SINGAPORE INSTITUTE OF TECHNOLOGY

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Tools to make things better

Singapore Institute of Technology links students with corporations and industries to prepare them for the workplace

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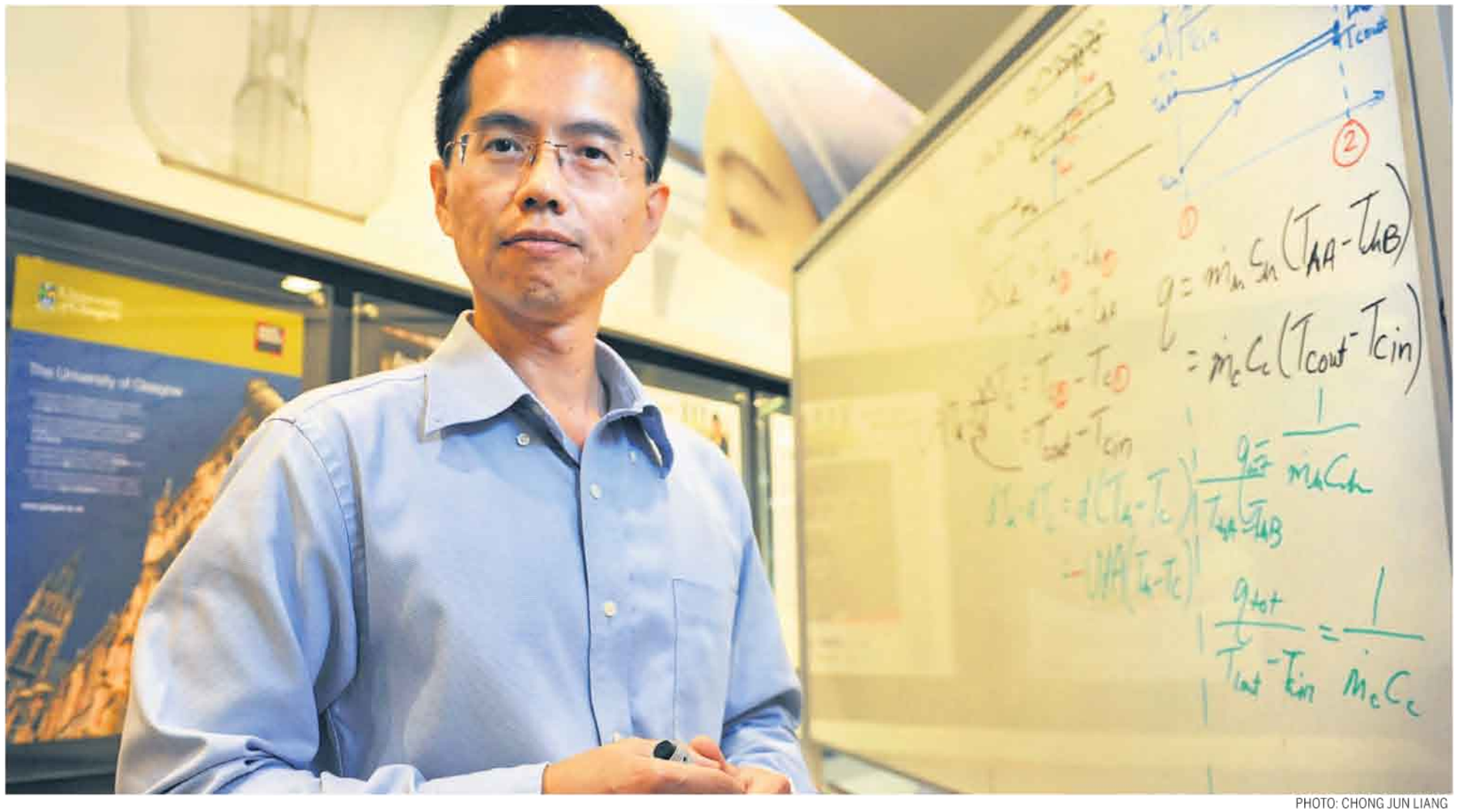

PHOTO: CHONG JUN LIANG

AT SINGAPORE Institute of Technology, a partner industry supervisor discusses with a student the production cost of a design, strategising "how to make it competitive to market prices".

Dr Alfred Tan, Assistant Professor in Engineering, oversees final-year projects in two degree programmes offered by the University of Glasgow in Mechanical Design Engineering and Mechatronics Engineering. He says: "In contrast, my approach in advising students would be to place emphasis on engineering techniques by first ensuring the right order of academic rigour to their coursework learning outcomes, after which market prices could be factored into the discussion at a later point."

In today's world, it is no longer enough to just impart theoretical and practical engineering to engineering students out there. Innovation, creativity and industrial know-how may soon supersede that.

Using a project as a starting point, the final-year students work closely with engineers from partner corporations and industries to learn things that are outside the textbook.

This "synergistic cooperative education" involving inputs from practising engineers is vital to prepare students for the real workplace.

Says Dr Tan: "Traditionally, engineers come in when there is a need to undertake a technical project or when things have failed.

"These days, we want students to go the extra mile to add value to the world they live in, to re-invent the world using the tools they learned."

From the interaction with engineers on the ground, students learn to see the big picture – interacting with a wide spectrum of people from various disciplines help them to gain an overview understanding towards the operation of an engineering project.

Students also learn that engineers can no longer just work within their own discipline.

"Collaborating partners put them in good stead when they go on to work on projects, ideas, or assignments," says Dr Tan.

"In the industry when traditional engineering tools and methods fail, it is the creative mind that sets them apart from their peers."

Debunking myths

Having the chance to work with real engineers helps debunks some misconceptions that the students may have about engineers.

For example, are engineers "square" or nerdy? Not anymore, says Dr Tan.

Wearing a hard hat or being socially inept – traits of being good in an engineering career – are no longer seen as "uncool". These days, many companies want to be associated with a technical nerd and a good nerd commands a high price.

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>
> – Dr Alfred Tan (above), Assistant Professor in Engineering, Singapore Institute of Technolgy

Another case in point is the definition of design excellence. The users' experience is no longer the only attribute that defines how well a product is designed. Today, design excellence is also about capturing one's imagination, and how technology comes into play.

Going multi-disciplinary

Dr Tan has always enjoyed working with engineers in the course of his work, many of whom embrace entrepreneurship.

"Moving forward, I would like my students to go beyond their comfortable engineering domain and explore other faculties of expertise, a sort of multi-disciplinary approach with hobby-driven interests to come up with imaginative solutions to engineering problems," he says.

"For this to happen, a breadth of experiences, a dose of dogged determination and getting up to speed with the experts in their field of interest is needed."

Dr Tan advises aspiring engineers: "Be so good in your trade and expertise that many people would want you to help provide a solution. Engineers can be fun. Engineering can be fun too. And so are your engineering professors."