

Re: PCB's in liquid nitrogen

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2009-06/msg00326.html>

- *From:* ggherold@xxxxxxxxxx
 - *Date:* Sat, 30 May 2009 21:16:39 -0700 (PDT)
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On May 30, 4:05 am, Okkim Atnarivik <Okkim.Atnari...@xxxxxxxxxxxxxxxx> wrote:

TheQuickBrownFox <thequickbrown...@xxxxxxxxxxxxxxxxxxxxxx> wrote:

: That's why the right way is with an environmental chamber.

I mostly do LHe work and there I just leave the circuit to the top of the dewar neck and let it warm up before opening the neck flange. The circuit gets flushed by evaporated, warmed-up dry helium.

With LN (there is typically no flanged neck in LN dewars) you can just quickly slip the circuit into a plastic bag and let it warm up there. Some people like to evacuate the bag or fill it with dry nitrogen, but IMO it is enough to just squeeze out most of the air. The circuit catches a small amount of moisture anyway when moved from dewar to the bag, but most of the frost (when kept in open air) comes from the unrestricted airflow that goes by the circuit and deposits its moisture on the cold surface.

Regards,
Mikko

Thanks Mikko, I'm definitely concerned about moisture, mostly leaking into the probe when it's inside the nitrogen dewar. The probe will have at least one hole in the bottom. (I don't want to make a nitrogen bomb!) And will spend part of the time in the vapor above the liquid. The current idea is to try to make a soft seal around the top of the nitrogen dewar and control the nitrogen boil off such that no water can leak in. The fall back idea is to use a Plexiglas tube, sealed at the top to the probe and open at the bottom, which extends down into the liquid. (again sealing the probes environment) Either way you'll be able to lift the probe up apply heat and let it warm up dry. (and maybe 1/2 of the people will follow our instructions.) I like the plastic bag idea! In the past I've always used probes that were vacuum tight with helium exchange gas.

George Herold

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