

October - December 2012 Issue

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A quarterly newsletter from the German Institute of Science and Technology-TUM Asia (TUM Asia)

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The third quarter of every year is always the most memorable, as we usher in our new students and bid farewell to our graduating cohort. On the 20th of July, we celebrated the successful graduation of 83 Master of Science students, our largest graduating cohort yet. These students have set the TUM Asia flag soaring high once more as they crossed the finish line with flying colours. In speaking with them on their plans for the future, a diverse range of career options have been mentioned. Some have secured jobs with renowned multinational companies, some have chosen to follow their passion for research, and others have gone on to continue their academic journey with a PhD. I am immensely proud of each and every one of them. Tanut and Angela - two of our most outstanding students from the graduating class of 2012 - shared excellent speeches at the graduation ceremony, which you can read about on page 11.



Following the Masters 'Graduation, we quickly transitioned into the mood for the Freshmen Orientation 2012. Having been established in Singapore for 10 years, we saw our influence grow in the region as we ushered in a total of 230 students across our two Bachelor and five Master programmes, this being a 50% increase from 2011. To assimilate the new students into our thriving student community, an island-wide student race named "Anywhere You Go" was planned by our Student Management Committee (SMC). It was a very successful event, with over 100 attendees. Our students thoroughly enjoyed the cross-cultural event, and our Facebook page has been buzzing with activity ever since. The event report was entirely covered by our students, the article and pictures from the event can be viewed on pages 5 and 6.

Another memorable cause of celebration this quarter is in the successful retaining of our position as Germany's top university. The 2012 Shanghai Ranking once again ranked TUM as the number 1 university in Germany, and the 53rd worldwide. The Shanghai Ranking is highly regarded as one of the most prestigious and stringent ranking of world universities, and to achieve such a ranking only goes to show the excellent systems we have in place at TUM. The full article on our ranking can be found on page 13.

It has truly been an eventful quarter, with the focus on our most valuable asset - our students. We look forward to a successful year-end quarter, and wish the same for you.

Have a successful quarter ahead.

Dr. Markus Wächter
Managing Director, TUM Asia

June and July 2012 saw TUM Asia usher in our 2012 intake of students for both the Bachelor and Master programmes. It was exciting to see the fresh faces assimilate into the TUM Asia student community. TUM Asia Digest rounds up the series of orientation events that happened.

Bachelor of Science Orientation 2012

To welcome our new batch of Bachelor students, Goh Zhe Liang of the BSc CE 2011 cohort took up the challenge of orchestrating the event, together with two of his EEIT classmates, Noorhashilah Mohd Noh and Cai Jia Yun. Starting their preparations as early as March 2012, they originally planned to have a 3 day 2 night camp that would entail having a night walk and BBQ for the night activities, and mini games and some wet games to get the juniors up and going. However, due to the tight school schedule of the students, they had to shorten their activities to a single day event.

This change of plans did not dampen the committee's spirits. Moving forward with their newly reshuffled plans, they gathered their classmates to brainstorm for games and the day's program. Together with 24 other student helpers from both the CE and EEIT cohorts, the grand orientation program was born.



29 June 2012 came quickly, and at 10am, the students poured into T1A at Singapore Polytechnic. After a short speech by Dr. Markus Wächter, Managing Director of TUM Asia and Mr Kok Meng Woon, Programme Director of SIT, the students heard insights from their seniors and proceeded to matriculate as TUM Asia students.

Following a short lunch, the seniors led their new juniors to play games and get to know one another better. "All in all, the games lasted for 2 hours and it was smooth sailing with both the students and helpers clearly having fun and enjoying the games, with smiles and laughter filling the air", Zhe Liang commented afterwards. The help of the student helpers were commendable as they were due to have an exam 3 days after the orientation event, yet their willingness to spend time with their new juniors only goes to show their commitment to the student community.



