

# digest

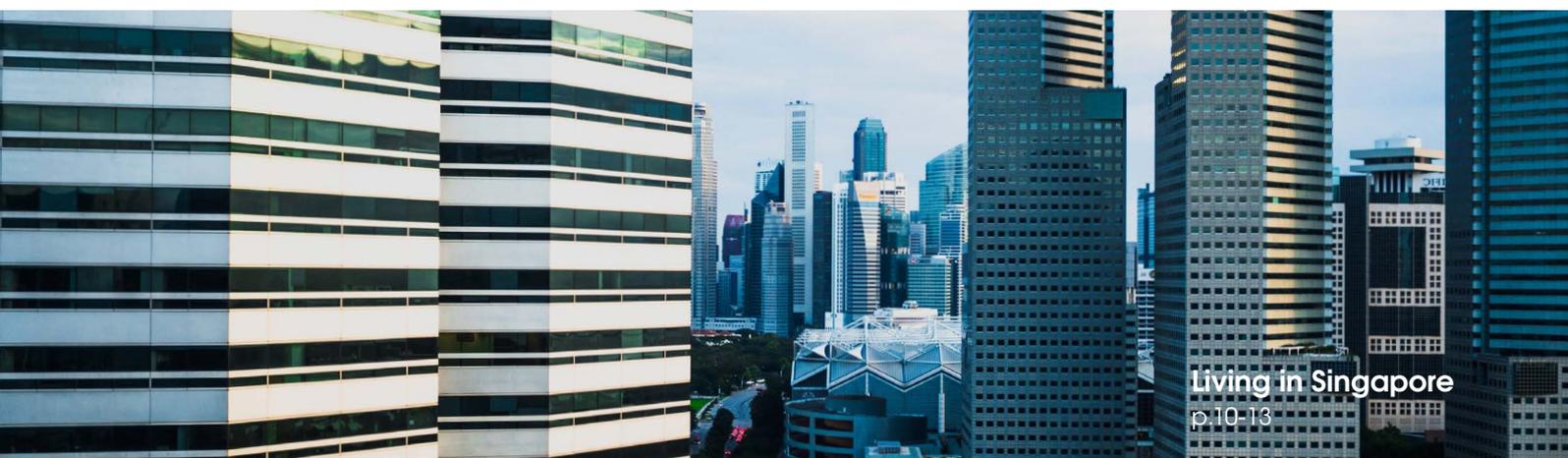
September - December 2018 Issue



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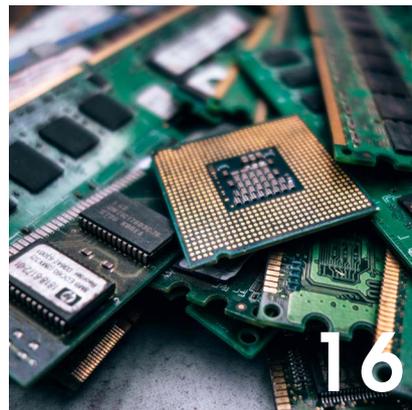
## A NEW STEP FORWARD

One Masters graduate tells us more about her transition from the classroom to the workforce



## Herzlich Willkommen

TUM Asia welcomes the newest members of the Bachelor and Master programmes



## EMERGING MEMORY TECHNOLOGIES

A TUM Asia alumni shares his entrepreneurial journey on discovering the potential of Memory Technologies

## ON THE COVER

Empowered For Excellence - Israel Tan Photography  
The World Of Logistics - Israel Tan Photography  
Living In Singapore - Pexels

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# Director's Message



It has been an exciting year for TUM Asia with numerous celebrations. Besides TUM Asia's 15th birthday and TUM's 150<sup>th</sup> Anniversary, we have most recently concluded our 15<sup>th</sup> graduation ceremony and witnessed the graduation of the Class of 2018, featured on pages 4 - 5. These celebrations mark only new beginnings for new expeditions and adventures ahead for our students and alumni.

As the world advances towards a digital future, changing technological needs have resulted in an increase in demand for scientists, technologists, or engineers in areas such as defence and security, automation, infrastructure, infocomm technology and smart systems. Engineers have been encouraged to continuously upgrade their skills to stay relevant to the challenges and the changes. At TUM Asia, we strive to build a culture of innovation and promote the spirit of entrepreneurship. Our students are trained to not be afraid to think differently, to create new solutions and to find unusual ways to address current issues in our world today.

In this issue of DIGEST, we spoke with our alumnus from the Master of Science in Microelectronics, Stefan Müller, who is now the chief operating officer (CEO) of The Ferroelectric Memory Company (FMC). Hear more about his journey of entrepreneurship and innovation on page 16 - 17. We were also able to meet Professor Peter Klaus, who has been teaching in the Transport and Logistics programme for nine years now. Hear him share about his insights and experiences in the Logistics industry on pages 14 - 15.

