Opening Speech by

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SENIOR MINISTER OF STATE FOR TRADE & INDUSTRY
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OFFICIAL OPENING OF VIRTUS,
IC DESIGN CENTRE OF EXCELLENCE

Wednesday, 20 October 2010, 9am
Tan Chin Tuan Lecture Theatre, NTU

Dr Su Guaning,
   President of Nanyang Technological University,

Professor Kam Chan Hin,
   Chair, Electrical and Electronics Engineering,

Professor Atila Alvandpour,
   Director, VIRTUS IC Design Centre of Excellence,

Distinguished members of the VIRTUS Scientific Advisory Board,

Ladies and gentlemen,

Good morning.

Introduction

I am pleased to join you this morning for the opening of Nanyang Technological University’s (NTU) VIRTUS, the IC Design Centre of Excellence.
VIRTUS – first of its kind in Singapore

VIRTUS will be a pioneer in the field of integrated circuit design (IC design) in Singapore. It will develop talent, offer leading edge technologies and create industry spinoffs. The facility, the first of its kind in Singapore, will be a specialised centre with strong industry linkages. It will focus on training and capability development for analog and mixed signal IC design, particularly in the areas of power management and energy harvesting.

VIRTUS reflects the key role that our universities continue to play in helping Singapore achieve its goal to be one of the most research-intensive, innovative and entrepreneurial economies in the world. Last month, our Prime Minister announced Singapore’s new strategies in research, innovation and enterprise for the period 2011 to 2015. Over the next five years, the Government will set aside $16.1 billion for R&D funding. Research and innovation are critical elements in our drive to boost the competitiveness of our industries, and prepare our economy for the next phase of growth. VIRTUS is an excellent example of the coordinated effort between our economic agencies and universities, to develop the skilled manpower to support crucial industries in Singapore.
Strengthening Singapore’s position as a key electronics R&D hub in Asia

In this digital era, the use of electronics is ubiquitous and an integral part of our everyday lives. And, analog and mixed-signal ICs play a role in virtually every electronic design by converting physical signals such as pressure, sound, light and temperature from the real world into the binary code of 1s and 0s that power digital electronics. This is particularly important in areas of power management and energy harvesting.

With rapid technological advancements, electronic devices have become ever more power-hungry due to increased functionalities in a single device, the iPhone being a case in point. Power management is, therefore, not only more complex, but also a crucial determinant of the performance of electronic devices. According to Gartner Inc, a leading provider of market intelligence for the information technology sector, revenue from power management ICs totalled US$7.4 billion in 2009 and is expected to grow to US$12 billion in 2014.

Similarly, the ability to capture and store energy from external sources for future use is much sought after. As the demand for green devices and applications grows, so too will the adoption of energy
harvesters aimed at recovering and transforming wasted incidental energy into useable forms.

Recognising the growing importance of analog and mixed-signal IC design, NTU’s VIRTUS aims to train at least 50 Masters of Engineering (MEng) and 50 PhD postgraduate students in analog and mixed-signal IC design over the next five years. Given the global shortage of good analog and mixed signal IC design engineers, the development of a well-trained pool of IC designers through VIRTUS will, in turn, help to strengthen Singapore’s position as a key electronics R&D hub in Asia.

For the past 40 years, the electronics industry has been a key pillar of the Singapore’s economy. In 2009, the electronics manufacturing output totalled about S$64 billion of which semiconductors contributed 58 per cent. In the first eight months of this year, the electronics manufacturing sector output grew 51.4 per cent year on year, on the back of the global economic recovery. Semiconductors posted the largest year on year gain at 82.8 per cent. In fact, the strong growth in the electronics industry in 2010 had been largely driven by the semiconductor companies, many of whom undertake IC design activities here.
Semiconductors accounted for 54.6 per cent of the total R&D expenditure within the Singapore manufacturing sector in 2008. Today, Singapore has about 40 IC design companies, and plays host to the R&D activities of nine of the world’s top 10 fabless companies. Of the 1,100 IC design engineers in Singapore, 44 per cent specialise in analog, mixed signal and RF IC design. IC design and semiconductor R&D is a fast growing field in Singapore. More than 850 skilled R&D jobs were created in the semiconductor industry over the past two years, many of which were IC design positions.

**Growing IC design activities creates rewarding R&D careers in Singapore**

As we continue to build on our strengths in the semiconductor sector and train a larger pool of high quality talent through centres such as VIRTUS, more technology companies will be attracted to our shores. In tandem with this trend, more rewarding R&D jobs in analog and mixed signal IC design will be created.

VIRTUS is an excellent model of private-public sector collaboration. I am happy to hear that within just the first month of VIRTUS’ operations, it has already lined up six of such industry collaborations with companies such as Infineon and MediaTek. The collaborations
will involve funding for projects and co-funding of postgraduates with EDB. Companies in turn can tap on VIRTUS’ talent pool to recruit IC design engineers with postgraduate qualifications and experience in working on industry-linked projects.

**Conclusion**

On this note, let me congratulate the management and the staff of NTU on this significant and exciting milestone. I wish you all much success. It is now my pleasure to declare NTU’s VIRTUS, the IC Design Centre of Excellence open.

Thank you.