

Programme

Monday, 18 May 2009

08:30 - 09:00 **Grosser Saal**

Opening Ceremony and Welcoming Addresses

09:00 - 10:00 **Grosser Saal**

Keynote Session I

10:00 - 10:30 **Foyer**

Break

10:00 - 17:50 **Saal 4**

Posters

10:30 - 12:10 **Grosser Saal**

Gasification Technologies

Siemens fuel gasification / Mr Anton Haberzettl
The CCGicms_reg; technology of CHOREN / Dr. Christoph Kiener
PRENFLO PSG and PDQ - based on decades of gasification lessons learned / Dipl.-Ing. Karsten Rick Radtke
Outline of the waste liquidation possibilities by their gasification / Ph.D. Petr Mika
Lurgi's FBDB Gasification - recent development and Project update / Dr. Holger Schlichting

10:30 - 12:10 **Saal 1**

IGCC - Experience and Progress

ELCOGAS: R&D ACTIVITIES TOWARDS ZERO EMISSIONS IGCC PLANTS / Dr. Pilar Coca
Technology advances in IGCC with CCS / Dr. Mark Prins
Towards 2nd Generation of IGCC plants: Nuon Magnum Multi-fuel Power Plant / Robert de Kler
TECO to Today: An IGCC Design Improvement Case Study / Cynthia Coleman
17 YEARS OF EXPERIENCE GAINED FROM THREE GASIFICATION PLANTS OPERATING IN ITALY / Mr. Vincenzo Fabio Ciccotosto

10:30 - 12:10 **Saal 2**

Carbon Capture Issues

What have we learnt from CCS Demonstration projects / Mr John Gale
Social acceptance of carbon capture and storage in Germany / Dr. Diana Schumann

The U.S. CCS Experience: From Resistance to Acceptance to Support / Ms. Naomi Pena

Emission trading; incentive or obstacle to funding Carbon Capture and Storage demonstration projects? / Mr John Kessels

Application of possible efficiency upgrades and partial capture technologies to existing coal-fired power plants / Ms Deborah Adams

12:10 - 13:40 **Saal 5**

Lunch

13:40 - 15:20 **Grosser Saal**

Gasification - Experimental Investigations

Research equipment for coal and ash/slag analyses at the IEC / Dipl.-Min. Mathias Klinger
PERFORMANCE ANALYSIS OF UPDRAFT AIR-BLOWN GASIFIERS FED BY OXYGEN AND CO2 OR RECIRCULATED SYNGAS MIXTURES / Ing Vittorio Tola
The Use of Bench Scale Data in Understanding Coal Performance in a Pilot Scale Gasifier / Dr Daniel Roberts
Investigation of trace compound formation in a partial oxidation process / Br♦ggemann
The Sotacarbo coal gasification experimental plant / Dr. Alberto Pettinau

13:40 - 15:20 **Saal 1**

IGCC - Engineering and Economic Evaluation

EPRI IGCC Engineering and Economic Evaluations / Ronald Schoff
IGCC power plants with and without CCS – developments to meet market needs / Juergen Karg
Large Scale CCS Demonstration – Status and Outlook of RWE's 450 MW IGCC Project / Werner Renzenbrink
Project results of COORIVA – Constructability investigations on a German Reference IGCC with CO2-Capture for 2015 / Dipl.-Ing. Martin Graebner
Cost and Performance Baseline for Fossil Energy Power Plants Volume 3: Low-Rank Coal to Electricity / Mr. Jeffrey Hoffmann

13:40 - 15:20 **Saal 2**

XtL Technologies

An alternative route of coal to liquids applying Methanol to Gasoline (MTG) technology / Max Heinritz-Adrian
From coal gas to liquid products - the Topsoe TIGAS Technology / Mr Poul Erik H♦jlund Nielsen
Technical and economical evaluation on the application of coal-to-liquids (CTL) technologies in South-West Sardinia / Dr. Alberto Pettinau

