

Convection Etching, version 1.0

By R. G. Sparber

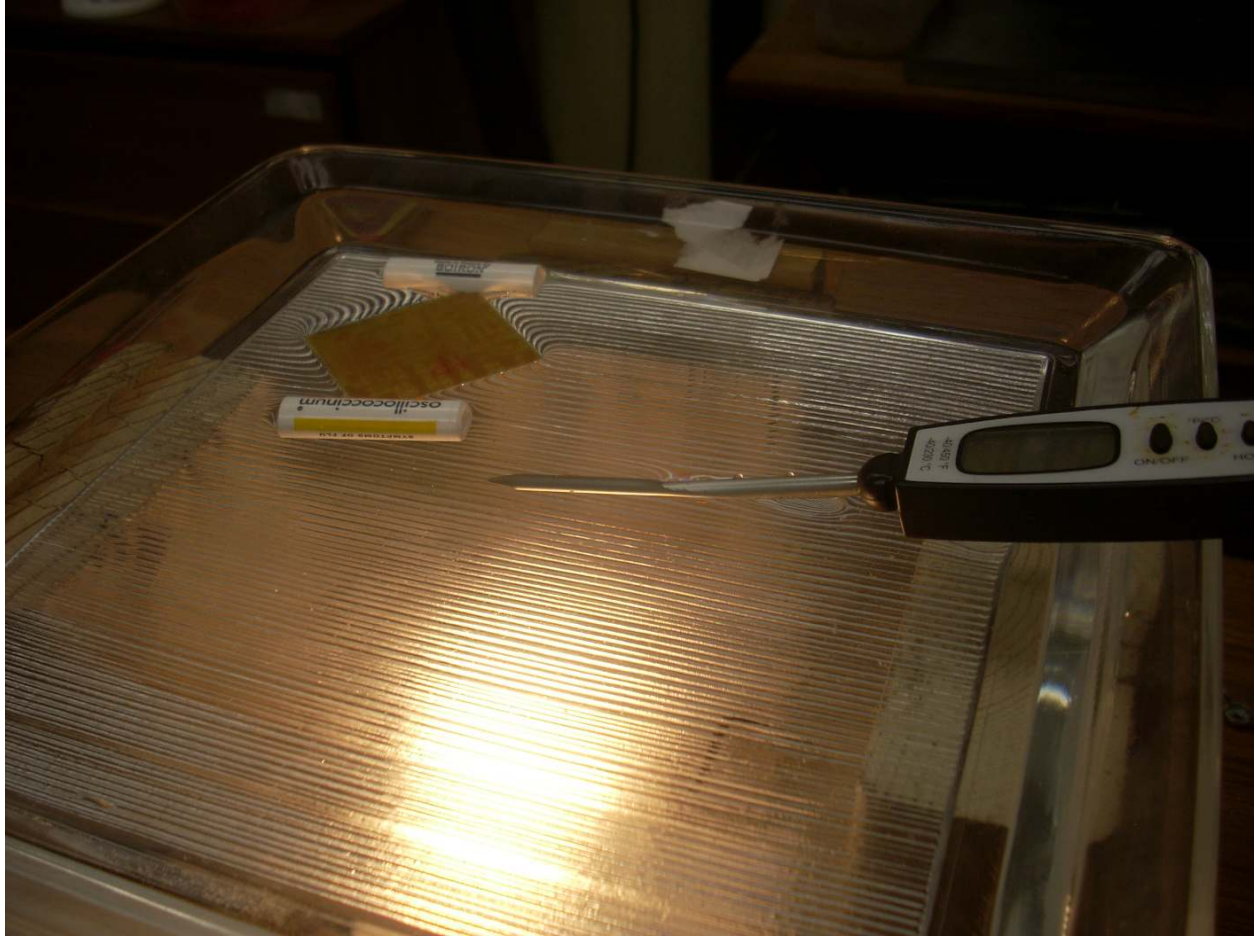
Copyright protects this document.¹

This article is based on work by John Popelish who first told me about convection etching.