Master of Science Orientation 2012

On the 27th of July 2012, the Pixel campus at TUM Asia welcomed a new batch of Master students for the 10th year running. The 146 students, our largest intake thus far, span across 5 Master programmes - Industrial Chemistry; Integrated Circuit Design; Microelectronics; Aerospace Engineering and Transport & Logistics. Some of them hailed from countries as far as Russia and Germany, with others from all around the region gathering together to pursue higher education studies at the Asian campus of Germany's top university.



As the foreign students had just arrived a few days prior to orientation, they had lots of academic and administrative information to catch up on. The morning was spent listening to their professors share about the programme structure and course expectations, fully equipping these bright minds for the next step of their academic journey. Their seniors also took the stage and shared some insights on student life, sharing tips on how to fully enjoy their 18 or 24 months of study with play.

The orientation marked the initiation of the students' exciting journey as TUM Asia students, and we look forward to the great times ahead!

“Excuse me Sir/Madam, are you heading to somewhere centralized in Singapore?” Asked a TUM Asia student to a stranger on the streets of Singapore.



On the 28th of July, TUM Asia students from both the Bachelor and Master AY12/13 intakes gathered at Singapore Polytechnic for the school's first ever island wide race. This event, planned and executed by the Student Management Committee from the BSc EEIT 2010 cohort, was a crowd-pleaser as our new students familiarized themselves with Singapore. MSc Integrated Circuit Design student A M Radhika noted, "It was a rather welcome change for us as the accommodation arrangements, registration for courses, procedures and initial adjustments ate up most of our time."



The event commenced at 10am, the first task of every group being to uncover the final destination from torn up magazines riddled with clues in it. With the final destination known, the individual groups raced to the end point by asking passerbys for their destination. For each passerby, students were only allowed to ask a maximum of three questions before they popped the golden question "Where are you going!" Following the reply of the passerby, the team had to go directly to that location, whether it was their desired location or not.



Students were bursting in all directions from Singapore Polytechnic. There were wrong directions, right directions, weird expressions and a thousand questions. Teams were erroneously getting down at wrong stations, only to find out that they should have asked smarter questions. The frenzy was noted by Radhika, "There was a point when we ended up asking crowds on moving escalators for directions only to watch their taken-aback, questioning faces move down further away on the ramp."

Upon reaching the final destination, which was Orchard Road, several games were played. Group jump shots; picturing out the word TUM ASIA from items borrowed from strangers; letting strangers write well wishes on their arms and many others. Lee Poh Sein, a second year BSc Chemical Engineering student remarked, "The foreign students came up with so many fun poses for phototaking! And the most memorable moment came when a passerby actually gave us his sock without hesitation to help us complete our task."

Through the running and the rushing, friendships bloomed among the students, who hailed from all over the world to study here in Singapore. Joey Chan, facilitator of one of the groups remarked, “This event has given me the opportunity to take the role of a leader, to guide and facilitate a team of foreign students of different culture. I enjoyed the company of these students. I got to learn about their culture, their education system, and their different mother tongue languages that they have.” The cross cultural exchange of friendship was significant, and the bonds only strengthened as the groups enjoyed a Singaporean lunch together.

After lunch, the various groups continued to sightsee along Orchard Road, with the local students naturally evolving into the role of being the tourguide to their foreign friends. They then returned to Singapore Polytechnic where the winners were announced. Though there was only 1 winning team for the race, all the participants walked away feeling victorious, having made new friendships and having great fun in the course of the event. Joey commented, “The main factor was the enthusiasm of the students. They were all in high spirits to win the game despite not knowing each other well. From the kind of attitude that they portrayed, it shows how much of a go getters these students are. They are just there all out to win. And yes, they did well and won the race.”

With the successful conclusion of the event, the SMC would like to thank all the student helpers who dedicated their time to assist as facilitators for the event, particularly Quek En, Joey, Jieyi, Wei Cai, Boon Kai, Zhi Hui and Abhisek.