In the past quarter, we welcomed the 8th and 17th cohort of Bachelor and Master students respectively. One highlight of our Master programme is the opportunity to meet with people from all around the world. We were delighted to meet five of our new Master students, each studying in a different course, coming from different backgrounds and places. Read about why they decided to pursue a German degree in Asia and how they are adjusting so far in a new environment on pages 10 - 13.

This issue is packed with exciting reads, highlighting the inspiring journeys of our students, alumni and professors. We hope to see you, our readers, become part of our story as well. With that, we hope that you will enjoy this insightful read.

**Yours Sincerely,**

A handwritten signature in black ink, which appears to read "Markus Wächter". The signature is fluid and cursive.

**Dr. Markus Wächter**  
Managing Director, TUM Asia

# Empowered For Excellence



In July this year, TUM Asia held its 15<sup>th</sup> graduation ceremony for the Class of 2018, in conjuncture with the celebration of TUM's 150 years of culture of excellence. In his commencement address, Dr. Markus Wächter congratulated the Bachelor and Master students and told them that the graduation was the culmination of a challenging but rewarding journey. "TUM was once intended to bring "the spark of science" into the industry. Today, the university is one of the best, and continues to look into innovating the future of science and technology.", said Dr. Wächter, as he encouraged the students to persevere on with the same spirit that TUM carried. "For the next 150 years to come, new innovations, contributions to the society, and discoveries will be created by alumni like you," Dr. Wächter added.

Moving on to the next phase of life, the graduation marks a new beginning for our graduates, whether for those who are moving into the workforce or those who are continuing in academia. Ashley Teo, valedictorian of the Bachelor of Science in Electrical Engineering & Information Technology, shared that the TUM education and overseas immersion experience has helped prepared students like himself to step into the real world. "It was an eye-opening experience, it provided us with the opportunities to meet new friends, experience new cultures, gain

new experiences and most importantly to learn to live with one another. Having said this, it felt like TUM Asia was the stepping stone for us to take our first step into the world," Ashley shared.

The graduands were also thankful for the support that they received from their classmates, family, friends, and professors. Chock Wee Boon, valedictorian of the Master of Science in Aerospace Engineering, shared words of appreciation with his friends and families who journeyed with him, along with words of advice to the graduating class. "Society's view of success is about being competitive and getting to the top. It doesn't care about happiness. It's up to us to make a conscious effort right now. Follow your heart and passion but be open to learn and love new things. Love your failures, love your critiques, learn valuable lessons and love yourself by becoming better."

“**Follow your heart and passion but be open to learn and love new things. Love your failures, love your critiques, learn valuable lessons and love yourself by becoming better.**”

Chock Wee Boon



# A New Step Forward



Tai Jian Nee gives her Valedictorian speech at TUM Asia's 15<sup>th</sup> Graduation Ceremony.

## **From Singapore to the United States of America and back to Singapore again, Tai Jien Nee shares more on her eventful academic journey and internship experiences as she pursues her passion for the pharmaceuticals.**

### **Hi Jien Nee, can you give our readers a short introduction about yourself?**

Hello! I grew up in Singapore but moved to the U.S. when I was 17 for high school and university, before moving back to Singapore six years later. Growing up, I had always been interested in science and chemistry in particular. I therefore chose to study chemistry at Purdue University in Indiana, U.S. Through the years, I realised that I wanted to contribute my knowledge to improve people's lives through medicine, and made it my goal to work in the pharmaceutical industry in the future. After graduating with my Bachelor of Science in 2016, I chose to immediately pursue my Master's degree with TUM Asia. Currently, I have just started my first job as a Research Assistant with Chugai Pharmabody Research (CPR) in Biopolis.

### **What made you decide to pursue a Master's degree in the field of Chemistry?**

During my undergraduate studies, I completed an internship with Eli Lilly, a multinational pharmaceutical company. I realized then that to effectively contribute my skills to the pharmaceutical industry, I needed to gain more in-depth knowledge, particularly in the fields of analytical chemistry and biochemistry. Some of my mentors suggested that I join a PhD programme, but I felt that a Master's degree was the best choice for me to learn directly applicable skills and knowledge for the industry. I was particularly drawn to the TUM Asia programme because it gave me the chance to move back home to be with my family and friends.

### **In retrospect, what do you think were some of the highlights of your educational journey in TUM Asia?**

The main reason why I chose to do my Master's degree with TUM Asia was because of the industrial exposure during the 9-month internship and thesis



Jien Nee with her Industrial Chemistry classmates at TUM Asia

period, and that was definitely the most memorable part of my educational journey here. While it was definitely a very stressful time, I have learnt so much, not only in terms of technical skills, but in writing and people skills as well.