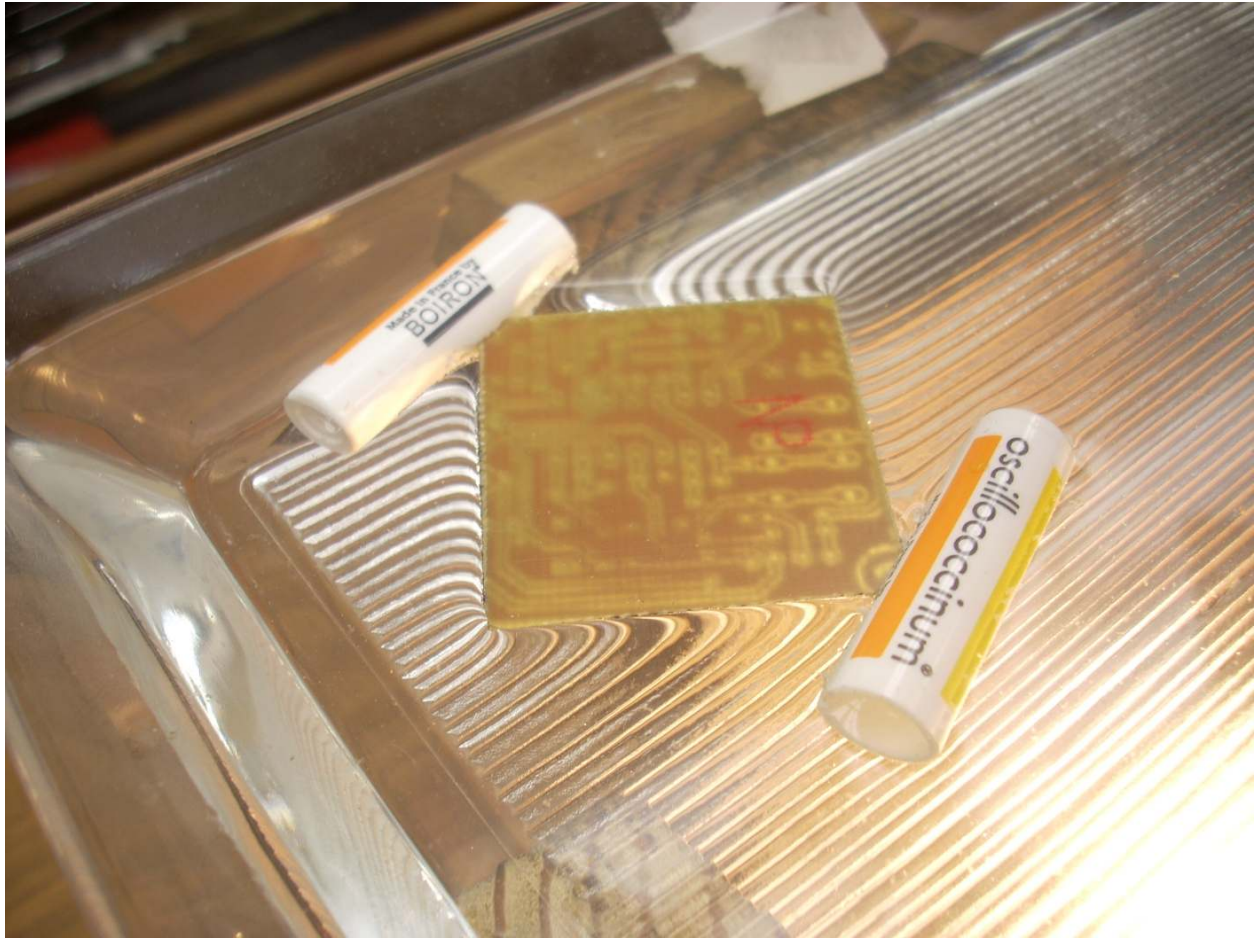


The setup includes a glass tray that sits over a 60W bulb. The bulb warms the tray plus provides light used to see the etching progress.

