

Preface:

Dear Colleagues and Friends,

The 2017 International Conference on CFB Technology (CFB-12) is held in May 22-26, 2017 in Krakow, at AGH University of Science and Technology, Poland. The event covers a wide range of topics in coal science and technology and in areas of renewable energy and associated technologies.

CFB-12 is the 12th conference of a series and follows the previous successful International Conferences on Circulating Fluidized Beds: CFB-1, 1985 Halifax, Canada; CFB-2, 1988 Compiègne, France; CFB-3, 1990 Nagoya, Japan; CFB-4, 1993 Hidden Valley, USA; CFB-5, 1996 Beijing, China; CFB-6, 1999 Würzburg, Germany; CFB-7, 2002 Niagara Falls, Canada; CFB-8, 2005 Hangzhou, China; CFB-9, 2008 Hamburg, Germany; CFB-10, 2011 Sunriver, USA; CFB-11, 2014 Beijing, China.

CFB-12 addresses both fundamental and applied aspects of circulating fluidized beds and other fluidized bed systems and cover 5 topics: combustion of solid fuels, flue gas emissions, trace pollutants and ash composition and behavior.

In contrast to the leading topics of CFB-1, 1985 Halifax, the development of the understanding of CFB processes can be readily seen. For example, 30 years ago, there was a debate whether clusters existed in CFBs, while now this phenomenon can be examined by computer simulation. Also, applications of CFB are constantly being extended due to its superior performance in gas-solid contact (used outside combustion, e.g. in catalytic processes).

The provision of cheap and reliable energy supply with low CO₂ emissions and reduced air pollution should continue to be a priority both at government and community level for the foreseeable future.

Both fossil fuels and renewables should be important for future energy supply mix. In particular, coal will probably remain an important energy source for many parts of the world. With increasing concern about air quality, the development of clean coal technologies has now become more urgent than ever. Effort must be made both to develop and deploy commercially feasible low emission renewable energy technologies.

Over 250 delegates from 37 countries will attend the conference in Krakow. More than 300 papers have been submitted which will be presented either orally or as posters.

All manuscripts submitted are original, not under consideration for publication elsewhere, and not previously published. All authors make their methods transparent and to focus on interdisciplinary policy implications, in-keeping with the aims and scope of the proceedings.

As the conference proceedings are devoted to all aspects of processing and utilization of fuel, deals with the scientific and technological aspects of converting fossil and renewable resources to clean fuels, the proceedings provide their diverse readership with basic coverage of major advances in all aspects of fuel use and of any developments with significant consequences across associated sub-disciplines. Papers advancing new insights on fundamental aspects or theories contain convincing arguments that they really present new predictions or interpretations, distinct from existing the accepted views and not contradicted by experiment.

The presented papers cover important results, leading to substantial advancements or opening new fields, or new areas of research, or solving or taking a crucial step towards solving – a critical or outstanding problem, and thus helping progress in the field. The papers provide very strong evidence that the work was new, proposals feasible, the work was new and / or could lead to valuable new research. Papers are of broad interest, i.e. a major advance in a field of CFB or with significant implications across subfield boundaries.

On behalf of the Steering Committee Members and local organizing committee, I cordially welcome the researchers, technology developers, policy makers, fluidized bed unit operators, students and others from all over the world in the wonderful city Krakow and AGH University of Science and Technology.

Wojciech Nowak
Chairman of the Conference