC06 selective spray coater

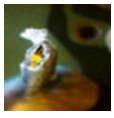
**Correspondence** Material viscosty 800cps by FSCC06 selective coater

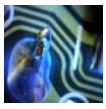
- Line coating is possible by flow **0.5mm to 15mm width.**
- Satelite is a little at 10mm width.
- 1 pass coating more than 25 μ film thickness.
- Dring time 1min less at more than 25 μ
- No clogging


**Correspondence** Coating 200cps by FSCC06 coater & other system

- CC material 20% dilution＋Solvent for angel hair prevention→2-5% addition
- **Film thickness of the edge：10～13μ@flat surface 30μm**



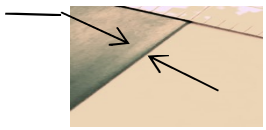


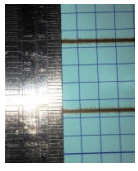
- dring time 1min less for finger tuch.
(Heat dryer 50℃)

**A fact is applied, and finds out that the pin point part**

**Correspondence** Thin spray oating of 2㎜ less width by FSCC06 coater

- It's possible to apply long continuation by flow late management.



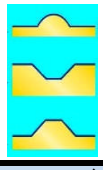


**Correspondence** Selective coating by FSCC06 coater

- Solder mask material of 500cps viscosty.

**FSCC06 select coater 5～6㎡kg @25-30μm(DRY)**

T.E.is more than 30% up,Like an architrave,coating



| Comparison with conventional system | Item | Cost | Production/workability | Quality/Reliability | Others(Drying efficienty) |
|---|---|---|---|---|---|
| | Numerical value ratio | Reduction more than 60 %. | Improvement more than 50 %. | Improvement more than 60 %. | Reduction more than 50 %. |