New Etching Options

For perfect etching results

An etching speed increased by up to 25 %, line/space structures of less than 50 µm and etching factors greater than 6: The New Etching Options (NEO) enable a perfect etching process with qualities that were considered unachievable until recently. For both differential etching and conductor track etching. Existing SCHMID CombiLine and PremiumLine etching modules can be retrofitted.

- Etching with $CuCl_2$ of line/space < 50 µm
- Steep conductor edges:
  e.g. copper layer 23 µm ; etching factor > 6
- Uniform differential etching:
  copper removal 40 µm ; StDev < 0,90
- CpK > 1,60

NEW ETCHING OPTIONS (NEO)

Details

Vacuum Etching

The vacuum etching forms the key component of the New Etching Options. To minimize the puddling effect suction lances are installed between the nozzle pipes which take up the used etching medium and lead it into the module tank. Powerful vacuum blowers generate constant vacuum. Unlike with water jet pumps the vacuum never collapses - no matter whether the height-adjustable suction lances take in used etching medium or false air. The result is an absolutely uniform etching rate and less chemistry consumption.

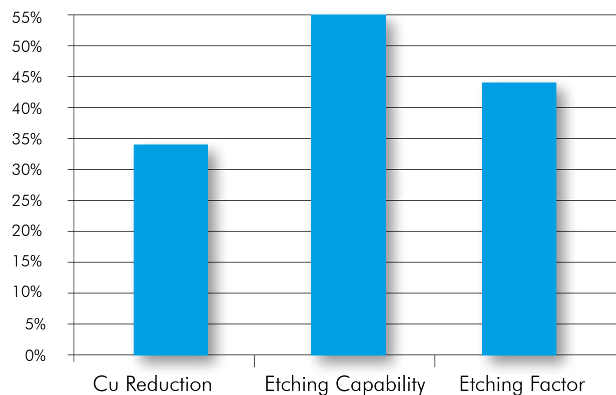
Nozzle Configuration

Maximum flexibility: With the optimized nozzle configuration the SCHMID system is able to adapt to any design to be etched and to refine the processes. A uniform distribution of pressure at the nozzles (up to 4 bar spraying pressure) not only improves the etching result, but also increases the etching rate. As a consequence the process time of the subsequent intermittent etching is reduced.

Optimized transport system

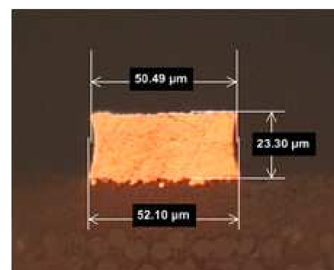
The optimized placement of transport disc rollers within the standardized etching module represents another New Etching Option. In addition to the vacuum etching, the improved design and placement of the transport disc rollers lead to an improved drain behavior of the process chemistry, thus decreasing the puddling effect detectably.

Performance Increase



	with NEO
Cu Reduction (StDev)	< 0.9
Etching Capability (CpK)	> 1.6
Etching Factor	> 6.0

Cross section



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