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Technical and Economic Assessment of a Small Scale Steam Hydrogasification Process with Fischer-Tropsch Liquids Facility with a Coal-Wood Feedstock / Dr. Arun SK Raju
High integrative, CO₂ negative, high efficient power generation (ICONE power) from ash rich biomass coupled with production of algae based bio oils as well as biochar at Hainhaus/Odenwald using the BtVB process. / Prof. Dr. Andreas Hornung

13:40 - 15:20 **Saal 3**

Combustion and Chemical Looping

Combustion characteristics of high-ash South African coal reserves. / Professor Raymond Everson
Combustion simulations of predried Greek lignite at experimental and industrial scale facilities / Michalis Agraniotis
Syngas Combustion by Spray-dried NiO Oxygen Carrier / Mr. Jeom-In Baek
ACTIVATION OF ILMENITE AS OXYGEN CARRIER IN CHEMICAL LOOPING COMBUSTION WITH COAL / Dipl. Ing Ana Cuadrat
Continuous Long-term Operation Experience with 50kWth Chemical-Looping Combustor / Dr. Ho Jung Ryu

15:20 - 15:50 **Foyer**

Break

15:50 - 17:50 **Grosser Saal**

Biomass- and Co-gasification

Entrained-flow gasification to convert biomass into synthesis gas / Matthias Rudloff
Syngas production from Biomass / MSc. Ruben Smit
Steam Hydrogasification Based Conversion of Carbonaceous Feedstocks using the Viresco Technology / Dr. Arun SK Raju
CO₂ capture through co-gasification of coal, biomass and wastes blends / Dr. Rui Andre
Pressurised gasification of coal and biomass for the production of H₂-rich gas / Dr Fernando Rubiera
Status report on investigations for Integrated Grass Gasification Combined Cycle / Johannes Judex

15:50 - 17:50 **Saal 1**

IGCC - Concept Studies

The Impact of Concept Simplification on Performance and Economics of IGCC Power Plants with Carbon Capture (IGCC-CC) / Mathias Rieger
Modelling of a base case for future IGCC concepts with CO₂ capture / Dipl.-Ing Christian Kunze
Optimum design for an integrated coal gasification combined cycle system with CO₂ capture / Mr Yoshinobu Nakao
Hydrogen and electricity co-production schemes based on

gasification processes with carbon capture and storage / PhD Eng. Calin-Cristian Cormos

Technical and economical comparison between different configurations of a zero-emissions plant located in South-West Sardinia / Dr. Alberto Pettinau

15:50 - 17:50 **Saal 2**

Carbon Capture - Engineering and Economic Evaluation

Optimized Post Combustion Capture Technology for Power Plants / Sandra Schmidt
Drivers and challenges for flexible operation of pulverised coal power plants with CCS / Ms Hannah Chalmers
Retrofitting Study of a 350MW hard coal fired power plant with post combustion capture; optimal integration pathways for minimizing the energy penalty / Dr. Gerald Kinger
Life cycle assessment of pulverized coal power plants with and without CO₂ post-combustion capture, transport and storage / Giovannangelo
Techno-Economic Assessment of Ultra-Supercritical Coal Fired Pulverised Fuel Boilers and IGCC Power Plants with CO₂ Capture: A Comparative Analysis / Dr Ye Huang

Tuesday, 19 May 2009

09:00 - 10:00 **Grosser Saal**

Keynote Session II

10:00 - 10:30 **Foyer**

Break

10:00 - 15:50 **Saal 4**

Posters

10:30 - 12:10 **Grosser Saal**

Gasification - CFD and Research Requirements

Investigations on high temperature gasification and gas cleaning - The research project HotVeGas / Prof. Dr.-Ing. Hartmut Spliethoff
Numerical modelling of partial oxidation processes / Rehm
Two-Dimensional CFD Model of Air-Blown Coal-Fired Updraft Gasifier / Ph.D. Michele Vascellari
„Coupling of ChemApp and OpenFOAM“ / Danny Messig
MATHEMATICAL MODEL OF THE PARTIAL OXIDATION OF COAL PARTICLES FOR THE MODELLING OF SYNTHESIS GAS PRODUCTION: VIRTUCON / Dr. Petr A. Nikrityuk

