

# Cleanroom Chemical Safety VR

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Technology Award

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## Improving Cleanroom Safety with VR

To make chemical safety training safer, more engaging, and efficient, the team worked with ST Microelectronics to develop a Cleanroom Chemical Safety VR learning package. This system enables trainees to learn theory and practical skills in a simulated environment.

The package has two modes: Guided Mode provides step-by-step instructions, while Assessment Mode evaluates performance to identify improvements. It supports both self-directed and online learning, minimising safety risks in training.

## Innovators' Inspiration

*"Through this project, we learned to complement and tap on each other's strengths. Dana captured on-site videos at ST and curated the storyboard, while I created the 3D assets, leveraging my background in Games Development. This project showed us that innovation happens when people with different skills work together towards the same vision."*

– Abdul Syafiq Bin Abdullah

## What's So Special?

- Unlike traditional VR, the learning package can be deployed on web platform with internet access, making it more accessible and flexible for training.
- Learners can also use VR devices to enhance immersion, allowing them to better visualise and practise procedures in a realistic setting.
- The 3D assets are modelled after the actual ST cleanroom environment for familiarity and realism.
- Generative AI was used for text-to-speech conversion and 3D asset creation, improving workflow efficiency.
- The learning package is estimated to reduce training duration by up to 90% and is currently used by ST as part of their Chemical Safety training programme.