

## Micro Chemical Vias

### Inventors/Technical Experts:

**Name:** Rui de Oliveira  
**E-mail:** Rui.de.Oliveira@cern.ch  
**Department/Group:** EN/ICE  
**Phone:** 73745/ +41 22 76 73745

### Technical Description:

Chemical Via is a new chemical method to make microvias for high density printed multilayer circuits. Previous methods to produce microvias are based on complex technologies such as laser, plasma or photo imaging. Microvias are used to interconnect adjacent layers and consist of a small diameter hole (usually 70 $\mu$ m) with a thin metallic deposit covering their cylindrical walls to ensure the local conductivity between the bottom and top layers. Microvias of any shapes and dimensions are made possible at a low production costs.

#### *Pros:*

- Initial investment to use method is low.
- Production time of a Printed Circuit Board (PCB) does not depend on number of vias.
- Vias of any shape (circle, star, square, etc) can be produced and standardized.
- Process or method compatible with all standard PC assembly lines.

#### *Cons*

- Limitation on base materials.

### IP Status:

**Technology maturity:** Used by CERN PCB manufacturing workshop for the production of PCboards for HEP needs.

**Patent status and reference:** Ready for licensing. Patent granted in France, Japan, US, Taiwan, and Russia. Pending in Europe, Canada, and Korea. PCT WO03055288.

**Accessibility:** License available from CERN

### Market/Application suggestions:

Micro electronics and the PCB industry.