CLAIMS

1. A method for forming contact pads or circuits on a printed circuit board (PCB) over a filed or unfilled plated via, the steps comprising:

applying one of either an additional metallic or non-metallic coating to a final surface of a finished plated circuit or pad encapsulating side walls of a final surface plate, and also covering side walls of a metal layer plated onto a filled or unfilled via and on top of a wrap around plated metal that is plated in the via and onto the surface of a base metal to provide a slight undercut of panel plated metal and virtually no undercut of the base metal and of the plated metal, preventing subsequent undermining through an etching process and removing or limiting any excess of the coating around the pad to prevent shorting of the pad's or circuitry to adjacent pads or circuitry after etching exposed wrapped plate and base metal layers.

2. A method according to Claim 1, in which the coating is a metal suitable for the circuit or pads end application such as but not limited to gold, palladium or rhodium.

3. A method according to Claim 1, in which the coating is a metallic temporary etch resist to be removed after etch revealing the final surface finish suitable for the circuit or pads end application such as but not limited to gold, palladium or rhodium.

4. A method according to Claim 1, in which the coating is gold.

5. A method according to Claim 1, in which the coating is palladium.

6. A method according to Claim 1, in which the coating is rhodium.

7. A method according to Claim 3, in which the temporary etch resist is tin.

8. A method according to Claim 1, in which the coating is a temporary polymer etch resist to be removed after etch revealing the final surface finish suitable for the circuit or pads end application.

9. A method according to Claim 8, in which the polymer is applied with spin coating, spray coating, electrostatic spray coating, dip coating, or techniques otherwise known in the art.

10. A method according to Claim 8, in which the polymer is a photosensitive polymer selectively removed through photolithography.

11. A method according to Claim 9, in which the polymer is selectively removed through laser ablation or mechanical milling techniques.

12. A method for forming contact pads or circuits on a printed circuit board (PCB) over a filed or unfilled plated via, the steps comprising:

applying one of either an additional metallic or non-metallic coating to a surface and side walls of a metal layer plated onto a filled or unfilled via and on top of a wrap around plated metal that is plated in the via and onto the surface of a base metal to provide a slight undercut of panel plated metal and virtually no undercut of the base metal and of the plated metal, preventing subsequent undermining through an etching process, removing or limiting any excess of the coating around the pads or circuits to prevent shorting of the pad's or circuitry to adjacent pads or circuits after etching exposed wrapped plate and base metal layers.

13. A method according to Claim 12, in which the coating is a metal suitable for the circuit or pads end application such as but not limited to gold, palladium or rhodium.

14. A method according to Claim 12, in which the coating is a metallic temporary etch resist such as but not limited to tin to be removed after etch revealing pads and or circuits ready to accept a suitable final surface finish.

15. A method according to Claim 12, in which the coating is a temporary polymer etch resist to be removed after etch revealing pads and or circuits ready to accept a suitable final surface finish.

16. A method according to Claim 15, in which the polymer is applied with spin coating, spray coating, electrostatic spray coating, dip coating, or techniques otherwise known in the art.

17. A method according to Claim 8, in which the polymer is a photosensitive polymer selectively removed through photolithography.

18. A method according to Claim 12, in which the polymer is selectively removed through laser ablation or mechanical milling techniques.

19. A structure including contact pads or circuits formed on a printed circuit board (PCB) over a filed or unfilled plated via, comprising:

either an additional metallic or non-metallic coating that covering to a final surface of a finished plated circuit or pad that encapsulates side walls of a final surface plate, and also covers side walls of a metal layer plated onto a filled or unfilled via and on top of a wrap around plated metal plated in the via and onto the surface of a base metal to provide a slight undercut of panel plated metal and virtually no undercut of the base metal and of the plated metal, preventing subsequent undermining through an etching process in which any excess of the coating around the pad has been removed or limited to prevent shorting of the pads or circuitry to adjacent pads or circuitry after exposed wrapped plate and base metal layers have been etched.