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# Thirty-Fifth Annual INTERNATIONAL PITTSBURGH COAL CONFERENCE

**October 15-18, 2018**

## Call for Papers

**Abstracts Deadline: March 31, 2018**

**Clean Coal-based Energy/Fuels and the  
Environment**



**New Century Grand Hotel Xuzhou  
Xuzhou, Jiangsu Province, CHINA**



**Hosted By**



**中国矿业大学**  
CHINA UNIVERSITY OF MINING AND TECHNOLOGY



**University of  
Pittsburgh**

# Program Topics

## 1. Gasification Technologies

- Industrial Applications, Economics and Environmental Issues
- Underground Coal Gasification (UCG)
- Synthesis Gas Cleanup
- Gasification Science and Modeling
- Novel Classification Technologies and Concepts
- Co-Gasification of Coal and other Carbon-Based Fuels
- Systems Analysis
- Low Rank Coal Utilization
- Polygeneration

## 2. Clean Coal Demonstration and Commercial Projects

- Existing and planned clean coal major demonstrations (process and technology demonstrations, i.e. IGCC, SCPC, USC, SNG, CTL, Oxy-combustion, etc.)
- Existing and planned clean coal commercial projects (fully integrated systems) and trends
- Industrial scale and utility scale carbon capture and carbon storage projects (i.e. >250,000 tons/year of CO<sub>2</sub>)
- Lessons learned from technology demonstrations and first commercial deployments
- Intermediate scale demonstrations (i.e., 25-50 Mwe)
- Commercially available technology reviews/updates (Vendor reports on advanced technology commercial offerings)
- Financing, business and risk management strategies for major demonstration and commercial projects, including first-of-a-kind projects with or without carbon capture and storage
- Regulatory impacts on major demonstration and commercial projects
- Insurance strategies for CO<sub>2</sub> capture and geologic Storage

## 3. Combustion Technologies

- Industrial Applications and Environmental Issues
- Flue Gas Clean Up and Ash Chemistry

- Combustion Technology Advancements (Pulverized Coal, Fluidized Beds, Co-Firing, etc.)
- Novel Combustion and Cycle Technologies (Oxyfuel, Chemical looping, CO<sub>2</sub> Cycles, etc.)
- Modeling and Economic Evaluation
- Basic Studies, Materials, and Instrumentation

## 4. Clean Coal and Gas to Fuels

- Coal-To-Liquids Fuels, CTL (Direct Liquefaction, Fischer-Tropsch, MTG, DME, etc.)
- Gas-To-Liquid, GTL
- Substitute Natural Gas (SNG)
- Hydrogen Production
- Syngas to Power (Gas Turbines, Fuel Cells)
- Syngas to Chemicals/Materials

## 5. Carbon Management

- Pre-Combustion Capture
- Post-Combustion Capture
- CO<sub>2</sub> Sequestration (Monitoring, Mitigation and Verification; Storage: Depleted Oil/Gas Reservoirs, Aquifers, Basalt, Coal Bed Methane, etc.)
- Transportation Infrastructure Issues
- Legal and Regulatory Issues

## 6. Coal Science

- Chemistry
- Geoscience/Coal Resources
- Trace Elements/Emission
- Coal Processing
- Coal Preparation
- Coal Utilization
- Coal Utilization By-Products (Ash, Fertilizers, etc.)

## 7. Coal Mining

- Coal Seam and Coal Mine Methane/Gas Management in Coal Mines
- Geological Issues Related to Coal Mining/Properties of Coal-Measure Rocks/Ground Behavior
- Coal Mining and Reclamation
- Mine Safety

# Program Topics (cont.)

## 8. Coal Bed Methane and Shale Gas

- Geology
- Exploration
- Resources and Reserves
- Drilling and Production
- Completion Methods
- Gas Quality and Processing
- Environmental Impacts
- Abating Methane Emissions from Gas and Coal Production

