

# Pd-PPF プロセスに用いられる Pd めっき液への新規添加剤の効果

渡邊 新吾\*, 大西 潤治\*, 和知 弘\*, 曾根 孝之\*

## Effects of Using New Additive on Pd Plating for Pd-PPF Process

Shingo WATANABE\*, Junji OHNISHI\*, Hiroshi WACHI\* and Takayuki SONE\*

\*日本エレクトロブレイティング・エンジニアーズ株式会社 (〒254-0076 神奈川県平塚市新町5-50)

\*Electroplating Engineers of Japan Ltd. (5-50 Shinmachi, Hiratuka-shi, Kanagawa 254-0076)

### Abstract

Conventionally, IC packaging uses spot-silver plating, die-bonding, wire-bonding and resin molding on copper lead frame materials, along with solder plating of the lead parts to be soldered onto a printed board. This conventional method, however, has some serious problems that need to be addressed, such as Pb in the solder plating. Consequently, Pd-PPF has received attention for both environmental and technical reasons and has been practically applied in lead frame packages. Environmentally, it is Pb-free and the cyan consumption is reduced by the elimination of silver plating, which consumes large amounts of cyan. A number of technical benefits also can be achieved, in addition to the environmental improvement. Currently, it is important to make the Pd-PPF plating thinner, both to improve its properties and to reduce costs in the face of soaring precious metal prices. Thus, a crystalline adjuster was added to a palladium plating solution with a view to improving film quality and solder wettability was examined in order to improve the high-temperature resistance of palladium plated film. With the new additive, solder wettability was dramatically improved, and good solder wettability was obtained even from a thinner Pd-film. Moreover, other properties proved to be equivalent to or better than those achieved with the conventional process.

**Key Words:** Pd-PPF Process, Pd Plating, New Additive, Solder Wettability, Wire Bondability