Another thing that I think many of us took for granted was the diversity of the students at TUM Asia. Looking back, it was such a privilege to have been able to interact with people from different countries and backgrounds, and it's definitely an essential skill to have in any career path going forward.

#### **How did you end up choosing to do your internship with A\*Star and how was the experience?**

It took me a while to find a suitable internship position before I was offered a position with the Analytics group at the Bioprocessing Technology Institute (BTI). I completed both my internship and Master's thesis at BTI, where I worked on N-glycan analysis using ultra performance liquid chromatography-mass spectrometry (UPLC-MS). I am thankful for my mentors who were very patient and supportive. I am glad I took the time to find a lab that fit my interests, because the knowledge I gained from the experience definitely helped me land my current job at CPR.

#### **You have just recently graduated. How has it been like being out in the workforce?**

It is still hard to believe that I am now a working adult and no longer a student. I have only been in the workforce for a few weeks, but I am really enjoying it so far. My new job is fast-paced, challenging, and exciting. I love that I still get to learn something new every day. I am currently still in training, but I am

“**Looking back, it was such a privilege to have been able to interact with people from different countries and backgrounds, and it's definitely an essential skill to have in any career path going forward.**”

Tai Jien Nee

Photos: Tai Jien Nee

looking forward to getting into the swing of things once I am fully trained. Since my job is lab-based, I can't bring any work home, for which I am super grateful!

#### **What would you say to someone who is considering pursuing a Master's degree in TUM Asia?**

Go for it! The TUM Asia programme will help you grow both technically and personally, allow you to meet people from different parts of the globe, and challenge you in ways you did not expect. It is a tough journey, but it is all made worth it on graduation day!



Jien Nee and her classmates hanging out outside the classroom



A photo of Jien Nee taken on Graduation Day

ORIENTATION 2018

# Herzlich Willkommen



**T**he month of August is always an exciting time in TUM Asia as the newest members of the Bachelor and Master programmes arrive from different places to commence their studies. On the 27<sup>th</sup> of July, the yearly orientation programme was held to give our freshmen an overview of the programmes and to facilitate a smooth transition into university life. During the orientation, students were able to meet the respective faculty members and staff who will be taking care of them as well as their fellow course mates. Besides the administrative matters, the fun part of the orientation day were the games, specially planned by the seniors, that allowed the freshmen to mingle and bond with each other in small group settings. Overall, it was a great experience for our students to familiarize themselves with the programme and to get to know one another.

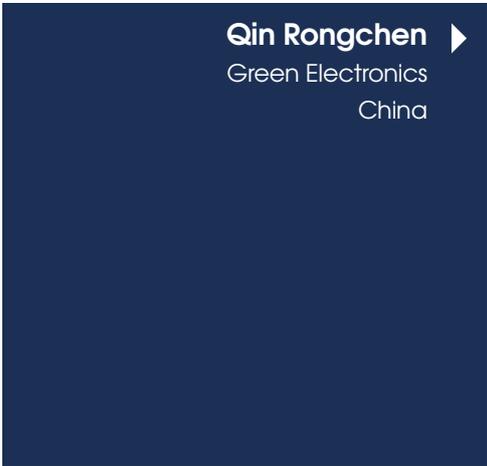


## STUDENT FEATURE

# Living In Singapore



◀ **Henry Serrano**  
Integrated Circuit Design  
Mexico



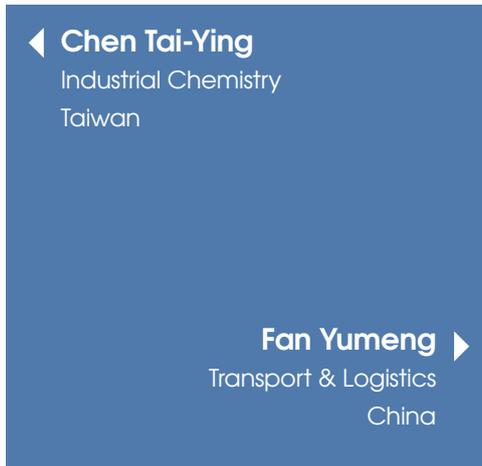
**Qin Rongchen** ▶  
Green Electronics  
China



▲ **Jaishree Jalde**  
Aerospace Engineering  
India



◀ **Chen Tai-Ying**  
Industrial Chemistry  
Taiwan



**Fan Yumeng** ▶  
Transport & Logistics  
China



**As our Master of Science students embark on their first semester in the various Master programmes, our DIGEST team took the opportunity to speak with five of our new Master students to find out more on how they have been adjusting to their studies and living in Singapore.**

Photos: TUM Asia, Israel Tan Photography

**Hi, can you give our readers a short introduction about yourself?**

**Henry:** I am a Mechatronics Engineer with five years of experience in firmware development. This has given me the opportunities to participate in awesome tech events such as Mass Challenge, CES, SXSW, NAMM across the span of amazing companies such as Kryo, Machina, and Vanderdroid. I took my Bachelor's degree in Mexico's "Universidad Autónoma de Yucatán". I took a 3-month internship in Texas A&M just before graduation. On a personal side, I'm a serious language lover and I'm currently learning both the German and Japanese languages.

