



Professor Stephan Schuster says the virus crisis proves that scientists are able to move to new fields. PHOTO: NANYANG TECHNOLOGICAL UNIVERSITY

Stephan Schuster

Analysing air and surface samples to find virus traces

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Professor Stephan Schuster is an environmental detective. Like his crime-solving counterparts, the professor at Nanyang Technological University's (NTU) School of Biological Sciences looks for what is unseen by the naked eye.

This has come in useful during the Covid-19 pandemic, as humanity battles an unseen foe.

His work involves taking samples from the air and surfaces, and analysing them to find traces of genetic material of organisms like viruses.

Both environments are ultra-low biomass environments, meaning each sample might have only a few micrograms of (genetic material), said Prof Schuster, who is also deputy centre director for facilities and capacities at NTU's Singapore Centre for Environmental Life Sciences Engineering.

"Nevertheless, the (genetic material) recovered from these sam-

ples is very complex, as they originate from many different microbial organisms," he said.

Prof Schuster and his colleagues got cracking. They found in a study pending publication that air pollution could result in negative outcomes for respiratory illnesses, including Covid-19.

The Straits Times had earlier reported that micro-organisms in the air measure between 0.5 and 10 microns and are likely to reach deep inside the lung tissue.

Those with pulmonary diseases may be unable to expel them out.

Prof Schuster said they could pivot during the outbreak because of the completion of a five-year research programme on the air microbiome, his skilled co-workers and the availability of tools like air samplers.

"This crisis has proven that scientists all over the world are able and willing to swiftly move to new fields and to apply their knowledge," he said.

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