

## **ANTI-STATIC DISCHARGE COATING (ASD)**

**CUSTOMISED SURFACE SOLUTION TO SOLVE ELECTROSTATIC DISCHARGE (ESD) DAMAGE IN SEMICONDUCTOR MANUFACTURING**

***Electrostatic Discharge (ESD) is the main source of failure in the Semiconductor Industry - it can change the electrical characteristics of a Semiconductor device which is not ideal.***

### **NEW GENERATION ANTI-STATIC DISCHARGE COATING (ASD)**

A new static dissipative solution is introduced into the semiconductor industry through the dry process of vacuum coating. This allows substrates such as metals, ceramics and rubber to be coated at low temperature with superior adhesion and surface resistance.

### **WHAT IS TA-C COATING?**

Tetrahedral Amorphous Carbon (ta-C) is a hydrogen-free Carbon coating with high sp<sup>3</sup>-sp<sup>2</sup> ratio. It has a stable diamond structure that exhibits high hardness, superior temperature resistance and extremely low friction coefficient.

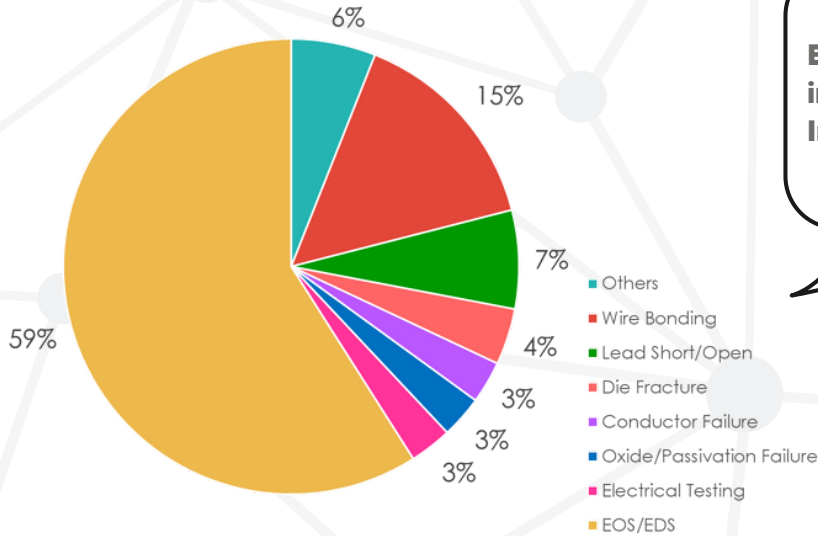
Our patented FCVA\* technology is able to produce ta-C coatings (trademarked TAC-ON<sup>®</sup>) that offers up to 88% of Tetrahedral-bonded sp<sup>3</sup> Carbon atoms; hence delivering superior coating solutions to you.

Unique Characteristics:

- ✓ Tunable Surface Resistance
- ✓ Dry Process Under Vacuum
- ✓ Excellent Adhesion to Substrate
- ✓ Room Temperature Coating
- ✓ Ultra Low Friction Coefficient
- ✓ High Wear Resistance

\*Filtered Cathodic Vacuum Arc

## SEMICONDUCTOR FAILURE RANKING



**EDS holds 59% of failure in the Semiconductor Industry**

## APPLICATIONS

### Wafer Contact Components

- E-Chucks
- Wafer Handlers
- Wafer Stages

### Front-End Applications

- Bearings
- Chamber Liners
- Docking Components
- Focus Rings
- Grippers
- Pump Components
- Showerheads

### Back-End Applications

- Conversion Kit (Test Assembly)
- Hot Plate, Insert, Plunger
- Pedestal
- Socket
- Wafer Carrier (Wafer Level Packaging)

## PROPERTIES OF ASD COATING

Property	ASD
Coating Material	Ta-C + DLC
Thickness	≈ 10 nm
Coefficient of Friction vs Metal (Dry)	≈ 10 <sup>5</sup> Ωcm
Coating Temperature (°C)	< 150
Maximum Service Temperature (°C)	400 °C
Color	Deep Grey