**Jaishree:** Hello, I am Jaishree from Bangalore, India. I just completed my Bachelor's degree in Mechanical Engineering and I am now pursuing my Master's degree in Aerospace Engineering at TUM Asia. I am a very outgoing person who loves playing the guitar, reading books or taking a stroll through the cool nights of Singapore.

**Rongchen:** Hi, my name is Qin Rongchen. I graduated from Beijing institute of technology in Automation. Now, I am a student in TUM-Asia and my major is Green Electronics. It is a great honor for me to take part in this interview.

**Tai-Ying:** I completed my Bachelor's degree in National Tsing Hua University in Taiwan and took a double major in Chemical Engineering and Quantitative Finance. The reason why I chose a double degree was because I wanted to possess the ability and knowledge of basic engineering as well as acquire the fundamental background of economics and marketing.

**Yumeng:** Hi, I am Yumeng. I recently graduated from North China University of Technology, Beijing, with a Bachelor's degree in Communication Engineering. After my undergraduate studies, I chose to pursue a Master degree abroad. To be honest, this is the first time I have been to Singapore. What really surprised me was the number of swimming pools available to the public. I personally love swimming and I am glad this activity is easily accessible to me!

**What attracted you to Singapore as a study location?**

**Henry:** Singapore is a technology hub in Asia with a unique geographical position. The semiconductor industry here has long been thriving, making it an ideal spot to learn and gain new insights in hardware design.

**Jaishree:** What attracted me the most was the joint TUM-NTU degree program. Getting the best of both worlds by taking a 4-hour flight from home, why not?

**Rongchen:** Singapore is an important economic centre in Asia, and Singapore also has a diverse culture. Besides this, there is a huge variety of technology companies and institutes, such as A\*STAR and Infineon. This provides plenty of opportunities for me to learn foreign concepts as well as to seek job prospects in the field of Green Electronics.



A group photo of the Green Electronics students at NTU

“**Singapore is a technology hub in Asia with a unique geographical position. The semiconductor industry here has long been thriving, making it an ideal spot to learn and gain new insights in hardware design.**”

Henry Serrano

**Tai-Ying:** Firstly, the National University of Singapore (NUS) is ranked highly in both the engineering and science fields. TUM is also well-known for providing an education that is practical for the industry. I chose to pursue a Master of Science degree in Industrial Chemistry at TUM as the programme was reputable in the chemical industry. Besides that, I wanted a programme that is not just theoretical but also application-focused. I made TUM Asia my first choice as the programme included a compulsory Master Thesis writing and internship, which I believe would give me the opportunity to apply my knowledge in the real industry.

**Yumeng:** Singapore is known to be a global hub for transport and logistics, and thus there are many opportunities to acquire practical skills in this field. Another factor is the language spoken here. As most Singaporeans can speak both English and Mandarin, it makes it easier for Chinese students to adapt to the new environment.

**How was it like adjusting to a new environment here?**

**Henry:** So far, adapting to the new environment has been a positive experience. Public transportation and security are what I consider to be Singapore's high-marks. And thanks to Singapore's cultural mix, I have already been able to make friends with people from all over the world.



Chen Tai-Ying (4<sup>th</sup> from the right), together with his classmates and lecturers during lab class

**Jaishree:** To be very honest, it was not easy at first due as I had to adjust to the weather conditions and stay away from my family. But at the same time, I feel grateful for having the opportunity to study here and I would like to make the most out of it.

**Rongchen:** In terms of the climate, I have to say that the weather here is rather similar to my home city so I was able to adapt easily. In terms of culture, the one thing I must improve in is to converse regularly in English, which is the common language spoken in Singapore. To overcome the language barrier, I try my best to communicate with native English speakers. Another interesting thing I have observed about Singapore is that there are unique laws and regulations that people need to abide by, such as the forbiddance of food and drinks on trains.

**Tai-Ying:** Honestly, I am still getting used to the language spoken here as Singaporeans mostly speak Singlish and have an 'accent' that is new to me. Besides that, I am also getting used to living in a condominium with small-sized apartments as they are not common in Taiwan.

**Yumeng:** It has been good. Initially, I was a little afraid to talk to the other international students because I was not so confident in speaking English. But I am happy to share that this situation is improving!

