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## Design and fabrication of the automation system in TLS BL07A end station

*Thursday, 23 May 2024 16:00 (2 hours)*

The end station for TLS beamline 07A (BL07A) primarily serves industrial applications, catering to various sample inspection requirements within the industry in multiple modes. In the past, manual switching of modes for different experiments was time-consuming, requiring the re-installment a lot components and taking long time to readjust the gas proportion for different samples. To enhance the efficiency of the BL07A experimental station, an automated design has been implemented, utilizing multiple self-made motorized platforms. Another crucial aspect for improved experimental efficiency is the use of a combination of vacuum pumps, flow meters, and electromagnetic valves for gas replacement system, significantly reducing the time needed for this process. The automated system is currently operational, reducing the operation time for experimental equipment switching from several hours to two minutes. The execution time for the gas replacement process has also been drastically reduced from 100 minutes to 5 minutes.

### Footnotes

### Funding Agency

### Paper preparation format

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### Region represented

Asia

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