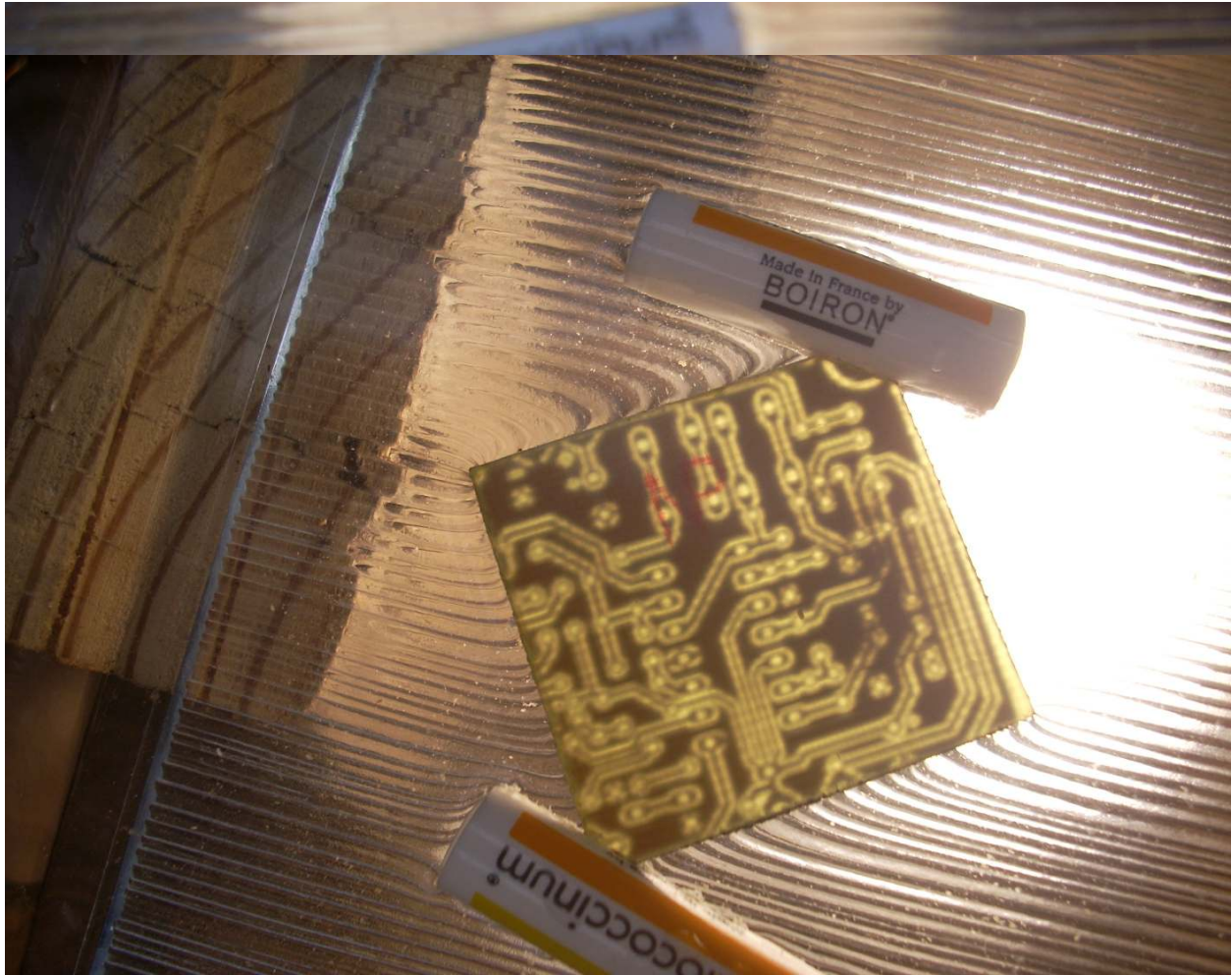
¹ You are free to copy and distribute this document but not change it.