**Share with us an interesting observation you have noticed since starting class at TUM Asia.**

**Henry:** The course's learning pace is of utmost importance. The rhythm of the courses has been fast and challenging, and there are many topics to be learned and mastered every three weeks. All in all, that's the reason for taking this course, right?

**Jaishree:** I love how clean Singapore is, how polite the people are, and how everyone abides by the rules which helps to create a more conducive environment to live in. This 'live and let live' culture is something you don't get to see in India. Some examples I have observed include how plastic bags are available outside the malls for people to keep their wet umbrellas, and how commuters would usually give way on the escalators.

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**It is a new experience for me to interact with people from different cultures and backgrounds, and even different perspectives of scientific knowledge. I am able to learn not only from the professors, but also from my classmates**”

Chen Tai-Ying

**Rongchen:** I realized many of my classmates come from different majors under the same domain of 'Microelectronics', and thus we have diversified knowledge bases in the classroom. The most interesting observation is that no matter how difficult the course is for some students, they will stretch themselves to solve the difficult problems and to understand the complex concepts.

**Tai-Ying:** During the orientation, I found out that most of my classmates come from all around the world, even from the far north, Russia. It is a new experience for me to interact with people from different cultures and backgrounds, and even different perspectives of scientific knowledge. I am able to learn not only from the professors, but also from my classmates, which really broadened my horizon.

**Yumeng:** I noticed that the professors are very patient and the learning style here is rather interactive. They do not mind when we ask them questions during the class and would take time to address our queries on the spot. This is quite different from our learning style in China as we are expected to raise our questions only at the end of class.

**Tell us one aspect of the field of Engineering which inspires or interests you**

**Henry:** Product Development has always been my main field of interest in engineering. By combining the newest technology both on the hardware and software sides, we are able to create disruptive solutions.

Photo: TUM Asia

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**I hope to be able to apply my knowledge in transport and logistics to help reduce commuting time and improve people's living standards.** ”

Fang Yumeng

**Jaishree:** Without a doubt, it would be Space Engineering Technology, I'm a big-time travel lover and besides wanting to travel every part of this world, I would love to see this beautiful world from the outer space. I thus have a dream about rockets - I want to build it, sit in it and travel in it. Talking about technology, it astounds me how we can now talk about things that never used to be possible, for example, colonizing mars. This is definitely an area I hope to work in.

**Rongchen:** It would be 3D-printing technology. The technology was created in 1986 and has been used in many industries, such as aerospace science and technology, biomedical field, housing construction, auto industry and electronic industry. It requires an extremely precise control of materials, which makes settings and imaginations in old movies come true today. I believe that this technology will become more valuable in the future.

**Tai-Ying:** The focus of my Bachelor thesis and internship was on computer simulation. I am familiar with software such as Matlab, Aspen and Tensorflow and have experience in basic programming. In future, I hope to focus on data analysis, which I consider as a strength of mine. I am also open to take on new challenges in other aspects of chemical engineering.

**Yumeng:** There are many developing cities in the world that suffer from the issue of traffic congestion, especially in China. I hope to be able to apply my knowledge in transport and logistics to help reduce commuting time and improve people's living standards.



Qin Rongchen (first from right) attending class at NTU



Fang Yumeng attending a Transport and Logistics class

**Henry:** I certainly hope to gain further insights into product development and manufacturing. Another thing that I'm most excited to achieve is expanding my business network by meeting amazing people and building amazing solutions.

**Jaishree:** I know that this 2-year degree is going to open a lot of doors for me but in the end, I will have to find my own way through that door. Hence, I want to equip myself enough to get there. I am also someone who believes academics alone is not everything that defines you. I want to study hard yet make beautiful memories at the same time. Viva la Vida.

**Rongchen:** When I studied Automation during my undergraduate studies, the three major topics we studied were System Control, Pattern Recognition and Satellite Navigation. One challenge I faced was the ability to grasp the fundamental understanding of electronic devices used in these areas. This is why I chose to study Green Electronics as I wanted to have a deeper theoretical understanding of Electronic Engineering before moving on to more advanced concepts. That will enhance my ability in creation and research.

**Tai-Ying:** As a Master student in TUM Asia, I hope to learn from German companies where I could conduct my internship with and develop my future career in engineering.

**Yumeng:** I hope to gain new ways of thinking so that I can learn to look out of the box and solve problems more efficiently.

