

Invited Seminar Announcement  
Thursday Sep 2<sup>nd</sup>, 10:00 - 11:30 am, 3-370

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## The Opportunity and Challenges of Biomass Energy in China

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### ABSTRACT

As the second largest energy consumer in the world, China's coal-dominant energy structure causes serious environmental problems. Biomass energy is an important measure to improve its energy structure, assure energy security, protect the environment, and realize the sustainable development of rural economy.

The first part of this presentation introduces the biomass resources, its current utilization as well as the long-term technology development roadmap in China including biogas utilization, biomass power generation system, and biomass to liquid fuel utilizations. Opportunities and challenges of biomass energy development in China will be discussed.

The second part of this presentation introduces the researches and practices on biomass thermal-chemical conversion technologies conducted in Zhejiang University. (1) Based on the work on mechanism of straw combustion and small to bench scale experiments, a new advanced technology has been specially designed for high-alkali biomass combustion in CHP scale by Zhejiang University. The demonstration of this CFB straw combustion technology has been conducted in Jiangsu province, China. (2) Gasification provides a competitive way to convert the diverse, highly distributed and low-value lignocellulosic biomass to syngas for combined heat and power generation and synthesis of liquid fuels. With Developed Biomass Gasification Technology, a medium heating value gas (MCV) has been supplied to households in Wenzhou Demo Plant Project. On the other hand, the high temperature gasification of biomass was also investigated. (3) The utilization of crude liquid bio-oil produced from biomass fast pyrolysis is quite limited due to its poor properties. A novel and effective route for production, separation and upgrading of bio-oil proposed and tested by Zhejiang University will also be introduced.

### BIOGRAPHY

Dr. Zhongyang Luo is the Dean of the Department of Energy Engineering at Zhejiang University. He is also the Director of the State Key Laboratory of Clean Energy Utilization in China and Executive Associate Director, Institute of Sustainable Energy at Zhejiang University. Dr. Luo's research interests include clean coal combustion, biomass and bioenergy.