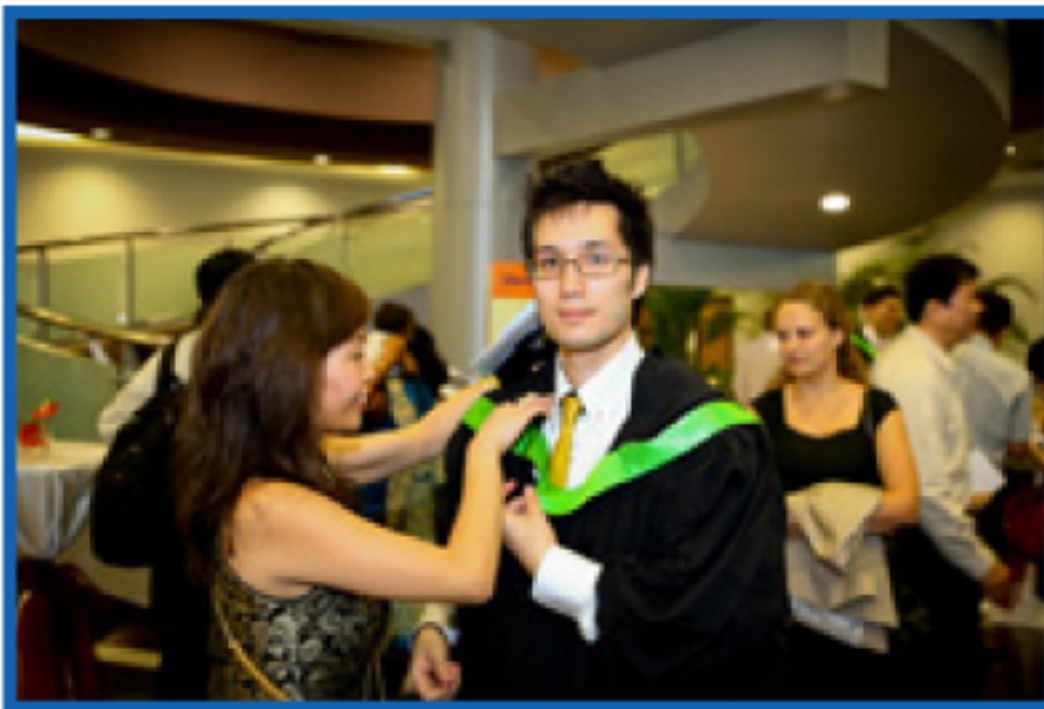
*Article was contributed by Richard Tan, BSc EEIT 2010 cohort; A M Radhika, MSc ICD 2012 Cohort; Lee Poh Sein, BSc CE 2011 cohort and Joey Chan, BSc EEIT 2010 cohort.



As we ushered in our new batch of students, TUM Asia also saw a total of 83 students graduate from its 5 Master of Science programmes.

The graduation event took place at University Town, NUS on the 20th of July 2012. This year's graduation ceremony was especially memorable, as this was our largest cohort of Master graduates yet, with 2012 also marking the 10th year anniversary of TUM Asia's presence in Singapore. Together with friends and family, the graduates started to stream into the hall by 6pm. One could easily spot the joyous smiles and laughter of proud parents and spouses as they helped their graduates to wear their graduation gowns. After a pre-event cocktail reception, the graduation ceremony commenced at 7pm.

The graduates took a grand walk-in, with friends, family and guests offering a heartfelt standing ovation. After an opening speech by the Master of Ceremony, TUM Asia's Managing Director Dr. Markus Wächter took the stand and gave his congratulatory speech to the graduates. "It has been a journey well-travelled and I want to say well done, I am proud of you and welcome to our alumni family. Continue to learn, explore, research and make worthy contributions to the society", said Dr. Wächter to the graduates. Following speeches from the Guest-of-Honour, Mr. Jens Janik (German Embassy) and Industry Partner, Dr. David Woon (EADS Innovation Works South Asia), the moment which all the graduates had been waiting for had finally arrived.