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**The most interesting observation is that no matter how difficult the course is for some students, they will stretch themselves to solve the difficult problems and to understand the complex concepts.** ”

Qin Rongchen

# The World Of Logistics



Professor Peter Klaus teaching in the Transport and Logistics class

**The DIGEST team had the opportunity to interview Professor Peter Klaus, who has been teaching in TUM Asia's Transport and Logistics Programme for the past nine years. He shares his experiences in the Logistics industry and his views on the future of the industry.**

**Hi Prof. Klaus, can you share with us about your background and career experiences?**

I must say that my journey to becoming a university professor was not the usual academic career path. I grew up and worked in the environment of a family-owned transportation business, where I learnt to drive trucks and went through the typical 3-year German "dual" vocational training programme in transport and forwarding. I pursued my "Dipl.Kfm", (which loosely corresponds to an MBA) alongside

practical and managerial work in the transport industry. After my family sold the business, I spent 4.5 years in the United States to pursue a Doctoral degree in Business Administration at Boston University, followed by a Master's in Transportation at Massachusetts Institute of Technology (MIT). That was the official start of my academic career path. For nearly 20 years, I held the Chair for Business Logistics at the University of Erlangen-Nuernberg and was responsible for a research unit at the German Fraunhofer Institute, called the Nuernberg based "Supply Chain Services" group.

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**I believe that there are plenty of opportunities we can apply the disciplines of Mathematics and Engineering in the Logistics industry.**

”

Prof. Peter Klaus

Now I am officially retired, but I enjoy my teaching assignment at TUM Asia, serve on several company boards and professional committees, and am still involved in some research and consulting work.

**You have taught in the TL programme for 9 years now. What keeps you coming back to teach?**

For one, I find it a fascinating opportunity to meet and work with Asian students and learn firsthand about Asia. I also must admit, that teaching small groups here, in a relatively informal environment, is more fun than teaching in a big public university with lots of administrative things to take care of.

**Could you give us some insights to your main academic interests?**

My academic interests have always been influenced by my experiences and involvement with the “real world” business problems. One focus has been on market research and monitoring developments in the very big, yet often underestimated logistics service industry. Another focus is on exploring the application of behavioral and organizational aspects, and even Political Science to the fields of Logistics and Supply Chain Management. I believe that there are plenty of opportunities we can apply the disciplines of Mathematics and Engineering in the Logistics industry.

**What would you consider to be the key learning points in the module that you teach at TUM Asia?**

Following up on what I just said, I try to make students understand how useful – or even necessary – it is for real world managers to look at industry problems through the lenses of several disciplines. Therefore, I would also like to emphasize that there are tremendous career opportunities in the diverse and growing field of logistics.

**What are some rapid developments in the logistics industry that students will have to be prepared to face?**

Today, everyone is stressing on the role of Digitalization in the future of our industry, and I am no different here. But there are other equally important developments, such as dramatically-changing demographics and lifestyles, and the ever more frequent political and social disruptions, that should be observed and considered as well. For example, in countries like Germany, it is increasingly a challenge



Students attending Prof. Peter Klaus' class on 'Introduction to Business Logistics'

to attract more drivers to operate the trucks. This is due to road congestions and regulatory restrictions which cause their productivity to decline. Here is where advanced technologies are necessary and useful to increase productivity. Students must be more sensitive towards such real world dilemmas and learn to apply their creativity to solve them.

