# INTRODUCTION TO THE JOHANNES LINNEBORN PRIZE AND THE 2014 WINNER LAUDATION

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Chairman of the Nomination Committee

The Johannes Linneborn Prize was established in 1994 on behalf of the European Commission by Dr. Wolfgang Palz to honor a European individual for an exceptional life-time contribution to the field of sustainable energy from biomass. In exceptional cases the award can be granted to a non-European and this will happen today. It is not a reward for scientific excellence only but also technical and managerial merits are appreciated. This prestigious award was connected to the name of Johannes Linneborn, a German biomass pioneer and businessman and the manufacturer of more than 500,000 Imbert small-scale wood gasifiers used to fuel cars, when fossil liquid fuels were scarce. His ideal was a world in which mankind lives in harmony with nature with optimal exploiting of biomass for energy and materials. On the picture you see Mr. Linneborn together with the young Dr. Palz.

From a long list of excellent candidates the Prize Committee selected as winner of the Linneborn Prize 2014:

*Professor Yuan Zhenhong*
*Director of the Laboratory of Biochemical Conversion*
*and Chief Scientist of the Research*
*Center of Biomass Energy*
*Guangzhou Institute of Energy Conversion*
*Chinese Academy of Sciences*

The prize is awarded to him for his outstanding contribution and leadership for over 30 years in research and development of biomass energy in China, ranging from fundamental work to actual realization of industrial operation. He proved to be an excellent scientist, teacher and inventor on top of that a founder, pioneer, advocate and architect for biomass energy in China. He has promoted and reinforced communication and collaboration between biomass activities in China, in the European Union and other parts of this world.

Dr. Yuan Zhenhong received his initial scientific education at the Microbiology Department of the Liaoning University in Shenyang, China (1978-1982) and obtained his PhD in Chemical Engineering at the East China University of Shanghai. After a very successful career as assistant professor at the Liaoning Institute of Energy Resources (LIER) he rapidly became Director of the Biomass Energy Department (1987) and later Director of the Beijing Office of the China Biomass Development Centre and in 1997 Professor and Secretary General of that centre. From 2002 on he is Professor and Director of the Laboratory of Biochemical Conversion and Chief Scientist of the Research Centre of Biomass Energy, Guangzhou Institute of Energy Conversion of the Chinese Academy of Sciences.

The scientific work of Prof. Yuan is remarkably broad. It covers a wide range of subjects but he always connects the fundamental studies to (potential) applications which makes his academic work of great societal significance. Subjects treated in his R&D are: (bio)chemical conversion technology for the production of bio-diesel, bioethanol (first and second generation), biogas from anaerobic digestion of biomass materials; biomass energy resources (energy plants and algae), biomass energy development strategies and techno-economical evaluation, development strategies, roadmaps, etc.

A large amount of projects (> 100) have been carried out by him or under his supervision: resulting in many reports, authoritative reviews, 155 scientific journal publications and 5 books.

His creativity is moreover reflected in many original inventions (41 patents). These works cover the full range from fundamental research such as enzyme production and reaction mechanisms and pathways (e.g. for cellulose hydrolysis/de-polymerization) to applied process steps (e.g. like hot liquid water pretreatment of biomass). Apart from his activities as an outstanding scientist and team player in the research groups, he showed inspiring leadership both in directing the research and acquiring and organizing the necessary means to carry out this work. His laboratories now, the largest of its kind in China, incorporate 42 researchers and 20 graduate students including seven sub labs with high tech equipment: labs of microbial genetic breeding, feedstock pretreatment, microbial physiology and biochemistry, micro-organisms isolation and screening, fermentation and bioreactor, separation and purification, system integration and pilot studies and a consulting center.

In these labs, he and his team are developing innovative processes whereby energy crops, agricultural wastes and other biogenic materials are converted into liquid, gases and solids for production of electricity, heat, transport fuels and a wide variety of chemicals. His activities also include the stimulation/participation in the implementation on industrial scale. As an example, he was involved in the realization by industrial corporations of several biodiesel plants: one in Wenzhou (100,000 ton/y) two in the Fujian province (500,000 ton/y) and in Vietnam (3300 ton/y).

As a visionary organizer and manager Prof. Yuan contributed a lot to the strategy of China in the area of biomass energy by creating the biomass energy parts in the successive 8th, 9th, 10th and 11th five year plans of the nation and he was responsible for the biomass energy programs management of the nation from 1991-2011.

Moreover, he was responsible for the biomass part in the national medium and long term science and technology development plan (2006-2020). Prof. Yuan is an active member and a leader of the biomass energy community:

Director of the Biomass Energy Committee China Renewable Energy Society, Standing Director of the China Renewable Energy Society, Vice Director of the China Biogas Association, Vice Director of the Expert Group of Energy Technology for the “National Program of High Technology Research and Development”. Moreover, he participates in the editorial board of Scientific Journals like <Acta Energiae Solaris Sinica> and <Renewable Energy Resource>. He is also a

stimulating organizer of international conferences and forums like the International Conference on Biomass and Energy Technologies (2008, 2010, 2012) and many more.

His work is widely recognized and Prof. Yuan received a long list of awards (>8) and recognitions such as the Excellent Teacher Award by the Chinese Academy of Sciences (Guangzhou 2008, the Zhuliyuehua award 2009), The 1st Price of the Progress of Science and Technology (Guandong Province 2013) and many more.

Dear professor Yuan, in your role as Director of BEC you excellently managed this organization and stimulated and reinforced the communication between China, the EU and the rest of the biomass world.

The committee of the Linneborn Award is particularly happy that you are the winner of this prestigious price of 2014 because of your outstanding contribution to the R&D in the field of biomass energy and your achievements, continuous efforts for international collaboration. We are specially happy that the winner of the award comes from China, a country that has in its rich history provided the human civilization with so many beneficial inventions and played a very important role in this biomass field and is bound to take a further leading role in the future. Prof. Yuan, I am certain that the whole international biomass community will join us in our congratulation on this high distinction.