One by one, they stepped onto the platform and received the scroll which they had worked so hard for. Having endured the rigorous modules and examinations, these graduates indeed have been refined as gold as they passed the TUM academic standards with flying colours. It was a proud moment for them and their loved ones, and for some of them, the experience was made even sweeter as they took the stage for a second time to receive their awards in achieving the Best Student Award or the Best Master Thesis/Dissertation. The winner of the Best Student Award in Aerospace Engineering, Tanut Ungwattanapanit, and the winner of the Best Master Thesis in Industrial Chemistry, Angela Chian were invited to give closing speeches on their experience in the Master programme.

“So, in my opinion, the top secret to my success at TUM Asia was just “doing what I love”.”

Quoting Tanut Ungwattanapanit, Best Student in Aerospace Engineering



Graduates and their loved ones were treated to a spread of food after the ceremony, alongside a customized photo booth by Firefly Photography to provide graduates an opportunity to create mementos of their special day. From TUM Asia, we would like to congratulate the graduates once more - Well done, Class of 2012!

In this issue of Digest, TUM Asia speaks with Ms Leung Kafai, Design Director (MCU Products) with Silicon Laboratories, an industry leader in the innovation of high-performance, analog-intensive, mixed-signal integrated circuits (ICs).



Can you briefly tell us what Silicon Labs does?

Silicon Labs designs mixed-signal integrated circuits (ICs). These ICs form the key components of electronic systems, enabling the digital world of computing to interact with the analog world we live in. Our ICs are designed into electronics products used every day, from cell phones and televisions to smart meters and thermostats.

We understand that you are exploring the possibility of partnering TUM Asia in offering internships to our students in both the Bachelor and Master programmes. Could you tell us more about this?

We have a strategic initiative from our CEO to identify the best and brightest university talent. We begin by engaging with the strongest universities and working with professors to identify the high potential students. They are invited to participate in an active internship where they are mentored through projects by experienced engineers. These internships are designed to provide valuable experience and can result in a job offer upon completion.

What are some of the key qualities you are looking for when it comes to hiring graduates for positions in Silicon Labs?

We look for candidates with strong technical skills and are also creative thinkers that are interested in taking on design and engineering challenges. We look for employees with dedication, strong analytical skills and a desire to design and develop products that will achieve commercial success in the market place.

Could you share briefly about Silicon Labs' direction in the next 5 – 10 years, especially in terms of manpower/skilled employee planning?

Talent is the key asset we rely on to deliver innovative products to the market. We have invested in hiring new people consistently through our history. As a growth company, we need to rapidly expand our employee base around the world, particularly at our international headquarters in Singapore, but also in locations in China, India, Europe and the US. Over the next 5-10 years, we will be hiring design and applications engineers, software engineers, product and test engineers, sales and support staff. A meaningful percentage of these hires will be from the university.

Silicon Laboratories is an industry leader in the innovation of high-performance, analog-intensive, mixed-signal ICs. Developed by a world-class engineering team with unsurpassed expertise in mixed-signal design, Silicon Labs' diverse portfolio of patented semiconductor solutions offers customers significant advantages in performance, size and power consumption.

For more information about Silicon Labs, please visit www.silabs.com.

Following the interview with Silicon Labs, we also spoke with Mr. Joash Tan, a TUM Asia graduate who is now working at Silicon Labs after completing his Master's degree.

Name: Joash Tan

Country of Origin: Singapore

Course of Study in TUM Asia: Master of Science in Integrated Circuit Design (2008 intake)



Tell us about yourself and your experience in your current company.

I graduated from TUM/NTU MSc in Integrated Circuit Design course in 2010. After that, I joined back my sponsoring company Silicon Laboratories International. Silicon Labs is an exciting place to work, it is fast paced and you can quickly learn new skills and participate in industry-changing innovations. It is a friendly place where hard work and results are rewarded.

How has your learning experience in TUM Asia benefited you in your current job role?

The types of projects we focus on at Silicon Labs require analytical thinking and creative problem solving. We also have to be able to understand issues from a system level to find solutions. My education at TUM Asia helped prepare me by not only providing strong technical skills, but also the foundation to be actively participating in the most exciting new projects being tackled by my team.

As a graduate, what advice would you give to the current students?