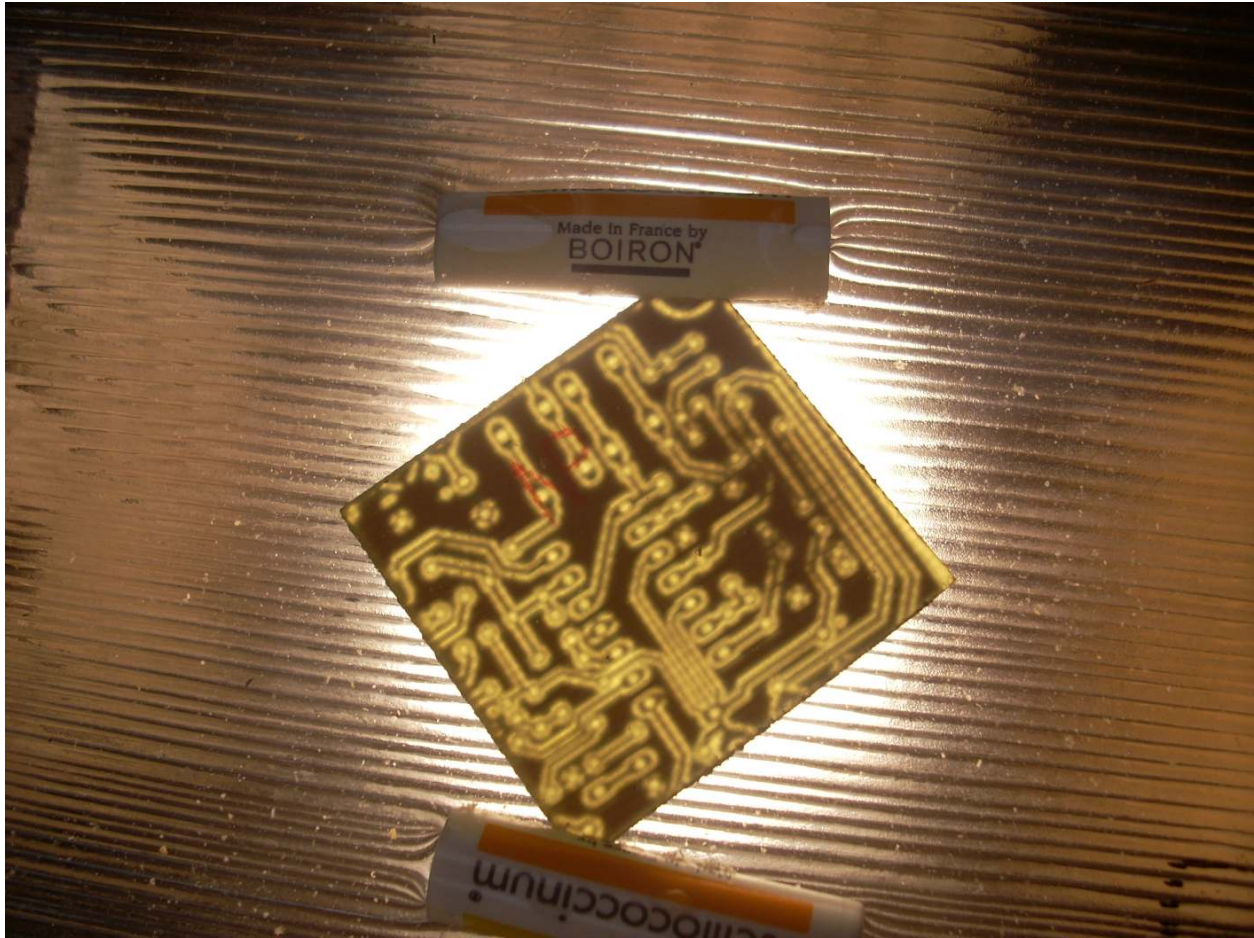
Here you see one of the boards floating on water. The white cylinders are plastic tubes that have been partially slit down the side. They clamp on the corners of the board.



