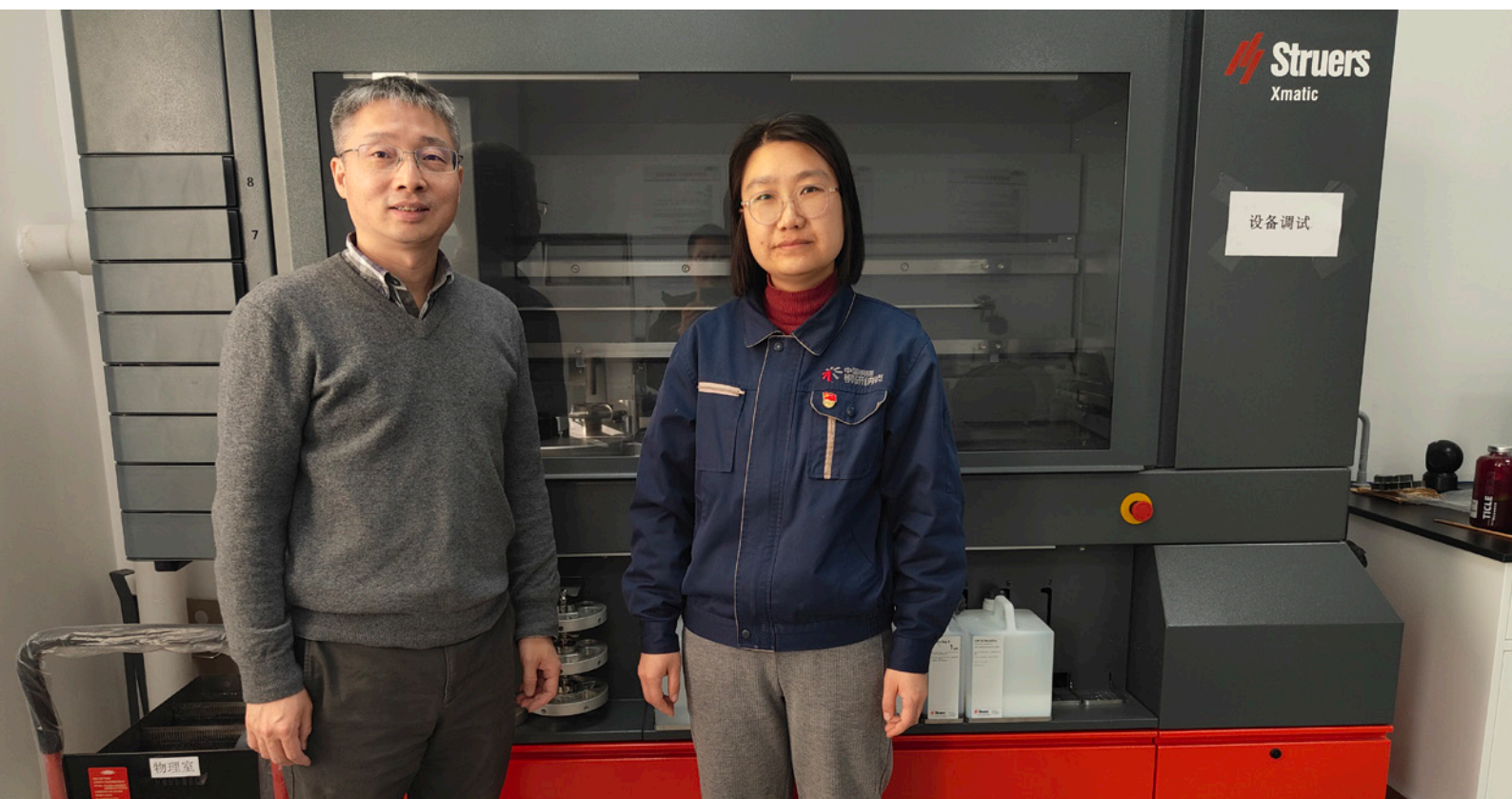


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AUTOMATED GRINDING AND POLISHING REDUCES PREPARATION TIME WITH 28,3%

NCS (Shenyang) Testing Technology Co., Ltd. is one of China's leading testing and research institutions that has formulated multiple industry standards. Previously, many specimens in the laboratory could only be prepared manually, leading to inconsistent results and inefficiencies. Now, with the help of the Xmatic NCS has reduced specimen preparation time by 28,3% while ensuring result quality.

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- ✓ Significantly improves specimen preparation efficiency
 - ✓ Increased polishing quality
 - ✓ Freeing up operator time substantially
 - ✓ Ensures result consistency
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IN BRIEF

CHALLENGE

Aircraft engine specimens require precise preparation, yet manual grinding and polishing often lead to inconsistencies due to the operator. On top, the high volume of specimens makes manual preparation not only time-consuming and labor-intensive but also a major bottleneck in improving laboratory efficiency.

SOLUTION

Xmatic is a fully automated end-to-end grinding and polishing solution designed for laboratories that require optimal reproducibility, processing capacity, process standardization, and ease of use.

RESULTS

The operator time required for preparing eight conveyers of specimens has been reduced from 240 minutes to 172 minutes. Furthermore, freeing up operator time for other tasks.



NCS Testing Technology Co., Ltd.

NCS Testing Technology Co., Ltd., established in 2001, is a high-tech enterprise specializing in third-party testing services, analytical instruments, and nondestructive testing equipment.