Mixed-signal IC design is an exciting and challenging engineering field, and working for a company with an strong engineering culture that has a reputation for building innovative products is an excellent way to establish you in the industry.





Name: Tanut Ungwattanapanit
Country of Birth: Thailand
Course of Study in TUM Asia: Master of Science
in Aerospace Engineering (2009 intake)



Name: Angela Chian
Country of Birth: Singapore
Course of Study in TUM Asia: Master of Science
in Industrial Chemistry (2010 intake)

Tell us more about your plans moving forward.

Tanut: I am now working at the Institute of Lightweight Structures, TU München, Munich, Germany as a research associate in the field of optimization of composite aircraft structures. At the same time I am a PhD student as well as a visiting teaching assistant here at TUM-Asia.

Angela: Currently, I am a research assistant at the National University of Singapore (NUS), and will be moving on to pursue my PhD in August 2012.

Why did you decide to take up your TUM Asia Master degree?

Tanut: I was simply “chasing my dream”. The choice to take up this degree in Aerospace Engineering all started with my passion in aircraft, my passion to be an aerospace engineer.

Angela: Before joining the Master of Industrial Chemistry program, I was a teacher. I chose to step out of my comfort zone and lose all the school holiday privileges to further my studies because – I believe in life-long learning.

Share with us some of your memorable times as a TUM Asia student over the last 2 years.

Tanut: I really appreciate my classmates. Over the last 2 years, they have shown me what the definition of being a true friend is, regardless of age, nationality, or background.

I am also thankful for my lecturers both from NTU and TUM as well as NTU's and TUM-Asia's staffs, including Edeline, Punitha, and Monica.

Angela: The most memorable times are spent with my dear IC classmates. I will never forget the times we spent helping each other, mugging in the school, and library, sharing our books, creating our own set of notes, and attending the late night lessons as well as Saturday classes. And of course these memorable times came only by the support of my parents and the WDA funding program.

As one who just graduated from TUM Asia, what would you say to current or future students?

Tanut: Well, I have to say that I have never thought I am an excellent student and I have never thought to be where I am standing at today. All I did was to “do what I love”. I believe that if you find what you are good at or find what kind of job you love (not what kind of job you could earn the most); and if you discover it, I am certain you will be very happy to go to work for another thirty years.

Angela: I would let them know that the learning experience gained from the MSc programme is indeed fulfilling. TUM Asia's programme cover a wide spectrum of knowledge, ranging from financial and marketing, law, IP, administration and management to industrial chemistry modules. Besides the theory, practical skills are also provided thanks to the collaboration with NUS as well as the internship in a company of my choice.

**Soar high above your peers.
Fuel your career with a Master of Science degree in Aerospace Engineering.**

TUM Asia's Master of Science in Aerospace Engineering is jointly awarded by two of the world's most reputed universities: Technische Universität München (TUM) and Nanyang Technological University (NTU). The programme looks into providing students with key skills and knowledge to become highly qualified engineers in an ever-growing aerospace sector. The modules cover a diverse and dynamic range of subjects, from Aerodynamics to Structures & Systems, as well as Flight Mechanics & Control.

Your Lecturers

Study with the world's best lecturers from TUM and NTU as well as experts from the industry. In contrast to the practice of tele-teaching, TUM Asia engages all international lecturers on an exclusive basis for the lecture period in Singapore, assuring you of direct contact with your instructors throughout the duration of your programme.

Your Education

At TUM Asia, you will engage in a unique joint degree programme that runs over 24 months of scientific training, practical research & cultural enrichment. In addition, you will benefit from an enriched & holistic curriculum which includes Marketing, Business Administration, Leadership Training, Legal Training & European and Asian history. With our cross-discipline modules, we actively meet the needs for synergising of cultural differences in the corporate world.

