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Subject: [Embargoed] Speech by Mr Chan Soo Sen, 26 Jun 2000, 9am

Singapore Government

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SPEECH BY MR CHAN SOO SEN, PARLIAMENTARY SECRETARY (PRIME MINISTER' S OFFICE & MINISTRY OF HEALTH), AT THE OPENING CEREMONY OF THE 7TH ASIA PACIFIC ELECTRON MICROSCOPY CONFERENCE AT THE SINGAPORE INTERNATIONAL CONVENTION AND EXHIBITION CENTRE AUDITORIUM, SUNTEC CITY (LEVEL 2) ON MONDAY, 26 JUNE 2000 AT 9.00 AM

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Theme: Importance of electron microscopy in the life and physical sciences

Good morning,
Prof Archie Howie
President of the International Federation
of Societies of Electron Microscopy

Assoc Prof Mary Ng Mah Lee
Chairperson

7th Asia Pacific Electron Microscopy Conference
Organising Committee

Distinguished Guests

Ladies and Gentlemen

I am delighted to join you here this morning at the opening ceremony of the 7th Asia Pacific Electron Microscopy (APEM) Conference. I would like to extend a warm welcome to all the participants, especially those who come from overseas. I wish you a pleasant stay and good exchanges.

2 This is the second time that Singapore has hosted the APEM Conference. The 3rd APEM Conference was held here in 1984. This 7th Conference has attracted more than 500 participants from some 34 countries, which reflects the strong interest in microscopy and its importance.

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3 The world of science is intriguing. When I was young, I dreamed of becoming a physicist. There were two possible but opposite directions for me: astro-physics and micro-physics. The former is characterised by huge distances, and the latter by very small measurements. I first fell in love with astrology, since far away stars seem so mysterious, and the prospect of travelling in the universe seemed so cool. But then one day, I was told that there was a barrier: nothing travels faster than light. So the dream of exploring the edge of the universe will be an impossibility.

4 So I tried micro-physics and micro-biology, and soon became interested in the history of microscopy. This started from the days of Anthony van Leeuwenhoek, who produced the first drawing of bacteria using a single-lens microscope more than 300 years ago. In 1925, E B Wilson, the great cell biologist, wrote: "The key to every biological problem must finally be sought in the cell". But then the barrier of light comes in again. The conventional microscopes are not useful in viewing objects of similar size as the wave-length of visible spectrum, such as the fine interior details of the cell.

5 But fortunately for the micro-sciences, you managed to overcome this light barrier. In 1931, the first electron microscope was invented by Max Knoll and Ernst Ruska in Germany. The first uses of the electron microscope were related to material science applications. However, from the late 1950s and early 1960s, the electron microscopes became popular with biologists. The recognition of the importance of this instrument and its wide application in the life and physical sciences earned Ruska and his team a Nobel Prize in Physics.

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6 Then came the barrier in my interest in science. After seeing the light barriers in astro-physics and micro-sciences, I saw the light and worked in administration and management. For more than 20 years, I never looked back. However, fate has brought me to the opening of this APEM Conference today, staring electron microscopy in the face.

7 Today, electron microscopy continues to be important for studying the

structure and function of cells and their components. Electron microscopy enables the correlation of structure and function. It has also contributed greatly to our understanding of diseases. It is a valuable diagnostic tool.

8 The life sciences industry in Singapore is expanding and will contribute significantly to the growth of Singapore's knowledge-based economy. Over the next few years, research in the life sciences will expand in areas such as genomics, structural biology and bioinformatics. Microscopy techniques will be a key research tool in many of these fields.

9 The use of the electron microscopes is not limited to the life sciences. They are also employed in industry for quality control, as well as in the design of better materials and in the study of new materials and polymers. We are experiencing today, much greater cross-fertilisation between the life and physical sciences. Bioengineering is a good example of such cross-fertilisation, where engineers, scientists and clinical researchers find common ground to collaborate and share their expertise, in areas ranging from the development of new heart valves and artificial livers to better water purification technology. With the very lively material, microelectronics and semiconductor industries in place in Singapore, the use of microscopy in these areas will continue to grow.

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10 This Conference has received strong support from the commercial sector. There were also generous donations towards travel scholarships

for some 160 participants. The strong presence of more than 30 companies, which will showcase their products relevant to microscopy, reflects interests in and commitment to the development of microscopy technology in the Asia Pacific region. I am confident that your confidence in the region is well placed.

11 I wish you an exciting and stimulating time, rich in professional exchanges and friendship renewals. I congratulate the Organising Committee for its efforts and good work in organising this Conference. It is my pleasure to declare the 7th Asia-Pacific Electron Microscopy Conference open.

Thank you.

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