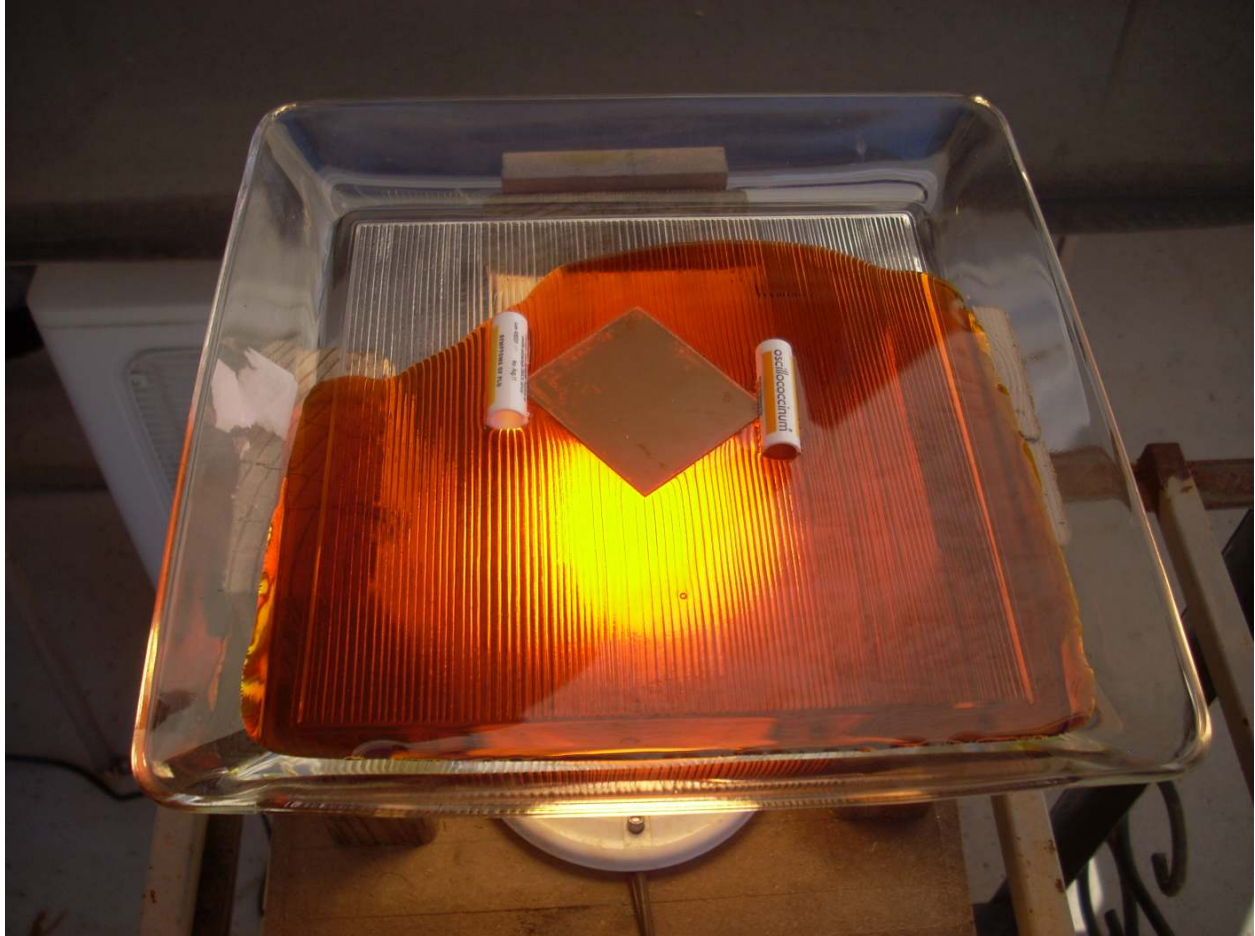
In this close up, you can see a fully etched board supported by the floats. I am still using water here.



