

Whisker Controlled Flexible Flat Cable

Patent Pending

BACKGROUND



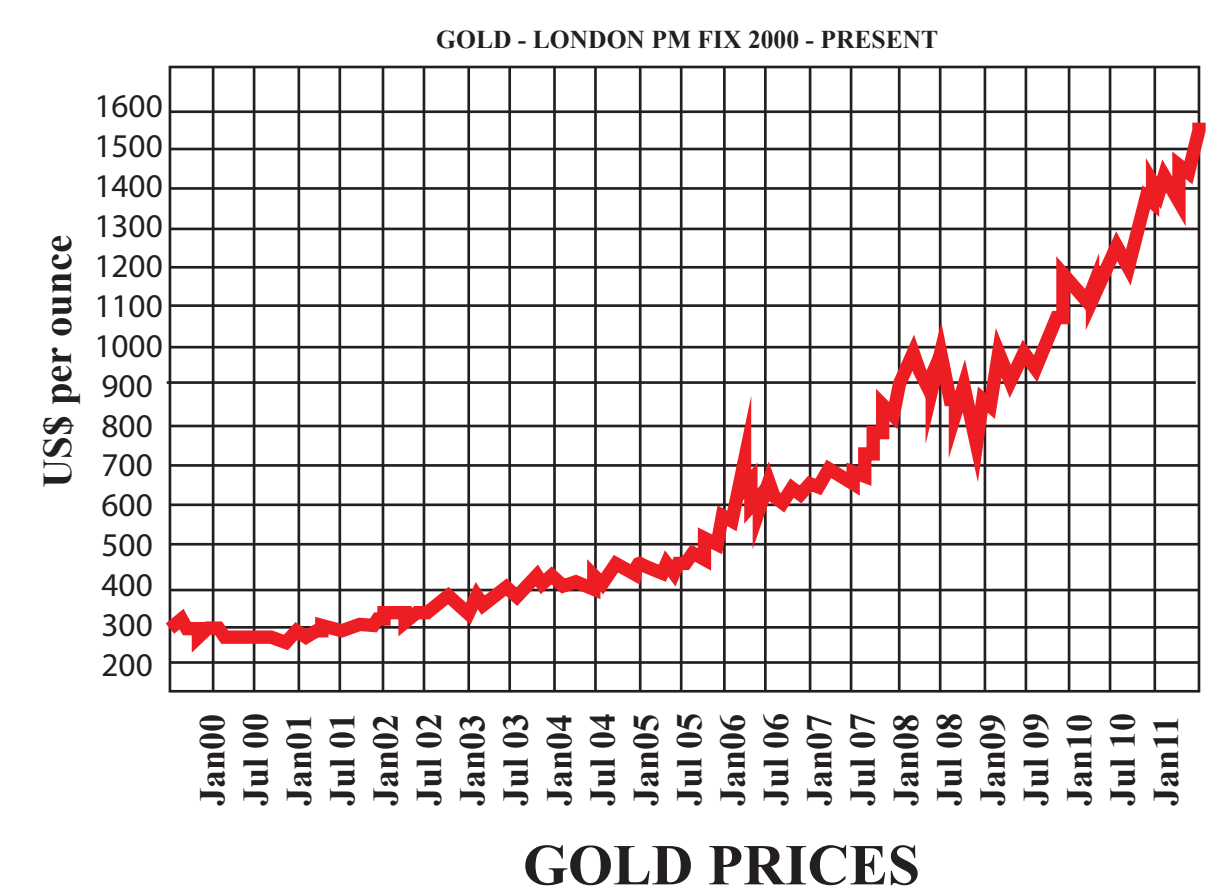
Lead co-deposition as an alternative of Tin Whisker mitigation has become obsolete as a result of RoHS directive on Jul 2006 that restricts the use of lead (Pb). Current methods for Tin Whisker mitigation which use Gold or Nickel to perform plating on copper (Cu) conductor wire for Flexible Flat Cable (FFC) is effective, but becoming uneconomical as gold price has increased 5 folds over the past 9 years. This provides the impetus to do research and development into other methods of Tin Whisker Mitigation which is effective, economical and yet environmentally friendly.

