



*For immediate release*  
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### **Prof. Chang of HKUST Explains How the Lung Works**

"How does the Lung Work: An Engineering View" was the topic of a public lecture at the Hong Kong Science Museum last Sunday. Professor H.K. Chang, Founding Dean of Engineering and Professor of Chemical Engineering in the Hong Kong University of Science and Technology, explained that the human lung is a wonderfully efficient creation from an engineering point of view.

As Professor Chang explained, the human lung normally conducts some ten litres of air flow and five litres of blood flow per minute. During strenuous exercise, air flow can reach 100 litres per minute and blood flow can reach 30 litres per minute.

The air and blood come into contact inside the lung over a thin film of less than one micrometre thickness, thin enough to allow oxygen in the air to pass into the blood stream and carbon dioxide to pass from the blood into the air stream. If spread out, this thin film or exchange surface could cover several tennis courts. The entire tree-like conducting airways and all of the blood vessels together with the large exchange surface, are packed inside the chest of a human being. This "machine" must work constantly from the moment an infant is born until the person dies.

Professor Chang is a world-renowned authority on the flow dynamics and transport processes in the lung. He is also holder of one patent and author of more than 100 scientific articles.

Professor Chang has served on the editorial boards of two learned journals and is active in several professional societies. He is a Founding Fellow of the American Institute of Medical and Biological Engineering and a member of the American Institute of Chemical Engineers, the American Physiological Society, and the American Society of Civil Engineers. A member of the Board of Directors of the Biomedical Engineering Society of the United States, Professor Chang also served as President of the Society between 1989 and 1990.

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