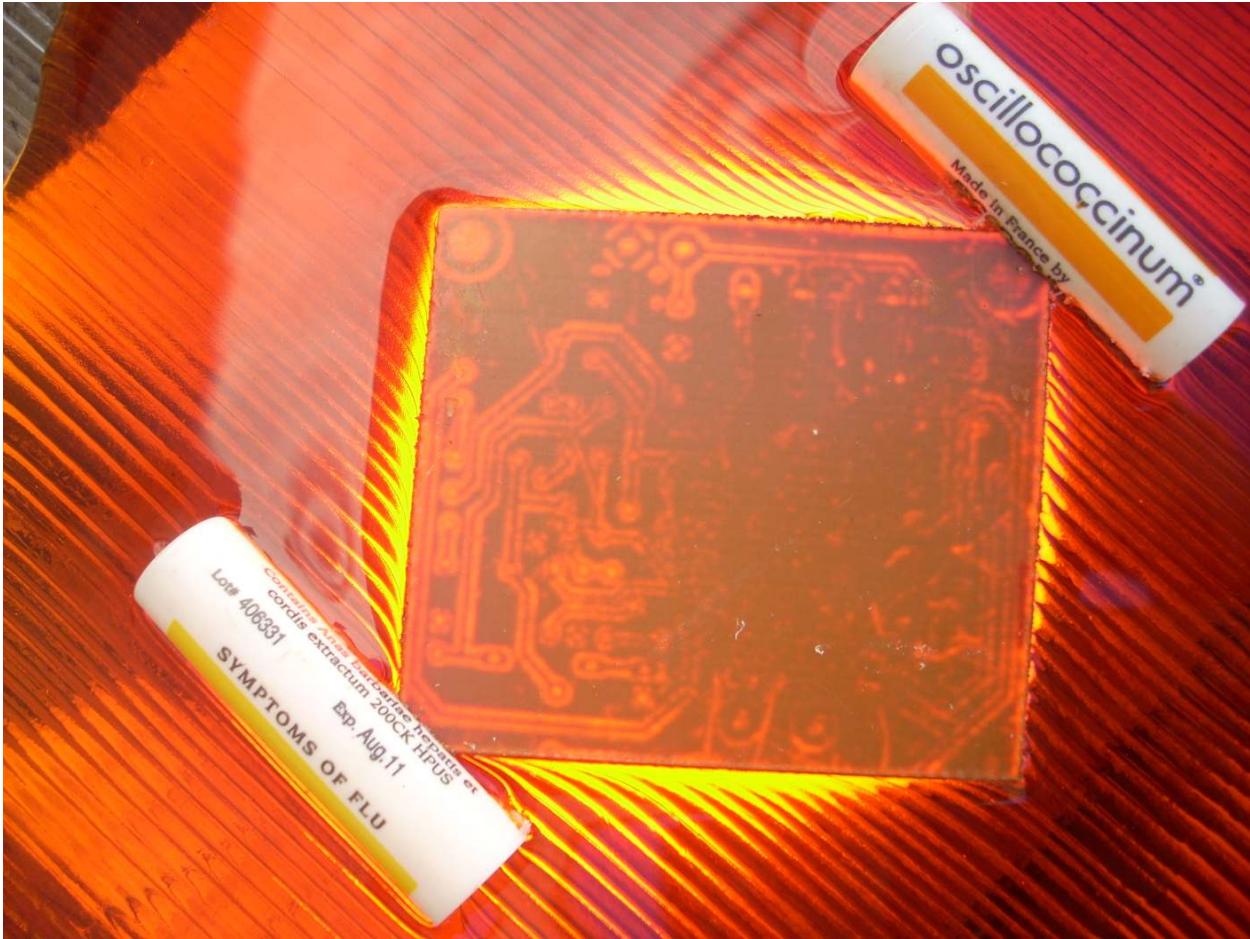
Here you can see a partially etched board. The copper is facing down. The light shines through where there is no copper.



