

Advanced plating chemistry for Ni metallisation

nb technologies
consulting engineers



Nickel plating is one of the steps applied in metallisation concepts using plating on Ag paste seed or direct plating on silicon.

In such application, there are various requirements on the Ni layer properties and desired features on the plating chemistry such as

- low stress of Ni layer and low change of stress under heat treatment
- uniform thickness
- easy chemistry handling in setup, operation and maintenance
- compatibility with resist

NBT has worked on nickel plating chemistries for direct metallisation on silicon using electroplating process instead of electroless coating. The chemistry can also be setup to form **porous silicon** by electrochemical etching **and** electroplate the **Ni layer** for later silicide formation **from a single bath**. The adopted bath, enabling the combination of porosification and plating, is another important piece in our metallisation concept of direct plating on silicon (patent pending).



Major benefits

- Ni plating at room temperature, no need for heating, less evaporation
- Easy handling, no fall out of compounds at storage
- Compatibility with resists with low process temperature budget
- Combination with porous silicon formation for direct plating on silicon
- High grain stability under temperature in post-processing, such as silicide formation or soldering

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