Your Career

Through lecturers from the industry, internship and Master's Dissertation opportunities, you are able to make contact with potential employers during the course of your study. Our close cooperation with internationally renowned multinational companies ensures that they receive highly skilled and creative professionals trained by us and you are assured of leading your competition in the global economy. Graduates may also engage with related research institutions and pursue further studies – the joint TUM/NTU degree opens the door for a Ph.D. Both TUM and NTU educate students to become leading researchers in a variety of fields related to the aerospace industry.



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Shanghai Ranking again taps TUM as Germany's top university

The Technische Universität München has once again been ranked as the best German university in the latest Academic Ranking of World Universities (Shanghai Ranking). It came in at 53rd place worldwide and held its position above all other universities in Germany, including the so-called “full universities.” In rankings by individual subjects, TUM placed 12th worldwide in chemistry and was unchallenged nationally in computer science. In comparisons of broader disciplinary areas, TUM was tops nationwide in natural sciences / mathematics, engineering sciences, and life sciences.



The ranking by the Shanghai Jiao Tong University evaluates the research achievements of universities worldwide. The assessment is based above all on publications in important journals and scientists' citation ratings, as well as the number of scientists and alumni with Nobel Prizes and Fields Medals.

TUM ranked higher than LMU Munich (60th place), the University of Heidelberg (62nd place) and the University of Freiburg (99th place). None of Germany's other technical universities made a showing above ranks 201-300. TUM was ranked fourth-best among all technical universities in Europe.

Chemistry at TUM advanced one more position from last year's ranking and now stands, at 12th place worldwide, ahead of Oxford University. With respect to the broader disciplinary areas, TUM ranked among the top 50 in natural sciences and mathematics (43rd place) and was the only German university to place among the world's top 100 in engineering sciences (ranks 51-75).

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Intelligent cars warn each other: 120 cars put new communication system to the test

One of the largest fleet tests in the world was launched on the 6th of August 2012 in Germany. 120 cars hit the road to test a system known as simTD, a technology that enables vehicles to communicate with each other and their environment. This new system brought scientists together with private companies and public organizations. It enables cars to exchange information on traffic conditions and possible dangers. Researchers at Technische Universität München (TUM) played a key role in designing the test scenarios. They will also be evaluating the data.

The “Safe Intelligent Mobility – Test Field Germany (simTD)” research project aims to help drivers select the best routes, detect obstacles before they see them and cut emissions through energy-efficient driving. To achieve these goals, researchers have electronically networked cars with each other and their infrastructure, known as car-to-car and car-to-x communication. Over the coming months, 120 cars will be testing the simTD consortium’s system in real life – putting it through its paces on the highways, country roads and city streets in and around Frankfurt.

The vehicles transmit information on the traffic conditions to the control station, which can then predict and manage traffic developments. A display provides drivers with recommendations on the best route. The system also assists drivers at intersections or traffic lights by providing a timely display of the right lane for the next turn, or the optimum speed to ride a “wave of green traffic lights.”

The system also alerts drivers to imminent hazards. An emergency braking lamp in the display, for instance, warns the driver if a vehicle ahead brakes heavily – well before the driver is physically able to react to the situation. Where rescue services are responding to an incident, the system shows the direction and the lane taken by the emergency vehicles, enabling the driver to know precisely where they are. If obstacles, such as lost cargo, are blocking the road, drivers receive timely advice on alternative routes.

The simTD–System is using wireless technology that was specifically developed for this automotive field of application. The technology is based on the well-known WLAN standard. Information can either be transferred directly to other vehicles or to Roadside Stations installed along the road. If the communication partner is not located in close vicinity to the sender, other vehicles can transmit or store and forward information.

What kind of formations, at what times, and which routes do the individual vehicles in the test fleet have to take to produce reliable results? Scientists from the Technische Universität München have prepared the field test and will analyze the huge amounts of data produced. “We investigate how drivers adopt this technology in everyday scenarios and to what extent we can improve road safety and prevent congestion,” as Prof. Fritz Busch, TUM Chair for Traffic Engineering and Control outlines. The scientists also simulate what impact the introduction of the technology would have on the entire traffic in the test area if a certain proportion of cars were fitted with this technology.

To find out more, visit www.simTD.de



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