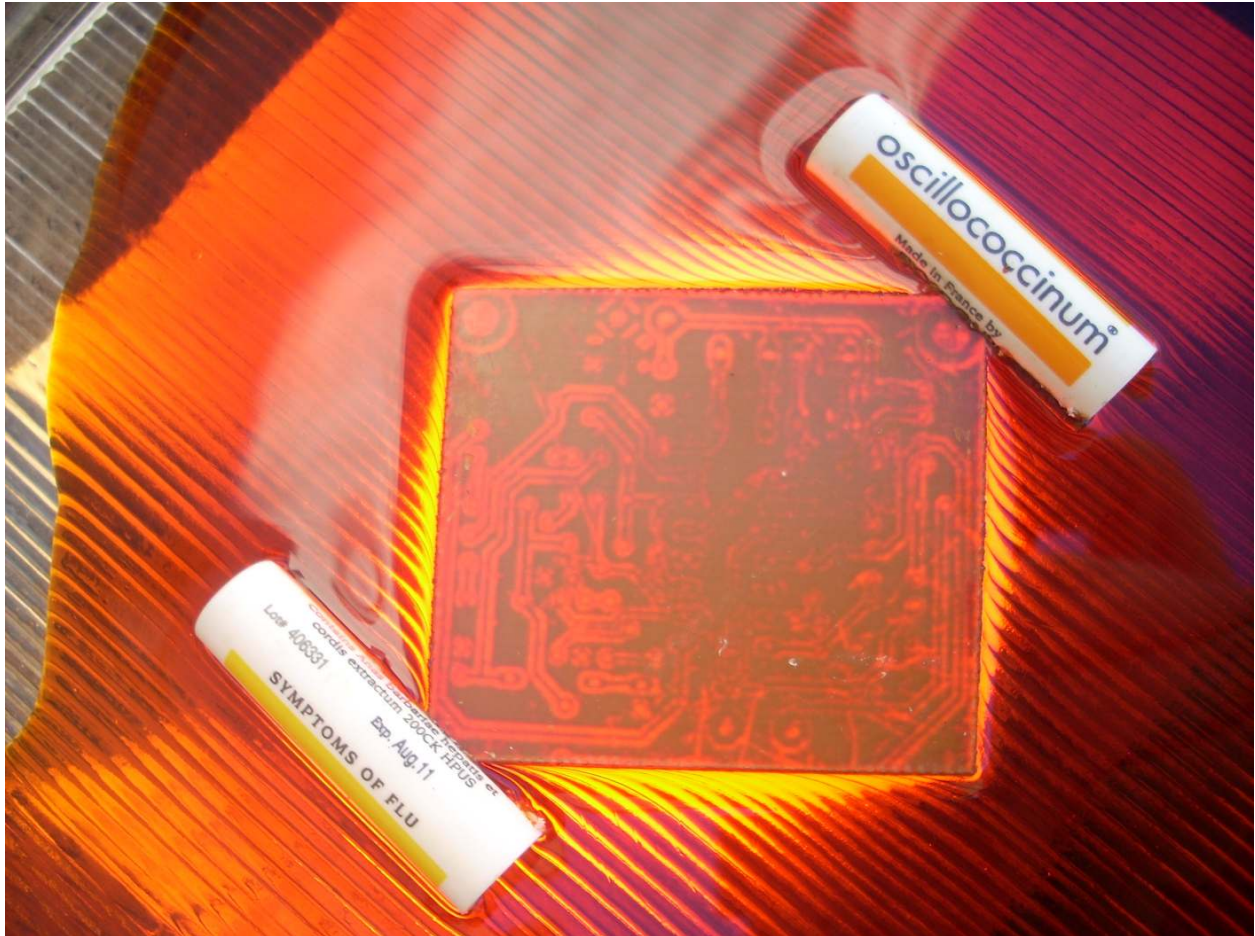
Here is a fully etched board. It is very easy to inspect all traces.