## 9. Power Plants

- Thermodynamic and economic analysis
- Boiler technology and design
- Steam turbine technology (reheat, regeneration, steam seals, blade aerodynamics)
- Gas Turbines technology (syngas or hydrogen-rich combustion, compressor aerodynamics, turbine blade heat transfer, materials)
- Heat Recovery Steam Generator (HRSG)
- Condenser design and operation
- Cooling tower design and improvements
- Water treatments
- Post combustion gas cleaning
- IGCC integration and components (ASU, gasifiers, syngas cooling, gas clean up, water gas shift, and desulfurization)
- Oxy-fuel combustion plants
- Organic Rankine Cycle (ORC)
- Combined Heating and Power (CHP)
- Energy storage (CAES, ice)
- Power Plants Operation and Maintenance experiences
- Any other or innovative new cycles

## 10. Sustainability and Environment

- Energy Production and Water Use – Conservation and Recycle
- Life Cycle Analysis (LCA) or Energy Production Systems
- Energy Production on the Environment
- Energy Sustainability – Efficiency and Conservation to Reduce GHG
- GHG, Inventory Protocol, Legal and Regulatory Considerations, Credits

## 11. Rare Earth Elements (REE) in Fossil Fuel Derived Solids and Liquids

- Rare earth elements in coal and petroleum fuels
- Rare earth element chemistry in power systems
- Mining waste
- Fly ash and slag
- Separation methods
- Rare earth geochemistry
- Measurement and characterization: challenges and solutions
- Modeling
- Mining and recovery methods in industry
- Status of supply and trade
- Emerging issues

## 12. Coal Ash Management

- Ash pond reclamation
- Extension of landfills over ash ponds
- Long-term recovery of materials from ash ponds
- Secondary uses of closed ash ponds
- Coal Combustion Residuals (CCRs) landfill management
- Beneficial uses of CCRs
- Rare earth element extraction from CCRs
- Role of CCRs for CO<sub>2</sub> storage

## 13. Value-Added Products from Coal

- Nano-carbons
- Fibers
- Composites
- 3D Printing
- Additive Manufacturing
- Electrodes
- Capacitors
- Construction Materials
- Concretes
- Thermal Insulators
- Activated Carbons
- Tars, Cokes and Pitches
- Chemicals

# Call for Papers

## 35<sup>th</sup> Annual International Pittsburgh Coal Conference

The Conference (PCC) will be held October 15-18, 2018 at the New Century Grand Hotel Xuzhou (1 Huxi Rd, Quanshan Qu, Xuzhou Shi, Jiangsu Sheng, China, 221006).

The PCC is the "premier" annual event focusing on all aspects of coal, energy, environment and sustainable development. It provides a unique forum for in-depth exchange of technical information and policy issues among all participants from industry, government and academia throughout the world. China has made significant strides and progress on coal utilization and related industries, such as coal power plants and coal to liquids and chemicals. The PCC committees kindly invite you to submit papers and attend this important event in Xuzhou.

### Conference Theme:

Environmental issues and technologies surrounding the continued clean coal utilization and the development of coal-based energy and fuels to support the future energy market.

### Abstracts Submission

Abstracts of potential papers may be submitted in all program topics.

To qualify for acceptance, please email a one-page abstract to [ipcc@pitt.edu](mailto:ipcc@pitt.edu).

**The deadline is March 31, 2018**

The abstract must include sufficient and adequate information for evaluation by the Technical Program Committee of the conference.

An abstract template is available here:

<http://www.engineering.pitt.edu/Sub-Sites/Conferences/PCC/Library/2018-Conference-Docs/2018-Abstract-Template/>

### Note to Authors

The Pittsburgh Coal Conference does not provide any financial support to contributing authors. Benefits from participation include the privilege of presenting papers at the conference and publication of the papers in the Conference Proceedings for worldwide distribution.

### Conference Proceedings

The proceedings of the PCC-2018 will be published online after the conference.

For a paper to be included in the conference proceedings, a paid registration of the presenter must be received and a complete manuscript in English, must be sent by email to the conference office prior to the conference date.

Proceedings of the previous International Pittsburgh Coal conferences are available and can be purchased online: [www.pccpitt.edu](http://www.pccpitt.edu)

### Oral Presentations & Posters

Each author is allowed 20 minutes including a 5 minute Q&A period. The conference will provide computers and projectors for PowerPoint presentations. Video and other equipment may be rented by the Conference at the speaker's expense.

Conference Website: <http://www.pccpitt.org>

**Please contact the Conference Coordinator with any questions.**

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