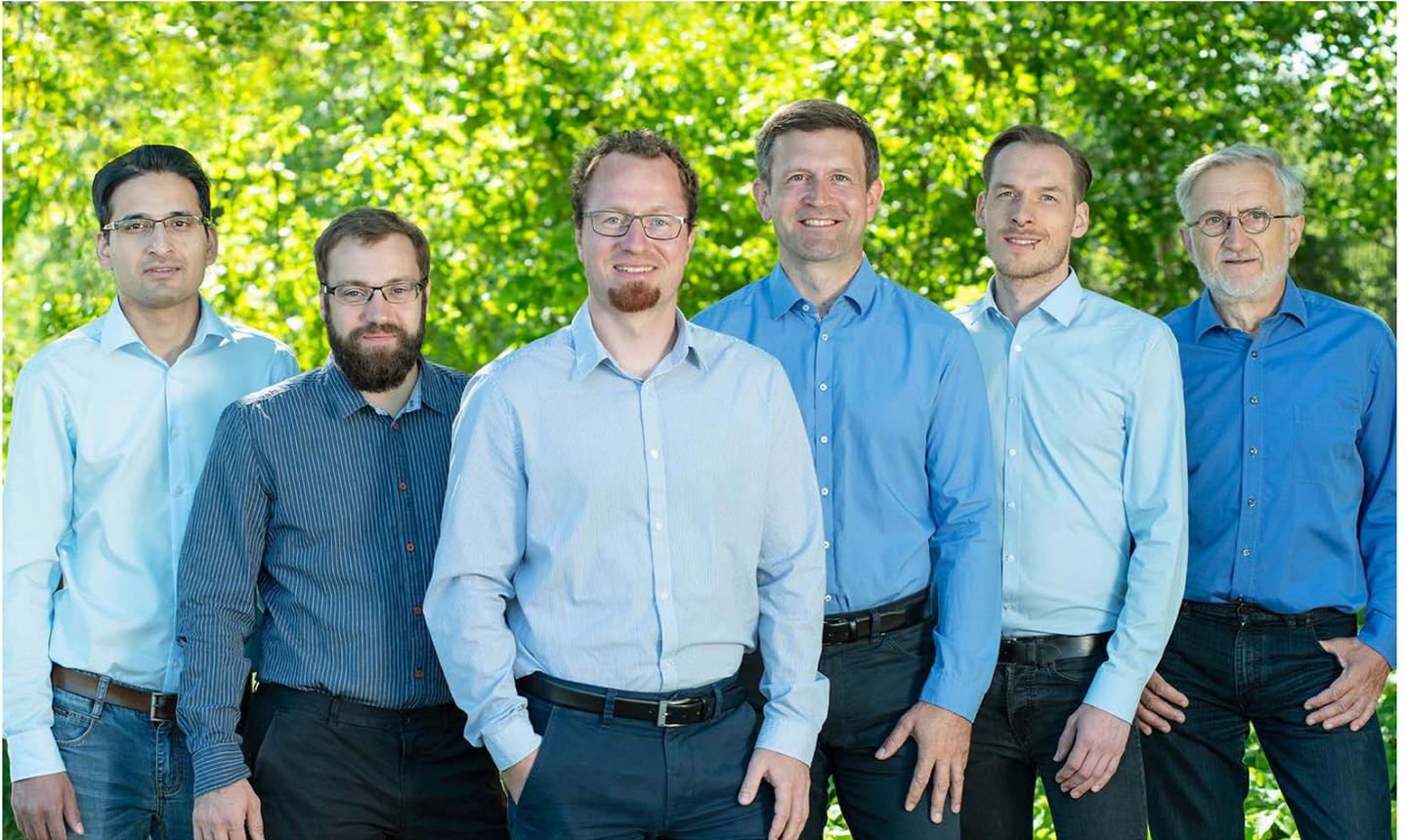
**With your years of teaching experience, what is one important life lesson that students should embrace while preparing for the workforce?**

I recently found a quote that says, “Curiosity is the door to wisdom”. If I add on to that, a lesson I would like to share: “It is curiosity and persistence that drives a successful career”.



**DID YOU KNOW:** The global third party logistics (3PL) industry is expanding significantly with an estimated output of USD 1,100 billion by 2024. (Report by Global Market Insights, Inc.)

# Emerging Memory Technologies



Stefan Müller and his team at the Ferroelectric Memory Company (FMC).

**Stefan Müller completed his Master of Science degree in Microelectronics in 2011 and is now the CEO of the Ferroelectric Memory Company (FMC), an enterprise that commercializes technology for disruptive non-volatile memory solutions not only limited to microcontrollers. The DIGEST team speaks with him to hear about his entrepreneurial journey.**

**Hi Stefan, can you give our readers an introduction of yourself and share with us what you've been up to?**

I graduated from the TUM Asia Class of 2011 with a joint TUM-NTU Master's degree in Microelectronics. In 2015, I received my PhD degree from Dresden University of Technology, where I focused my work on HfO<sub>2</sub>-based ferroelectric devices. I then became a project leader at TU Dresden with the aim to spin-off a research discovery into a startup. Since 2016, I am CEO of the Ferroelectric Memory Company (FMC).

**How did you end up pursuing a joint degree from TUM and NTU?**

During my undergraduate studies, I became very interested in semiconductor physics and electronics. I moved to Munich to pursue my graduate studies in this field. When I learnt that TUM was also offering

a dual degree programme in Microelectronics at German Institute of Science and Technology (now known as TUM Asia), I decided to go for it. At that time, I was looking for an opportunity to spend some time abroad and this programme at TUM Asia was the perfect fit.

**You have been in Singapore for a period of time for your Master's Studies. Did Singapore leave an impact on you in any way ever since you completed your studies?**

Coming to Singapore was a great entry point into the Asian culture. The time abroad was a great experience and I would recommend to any student to do something similar during their undergraduate or graduate studies.

**What led you to form the Ferroelectric Memory Company (FMC)? Can you share with us your journey in a start-up?**



Dr. Stefan Müller holding a 12" wafer incorporating FMC's ferroelectric memory technology.

“(The Memory Technology) offers up to 1000x improvements in write speed and energy consumption and therefore can serve as a true enabler for market trends like internet-of-things or artificial intelligence.”