Headquartered in Beijing, China, it operates as a subsidiary of China Iron & Steel Research Institute Group Co., Ltd., serving industries such as metallurgy, aerospace, and nuclear power.



Xmatic

The Struers Xmatic is a fully automated grinding and polishing solution designed to enhance reproducibility, throughput, and process standardization in laboratory settings. Featuring intuitive user interfaces and automatic consumable detection, it minimizes human error and optimizes laboratory space, making it ideal for high-precision material preparation tasks.

High-Quality Specimen Preparation Safeguards the Aerospace Industry

NCS (Shenyang) Testing Technology Co., Ltd. utilizes advanced testing technologies and equipment to provide high-precision solutions for performance evaluation, composition analysis, nondestructive testing, and failure analysis of aerospace materials. By ensuring the safety and reliability of these materials, the company makes significant contributions to the development of China's aerospace industry.

The aerospace industry demands near “zero-defect” levels for specimen preparation, as even the slightest deviation can have a significant impact on material performance evaluation and flight safety.

Xmatic Improves the Quality and Efficiency of Specimen Preparation, Ensuring “Zero-Defect” Requirements

Previously, NCS primarily relied on manual grinding and polishing by laboratory operators. Preparing one metallographic specimen conveyor could take up to



30 minutes, and the entire process required constant supervision by engineers. Frequent replacement of papers, polishing cloths, and repeated loading, unloading, and cleaning of specimen/holders were not only time-consuming and labor-intensive but also made it difficult to maintain consistent preparation results. This necessitated a fully automated grinding and polishing solution to improve accuracy, efficiency and optimize laboratory process..

As a fully automated end-to-end grinding and polishing solution, Xmatic's standardized preparation process and high reproducibility enable faster and more efficient specimen preparation while ensuring that the results are not influenced by the operator.

“The quality is even better than manual grinding, especially in terms of consistency, which is difficult to achieve manually.”

– Director Nan Wu, deputy director of the Physics Laboratory at NCS.



Reducing Specimen Preparation Time from 240 to 172 minutes

Before using Xmatic, NCS had been cautious about fully automated specimen preparation.

Director Nan Wu, deputy director of the Physics Laboratory at NCS, mentioned that “We were mainly concerned about the quality of the grinding and polishing. Fully automated operation without real-time monitoring might lead to uncontrollable specimen quality issue.”

The experience with Xmatic has been impressive. Operators only need a few minutes to place the specimen holder in the conveyer (which can hold up to eight specimen holders simultaneously).

The subsequent process requires no human intervention, as the system automatically completes preparation surface changing, cleaning, drying, and all grinding and polishing processes. The grinding and polishing time, plus especially the cleaning process, has also been reduced to 21.5 minutes per specimen holder. This automated process has also freed up operator time which they can use for other tasks.

“The quality is even better than manual grinding, especially in terms of consistency, which is difficult to achieve manually,” said by Director Nan Wu.



Saving operator time and Improving Laboratory Efficiency

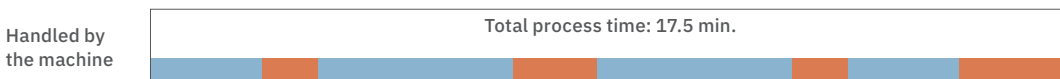
With Xmatic, NCS has achieved the ability for a single operator to handle large volumes of specimen preparation while also managing other laboratory tasks. Additionally, since specimen quality consistency is not affected by the operator's experience, every laboratory employee can achieve the same high-quality results. Furthermore, the strong local application and service team support from Struers has resolved many of the issues they previously faced, significantly improving laboratory management efficiency.

Unlike traditional manual or semi-automatic grinding and polishing machines, Xmatic is designed to save laboratory space. Customers can choose the appropriate machine model based on their laboratory space, helping to create a cleaner and more optimized laboratory environment.

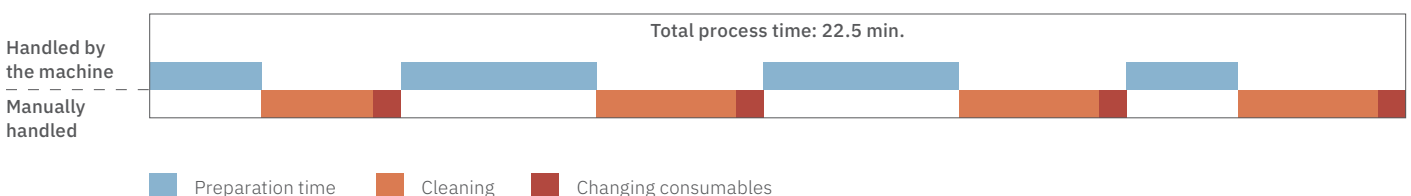
Increase efficiency with faster cleaning programs

Xmatic's cleaning and drying programs are highly efficient. This is due to the angle of the nozzles and the use of high pressure water and different medias, such as soap and alcohol. These short cleaning and drying programs reduce overall process time, resulting in higher throughput.

Xmatic



Semi-automatic solution





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“The specimen preparation results from Xmatic have been a pleasant surprise. Even beginners can achieve the best preparation results, regardless of their experience level. This has brought more convenience to our management.”

– Director Nan Wu, deputy director of the Physics Laboratory at NCS.