报告题目: DEVELOPMENTS IN FLUIDIZED BEDS: SOLID FUEL CONVERSION AND CO2 REDUCTION

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简介:

Abstract: A summary is given on the history of development of fluidized bed conversion (combustion and gasification) of solid fuels. It first includes gasification, following a line of development from the Winkler gasifier until the most recent designs. In addition to pulverized combustors, the most important fuel converters for combustion of solid fuel are circulating fluidized bed (CFB) boilers, whose design is becoming mature and the increment in size is the presently most important task. The very new aspects of these conversion devices are related to CO2 removal. Methods with this purpose involving fluidized bed (oxyfuel combustion, chemical looping combustion, and calcium looping cycle) are briefly surveyed with emphasis on CFB. The last two types of plant consist of twin fluidized-bed also called dual fluidized-bed. This group of devices also includes indirect gasifiers.

报告人介绍:

Bo Leckner ble@chalmers.se Department of Energy and Environment Chalmers University of Technology 41296 Göteborg, Sweden Graduated in Mechanical Engineering at Chalmers University of Technology in 1962 and

presented his **doctor thesis** *Radiation in gas fired furnaces* in 1972.

ACTIVITIES

In 1972 he got his habitation (docent) and served as acting professor of Energy Conversion until he was officially appointed to the professorship in 1982.

Professor Leckner has been at Chalmers University of Technology since then, with the exception of one year spent at Moscow Energy Institute, Soviet Union.

He is an honorary professor of Central China University in Wuhan, China and guest professor of the South-East University of Nanjing, China and Tokyo University of A&T, Japan.

Leckner is an experienced lecturer and has had courses, in addition to those of his own university in a great number of other universities: The Danish Technical University, Denmark, Helsinki Technical University, Finland, Universita degli Studi de Federico II in Napoli, Italy, Indian Institute of Technology, Madras, India, Tsinghua (Beijing), Huazhong (Wuhan) and Dongna (Nanjing) Universities among others in China. Universidad del País Vasco, Bilbao, Universidad Menendez Pelayo Madrid, Universidad Carlos III, Madrid, Spain. Nordic Graduate School of Biomass Conversion, Norway, Denmark, Finland and Sweden.

The courses have been directed to general audiences, as well as to graduate students (Doctor students) and undergraduate students in the various universities.

RESEARCH AREAS

From the end of the 70's, Professor Leckner has been working with various aspects of combustion of solid fuels. He has participated in the design of two large-scale research facilities operated at Chalmers University (12 and 16 MW fluidized bed combustors for combustion of a variety of fuels: coal, biomass, waste, sludge, etc.).

The research work concerns mainly fluid-dynamic, thermal and chemical aspects (emissions) of fluidized bed combustion and gasification, but the work also covers conversion of solid fuels in general and biofuels and waste in particular. During last years the research has been focussed on CO₂ reduction involving fluidized bed.

AWARDS

He has got several awards, among them:

In 1997 from the American Institute of Mechanical Engineers, for his work in fluidized bed combustion.

In 2001 from Lurgi and the Circulation Fluidized Bed Conference, for excellence in engineering with relation to circulating fluidized beds.