Stefan Müller

At TUM Asia, I was able to learn a lot about complementary metal oxide semiconductor (CMOS) scaling and what drives semiconductor industry from a manufacturing perspective. When I learnt about the memory material discovery made in Dresden, which was closely linked to CMOS high-volume manufacturing, it sparked my interest in the new emerging memory technology. This made me decide to go for a PhD in this field. During my PhD, I could verify that the new memory technology indeed carried a great potential to be applied in semiconductor industry. This led to the formation of FMC, which now tries to bring this new technology into production with some of the world's largest semiconductor companies.

**What is FMC's memory technology about and how does it help to tackle industry problems such as disruptive changes?**

The memory technology commercialized by FMC allows for a significant cost reduction for semiconductor fabrication plants. Moreover, it offers up to 1000x improvements in write speed and energy consumption and therefore can serve as a true enabler for market trends like internet-of-things or artificial intelligence. In the long run, the technology has the potential to disrupt today's memory landscape as a whole.

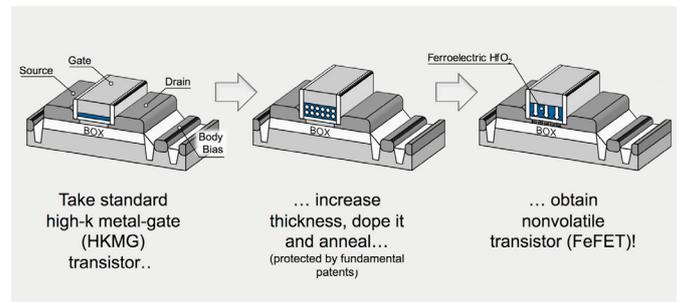
Photos: Stefan Müller

**In your journey to founding your own company, is there any interesting encounters that you would like to share with us?**

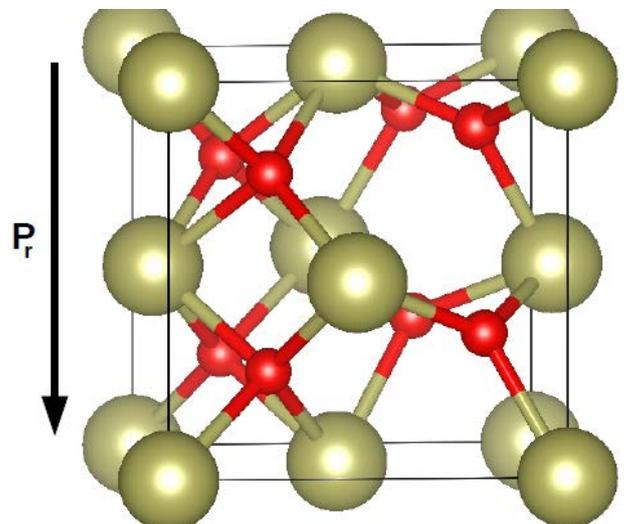
During the formation of FMC, I had to first gather a team of technical experts with different backgrounds, including talented engineers with integrated circuit design and characterization background. After having formed the team, the next challenge was to get financing for the company. We successfully received a round of seed financing in September 2017 from High-Tech Gründerfonds, one of the largest investors in Germany. This enabled us to generate our first revenues which then triggered a larger Series A investment by both HTGF and our new investor eCAPITAL, a very well-known German venture capital firm. We are now on the path to grow our team to 15 people and also extend our customer base. Stay tuned and follow our progress!

**What is an advice you would give to our students and alumni who are aspiring entrepreneurs?**

There are certainly challenges to overcome as an entrepreneur, but the breadth of different tasks you are exposed to as a founder is quite extraordinary and it will serve as an unique experience for you personally. Hence, I would say, go for it and most importantly, show perseverance!



An illustration of the Ferroelectric Transistor



HfO<sub>2</sub>, a material used in the Ferroelectric Memory Technology

# The Chatter



## **‘Smart Technology’ Summer School 2018**

Hosted by TUM Asia, the “Smart Technology” Summer School was held in Singapore from 1 to 10 July 2018. The summer school was open to undergraduate students from various universities and a total of 14 students participated in the summer school, coming from various countries like China, Taiwan and India. In the setting of a German-based classroom, participants were able to learn from industry experts about today’s Smart Technology topics such as Industrie 4.0, Smart Transport Systems and Smart Manufacturing. Beyond the technical knowledge, participants were also able to experience Singapore’s unique culture heritage through cultural immersions and pick up hints to Germany and the German language as part of the extracurricular activities. At the end of the Summer School, the participants each gave a personal presentation to summarize their main takeaways and insights gained over the 10-day programme. The summer school ended with a commemorative German-style lunch where the participants were able to celebrate their completion of the programme as well as new friendships that were forged.

Photos: TUM Asia





Photo: Technical University of Munich

# 150 Years of TUM

## 15 Years of TUM Asia