Whisker Controlled Ventura **V-Flex®** FFC

Gold Plating Whisker Control Method

Merits: Very Effective

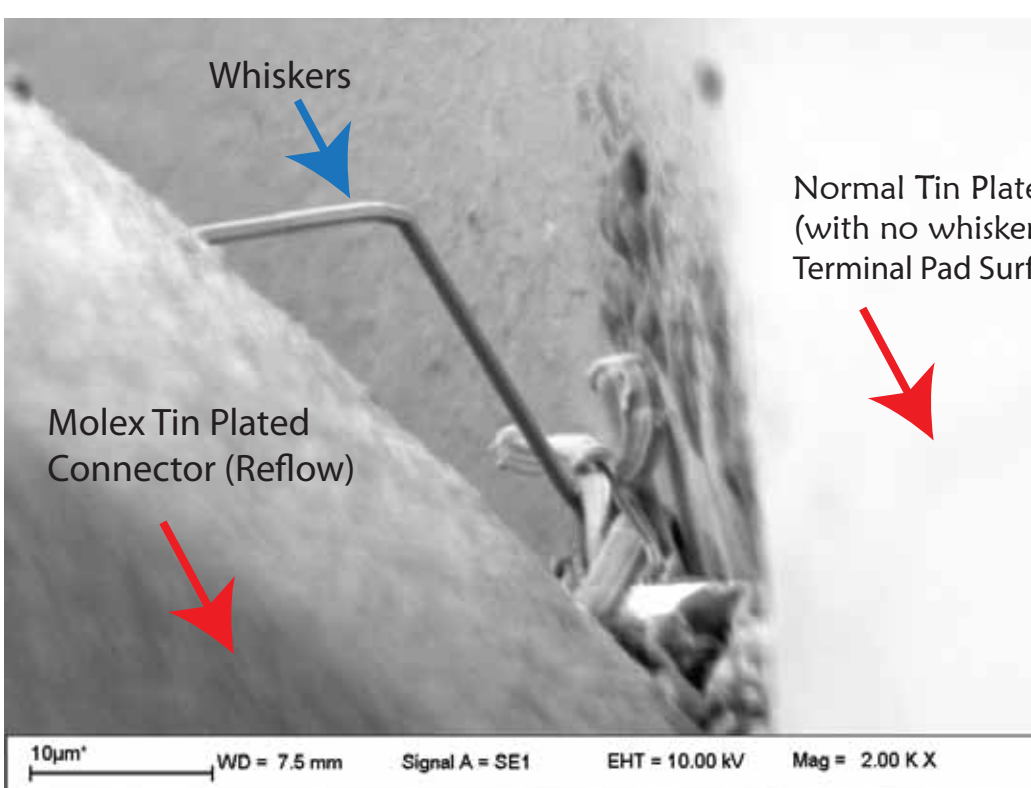
Disadvantages: Very Expensive (Gold price increase)
Environmentally not friendly
(Use of toxic chemical for gold plating)



Ventura **V-Flex®** V3 FFC (BREAKTHROUGH TIN WHISKER MITIGATION TECHNOLOGY)

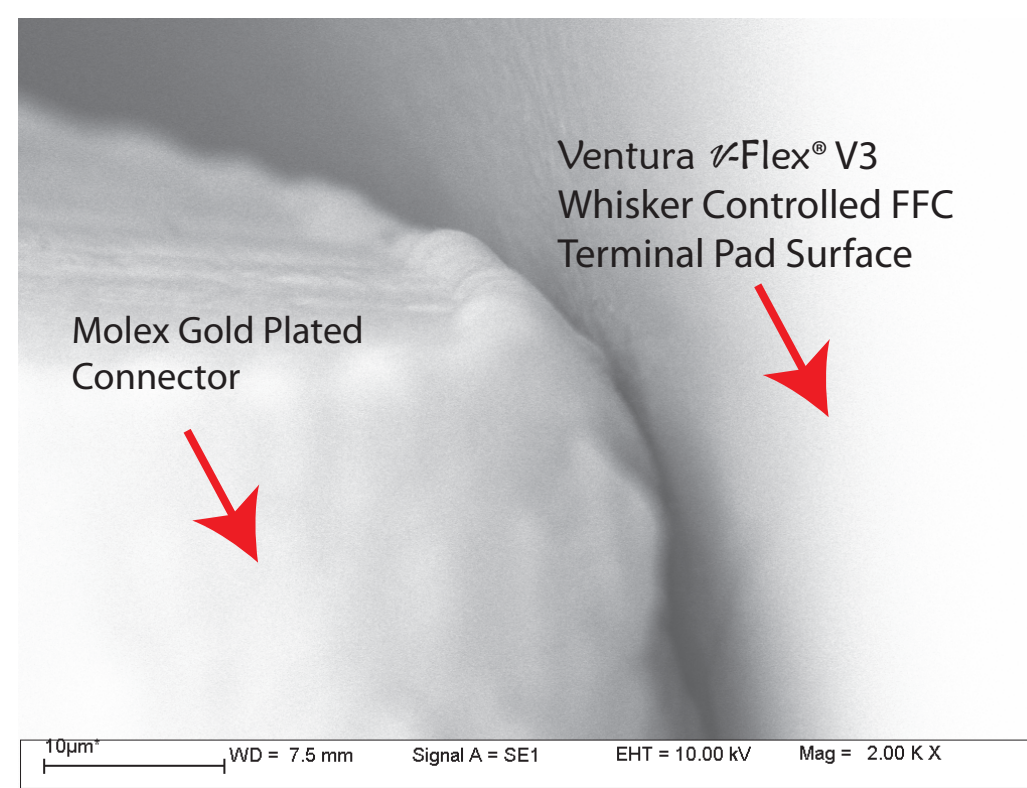
JSB Tech Pte Ltd & A*STAR (Singapore Government Research Agency) have co-developed to innovate the breakthrough Ventura **V-Flex®** V3 Whisker Controlled FFC new product (within INEMI Class 1 Standard) employing Annealing method for Tin Whisker mitigation Technology which is both effective, economical and environmentally friendly.