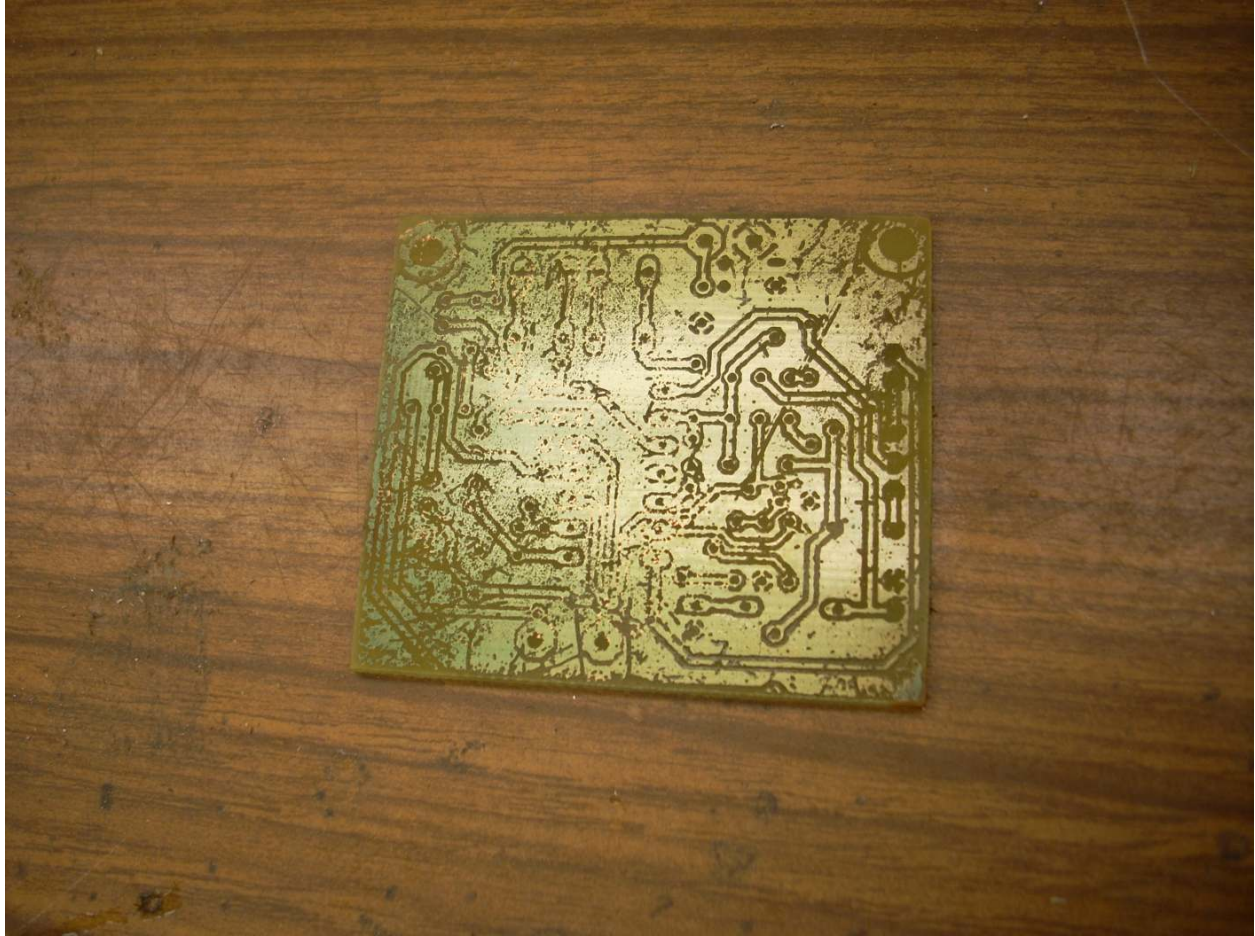
I dumped out the water and added enough Ferric Chloride to just contact the bottom of the board.



Even with the acid, it is easy to see the traces being etched.



This was about 10 minutes later. The rate of etching is slowing.



After about 1 hour I turned off the light and let the board sit in the acid. Here you see the result 3 hours later.

Conclusion

I think I didn't use enough acid. The test board was developed a few days ago so the resist may have been weak. My biggest concern is the long time needed for etching. Next time I will use more acid and see if that helps.

Acknowledgements

Thanks to John Popelish for explaining this technique.

I welcome your comments and questions.

Rick Sparber

Rgsparber@aol.com

Rick.Sparber.org

