

What to Ask Before Buying a PVD System for a Shared Lab

When you're setting up a new lab, most of the conversation is about budget, specifications and materials. That's understandable those are the decisions in front of you right now, and they come with a deadline attached. There's one question that gets asked far less often, and it matters just as much "what happens to this system after you've moved on?"

The PVD system you're buying today will probably still be in that lab long after the PhD student who chose it has finished their thesis. Postdocs move to other institutions. The next grant funds a different project entirely. Research directions evolve, sometimes completely, and the system stays exactly where it is waiting for whoever walks in next. So, before you buy, it's worth asking, "will this system still be easy to use once the person who set it up is gone?"

Why reproducibility depends on more than the hardware

It's easy to assume reproducibility comes down to the quality of the vacuum system or the deposition source. Good hardware matters, of course. But ask anyone who has managed a shared research lab what goes wrong when people move on, and it's rarely the equipment itself. It's the knowledge that lived in one person's head the venting sequence they always used, the parameter they always double-checked, the small adjustment they never wrote down quietly disappearing the day they leave.

If you're setting up a lab that more than one person will ever touch, that's the real risk worth planning for.

What to look for in PVD control software for a multi-user lab

This is the thinking behind [Spectrum](#), the control software supplied as standard with every Nikalyte PVD system. It's built around a different question than most process control software asks not, "what can this display," but "what happens when the person who understood it is gone."

A few specific things are worth checking for in any system you're considering whether it's ours or someone else's:

1. **Does it log every process parameter automatically, without relying on someone to remember?**

In [Spectrum](#), every parameter pressures, powers, deposition rates, whatever the recipe involves is logged by default, with polling as frequent as every 0.5 seconds. Data is saved in a plain, TAB-delimited file that opens in standard spreadsheet software. When a reviewer or funder asks how a result was reached, the answer already exists nobody must reconstruct it from memory.

2. **Can a new researcher run an existing process without being retrained from scratch?**

Recipes in [Spectrum](#) are built once, using a drag-and-drop interface, then run through simple Run, Pause and Stop controls, with repeat loops available for multi-cycle processes. Before a recipe runs, the software checks that every step is properly defined. A new student inherits the process itself, not a rough description of what their predecessor used to do.

3. **Are the highest-risk routine steps automated, or dependent on who's doing them?**
Pump-down and venting are two of the most common places where inconsistency causes real damage a rushed vent, a skipped step, and it's an expensive component that pays for it. [Spectrum](#) runs both as fixed, automated sequences, so the outcome doesn't depend on who's at the controls that day.
4. **Is your data locked into one piece of software, or portable?**
[Spectrum](#) logs to an open TAB-delimited format, and instrument configuration is modular, so new components can be added as your lab's needs change. Layouts save as ready-to-load desktop profiles, so a system set up for one process isn't rebuilt from scratch by the next person who uses it.

None of this makes a single deposition run faster. It means the run a new student does in year four looks exactly like the one their predecessor did in year one.

Why this matters even more for a new or growing lab

If you're a new PI in your first few years, or a small team without decades of institutional history behind you, this isn't a minor convenience it's close to the whole job. Every result from a young lab faces more scrutiny, not less. Reviewers and funders are, reasonably, checking whether it can be repeated by someone other than the person who did it first. A system that depends entirely on one experienced operator can't answer that question with confidence. One built so the process transfers cleanly between people, can.

Proof, Not Just a Design Intention

This isn't hypothetical. Nikalyte systems and [Spectrum](#) are already in use at research groups including [Diamond Light Source](#), the [University of Oxford](#), the [University of York](#), the [University of Leoben](#), and [UHI Inverness](#) different fields, different applications, all needing the same thing: a system and software that people can pick up and use with confidence, years after it was first installed, regardless of who's currently running it.

FAQ

1. **What should I look for in control software when buying a PVD system for a shared lab?**
Look for automatic parameter logging, recipe-based process control that doesn't depend on operator memory, automated pump-down and venting sequences, and an open data format that isn't locked to one piece of software.
2. **Why does reproducibility matter more in multi-user or academic PVD labs?**
Most research PVD systems are used by several operators over their lifetime successive PhD students, postdocs, and visiting researchers. Results need to hold up to peer review and funding scrutiny, which depends on whether a process can be repeated by someone other than the person who developed it.
3. **What is [Spectrum](#) control software?**
[Spectrum](#) is the process control and data logging software supplied with every Nikalyte

PVD system. It handles instrument configuration, recipe-based process automation, real-time charting, and automatic parameter logging.

4. **Does Spectrum log data automatically?**

Yes. All process and system parameters are logged by default, with data saved in a TAB-delimited format compatible with standard spreadsheet software.

5. **Can a new researcher run an existing process without retraining?**

Yes. Recipes are saved as executable sequences with built-in validation checks, so a defined process can be handed to a new operator directly rather than re-taught from scratch.

6. **Does Spectrum automate pump-down and venting?**

Yes. Both run as fixed, automated sequences rather than manual step-by-step operations, reducing the risk of operator error and component damage during this routine but high-risk steps.

For more on how Spectrum could work with your setup, contact us at sales@nikalyte.com