RESULTS



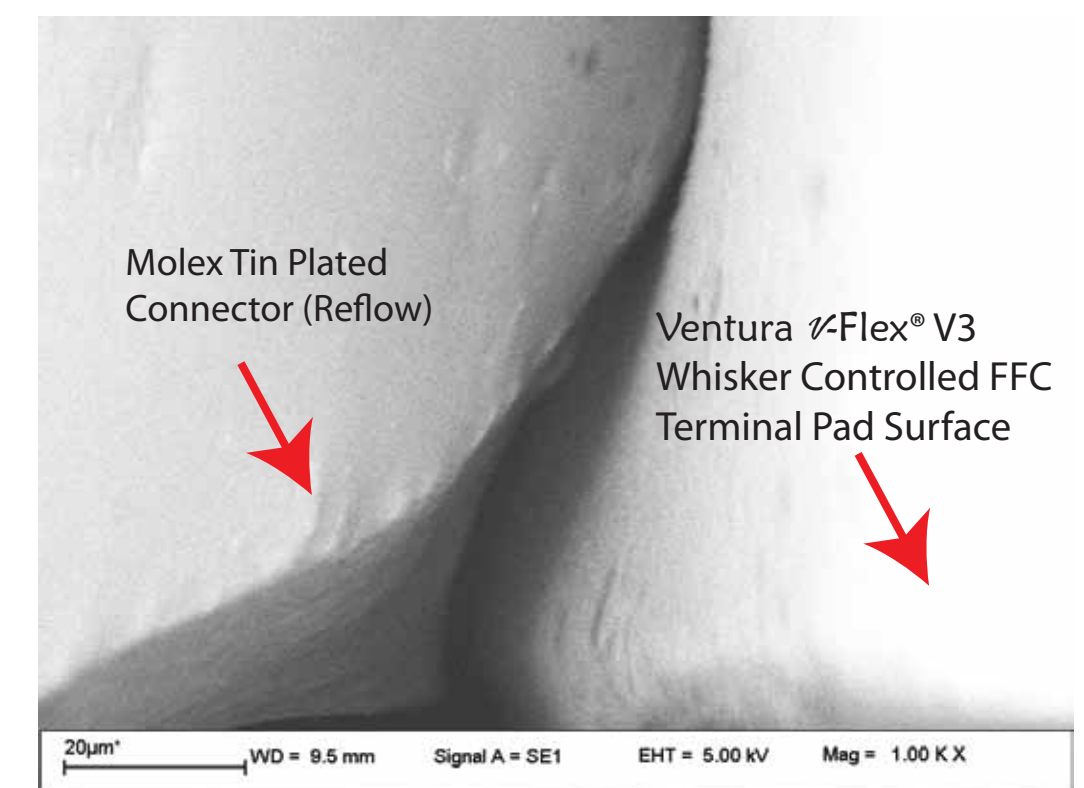
* Normal Tin-Plated FFC with no Whisker Mitigation Control & Molex Tin-Plated Connector (Reflow)

* Whisker Growth clearly observed after 1000 hours



* Ventura **V-Flex®** V3 FFC & Molex Gold-Plated Connector

* No Whisker Growth observed after 1000 hours



* Ventura **V-Flex®** V3 FFC & Molex Tin-Plated Connector (Reflow)

* No Whisker Growth observed after 1000 hours

MERITS & IMPLICATIONS

- 1) Reduction of COST comparing to GOLD (Au) Plating FFC by more than 30%
- 2) Improve product delivery LEAD TIME (no gold plating process & time required)
- 3) Environmental Friendly (eliminate the use of toxic chemical required by gold plating process)

APPLICATIONS:

Audio & Video System, Blue-Ray Player, Optical Drive, Game Consoles, Iphone/Ipad related, Laser/Inkjet printers/Scanner and other mobile devices utilizing serial I/O technologies