

SECTION



Biomedical laboratory scientists and automation super users Marie Krebs Eriksen and Jasmin Lander Holtermann have seen significant benefits of implementing automated sectioning of FFPE blocks at Copenhagen University Hospital – Rigshospitalet, ranging from saving costly staff hours to improvements of quality, throughput and workflow.

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Automated trimming offers optimised lab workflows, quality... and peace of mind

Copenhagen University Hospital – Rigshospitalet, is no stranger to automation in a clinical pathology lab setting. In 2017, the hospital was among the very first in the world to welcome an automated sectioning device for FFPE (formalin-fixed, paraffin-embedded) blocks: the AS-410M. Millions of blocks have been automatically sectioned since then, and the lab now has a total of five installations. In 2026, the hospital took the next automation step by adding two AT-192M units for automated block trimming, creating a parallel workflow that enables trimming and sectioning to run simultaneously. Half a year later, they have already proven their worth with benefits including optimised staff resources, reduced throughput time, and simply increased flexibility and freedom.

“Super daunting and super exciting.” That’s how biomedical laboratory scientists (BLS) and automation super users Marie Krebs Eriksen and Jasmin Lander Holtermann describe their feelings before implementing automated trimming. Although automated sectioning had been well in place in their lab for almost a decade, automated trimming was an entirely new venture. Any apprehension was quickly laid to rest, however,

when Marie and her colleagues inspected the outcome: blocks trimmed on the automated trimming unit were either of the same quality or even significantly better than manually trimmed blocks. “I was quickly convinced that it’s simply better to do it this way. I see better results in the quality of the sections, especially on harder tissue, that can have reduced section quality when trimmed too roughly,” she explains.



The Department of Pathology at Copenhagen University Hospital – Rigshospitalet sections 65% of its FFPE blocks on AS-410M. Before sectioning, 50% of those blocks are automatically trimmed on the AT-192M, freeing up two employees for higher-value tasks elsewhere in the department.

Consistency helped reduce rejections

Marie explains that trimming of blocks used to be handled manually, sometimes resulting in blocks trimmed unevenly or too deep. Inconsistencies that often were only discovered later when the blocks reached the automated sectioning device. She estimates that 5-7 blocks were rejected per day, maybe not a staggering number but still a cause for frustration. Now, the number of blocks rejected for those reasons is basically zero. "Automated trimming helps us standardise the blocks before they are transferred to automated sectioning," Jasmin adds, which helps ensure that the quality requirements needed for efficient sectioning and downstream analysis are met.

Two employees freed up

Staff resource utilization has also improved, Jasmin explains: "Previously, around three people would handle the manual trimming. Now, one biomedical scientist oversees both AT-192M devices while also trimming a bit by hand, typically when a deeper trimming is required or a clip needs to be removed. We have basically freed up two employees, whose salary pays for the two new automated trimming machines. She points out that manual trimming is "hard labour, which wears people down and honestly, it's not exactly the most interesting part of our job. Rather it's one of those tasks you just want to get over with, instead of something where you feel useful and can use your head and your education."

Cautious approach

One thing is manual handling; another is trusting a machine to do the job. Marie soon came to appreciate the built-in safeguards, including cut force limits, height restrictions and other protective features. The mantra, stemming from a typical fear among BLS's, quickly became: "rather take too little than too much when trimming. There's nothing worse than having to tell a patient that we can't get an answer because the tissue is lost," she explains. "At the beginning I was very much – 'ok, we need to be ready to push stop at any time' – but it didn't take more than a few days before we felt comfortable leaving it alone."

Monitoring provides confidence

Rather than reducing control, the automated trimming also provided new ways of keeping an eye on what is happening. "The monitor and viewing windows are great! We can watch the entire trimming process from different sides. It gives you a greater sense of confidence because you can monitor everything live as it happens," Jasmin explains. Further, having access to the entire trimming process retrospectively makes it easier to optimise decisions on future runs.

Night runs help scale up production

With two AT-192M trimmers, it is also possible to feed eight trays per machine in the afternoon, each with 192 blocks, and thus have 384 blocks ready in the morning for automated sectioning. Before, those blocks wouldn't have been touched between afternoon and the following morning. "So, the throughput has increased considerably," Jasmin explains. "It's great knowing that we can scale up if needed. We have a much better workflow now, between getting blocks out early in the morning, or we can run all blocks while we're here without night runs. It provides peace of mind, especially on days when blocks are just piling up. You're doing the best you can but there is a limit as to how fast you and the manual microtome can move, right? Automated sectioning just goes and goes and moves so fast, which enables us to simply get caught up."

Ultimately, they both agree, improving workflow and creating a better working environment is one thing, but it's first and foremost about helping patients and providing adequate answers as fast and precisely as possible.

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– was founded in 1757. It is the largest public and teaching hospital in Copenhagen, the most highly specialised hospital in Denmark..

The Department of Pathology handles approximately 1,500 FFPE blocks daily, although the volume varies. As of June 2026, 65% are sectioned on AS-410M and before that, 50% of AS-410M blocks are automatically trimmed on the AT-192M.

3 TIPS

WHEN IMPLEMENTING AUTOMATED TRIMMING

- 1) Spend time simply observing and getting to know the device.
- 2) Rather take too little than too much.
Trim less and run another round, if needed.
- 3) Use the look-back function to refine program selection and learn from that.