

Appraisal of Professor Markku KULMALA
of the University of Helsinki

for his award *Doctor et professor honoris causa* from the Eötvös Loránd University

Professor Markku Tapio Kulmala was born in 1958 in Finland. He graduated in 1983 and obtained his Ph.D. in 1988 both from the University of Helsinki. He has been the head of the Division of Atmospheric Sciences, Department of Physics of the University of Helsinki since 2001. In his nearest research environment, professor Kulmala leads a research group in Aerosol and Environmental Physics consisting of 60 people. He also leads the Finnish Centre of Excellence in Physics, Chemistry, Biology and Meteorology of Atmospheric Composition and Climate Change, which consists of 150 scientists. He was visiting professor at the University of Vienna and University of Lund, the King Carl XVI Gustaf's visiting professor at the University of Stockholm. He is member of the editorial boards of several prestigious scientific journals.

Professor Kulmala is a world leader in atmospheric aerosol science and one of the founders of terrestrial ecosystem meteorology. His major research interests cover the theory and mechanism of the new aerosol particle formation and growth processes in the atmosphere, their experimental studies, and the interactions among aerosol, clouds, climate and biosphere. Professor Kulmala has created a research program including continuous long-term atmospheric observations, global modelling and deep theoretical and experimental understanding of atmospheric cluster and aerosol dynamics. During his investigations, he has proposed that atmospheric clusters are crucial for new particle formation, and that they exist in the real atmosphere. He has shown that atmospheric nucleation takes place practically all around the world. These authoritative results have led to widespread recognition of the importance of biogenic aerosol formation mechanisms, and research concerning their role in climate change is now performed by several research groups in the world. In his pioneering research, professor Kulmala is working from the nano/molecular scale to the global scale. He published over 660 original research papers including 8 articles in *Nature* and 11 articles in *Science* in this field, and received more than 11 thousand independent citations for these publications. According to the Web of Knowledge, professor Kulmala is the most cited researcher in the field of geosciences since May 2011. His Hirsch index is 63. Professor Kulmala's research work and results were acknowledged with several scientific awards and prizes including the Smoluchowski Award of the Association for Aerosol Research (Germany and Austria) in 1997, the Finnish Science Award in 2003, the International Aerosol Fellow Award of the International Aerosol Research Assembly in 2004, the Wilhelm Bjerkenes Medal of the European Geosciences Union in 2007, Fellow of the American Geophysical Union in 2009, and the Fuchs Memorial Award of the Association for Aerosol Research, the American Association for Aerosol Research, and the Japan Association of Aerosol Science and Technology in 2010. He was awarded by *Doctor Honoris Causa* from the University of Stockholm in 2005, and from University of Tartu, Estonia in 2008.

Professor Kulmala has a successful experience in university teaching and advising Ph.D. students. He supervised 47 master and 48 doctoral students, and plays a key role in an international post-doctoral course on atmospheric aerosols. He personally and the division led by him have a long tradition of scientific co-operation with the various departments and research groups of the Faculty of Science of the Eötvös Loránd University. Several researchers, graduating and Ph.D. students took part in the direct inter-university exchange programs and other research projects, and the results of the joint research were published in several articles.

It is believed that professor Kulmala's expertise, leadership and personal skills will contribute to and deepen the existing and excellent relationship between the Eötvös Loránd University and the University of Helsinki, and will further promote our co-operation in the field of both education and science.

April 2012