10:30 - 12:10 **Saal 1**

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Gas Treatment - Upgrading

A compact granular bed particle filter for high temperature synthesis gases / Professor Johan Einar Hustad
Novel Filtration System and Regime for Removing Particulates from Syngas at High Temperatures and Pressures / Dr Sunil Sharma
Valorisation of synthesis gas from biomass gasification. / Dr Esben Lauge Sørensen
Hot Fuel Gas Cleaning in IGCC at Gasification Temperature / Dr. Michael Müller
Experimental investigation and numerical simulation of CO to CO₂ conversion for hydrogen enrichment of syngas from an air-blown fixed bed up-draft coal gasifier / Stefano Murgia

10:30 - 12:10 **Saal 2**

Carbon Capture Technologies (I)

Overview on 1st and 2nd generation coal-fired membrane power plants (with and without turbo machinery in the membrane environment) / Dr. Ernst Riensche
Steam reactivation of CaO-based natural sorbents applied to a carbonation/calcination loop for CO₂ capture / Dr. Gemma Grasa
Minimising the Regeneration Heat Duty of Post-Combustion CO₂ Capture Processes by Wet Chemical Absorption: The Misguided Focus on Low Heat of Reaction in the Search for New Solvents / Dipl.-Ing. Jochen Oexmann
A preliminary evaluation of post-combustion CO₂ capture performance in a pilot plant test using monoethanolamine at a lignite-fired power station in Australia / Dr Yuli Artanto
Integration of a CO₂ separation process in a coal fired power plant / Christina Stankewitz

10:30 - 12:10 **Saal 3**

Oxyfuel Combustion (I)

Commerical Demonstration of Oxy-Coal Combustion Near Zero Emissions Clean Power Technology / Mr. Kevin McCauley
Current status and development potential of the Oxyfuel process / Prof. Dr.-Ing. Michael Beckmann
The OXYCOAL-AC process: Component behavior and thermodynamic efficiency. / Professor Dr.-In Reinhold Kneer
Is Oxyfuel Combustion an Option for Gas Turbines? / Dr. Peter Kutne
Advancement of the CO₂ compression and purification plant in the integration of the oxyfuel technology / Dr. Roland Ritter

12:10 - 13:40 **Saal 5**

Lunch

13:40 - 15:20 **Grosser Saal**

Gasification - Special Applications

Progress with underground coal gasification (UCG) / Mr Gordon Couch
Experimental Study on Running of Underground Coal Gasification Power Generation System / Prof. PhD. Chuantong LI
LATROBE UREA PROJECT- Challenges posed from using Lignite Feedstock / Dr David Craze
The Operational Experience and Market Potential Investigation of Coal Gasification in Taiwan / Wei Cheng Chen
An overview on the COHYGEN (coal-to-hydrogen generation) R&D project / Mr. Enrico Maggio

13:40 - 15:20 **Saal 1**

Gas Treatment - Desulphurisation

STEPWISE EXTENSION OF A GAS CLEANUP FOR IGCC APPLICATION / Lars Kirchner
RTI/Eastman Warm Syngas Clean-up Technology: Integration in Power and Chemical Production Applications / Markus Lesemann
Correlation of H₂S and COS in the hot coal gas stream and its importance for the high temperature desulphurization / Jianglong Yu
Experimental tests on a high-temperature H₂S removal bench-scale plant / engineer Caterina Frau
SULPHUR CAPTURING DURING A FIXED-BED GASIFICATION PROCESS OF COAL / Mr Pat Skhonde

13:40 - 15:20 **Saal 2**

Carbon Capture Technologies (II)

Redesigning the cold end of a lignite power station for CO₂ capture / Mr Trent Harkin
Laboratory Investigations of Polyamine Solvents for CO₂-Scrubbing from Flue Gases / Kevin Brechtel
Carbon adsorbents for post-combustion CO₂ capture / Dr Cova Pevida
Integration Studies of Post-Combustion CO₂-Capture Process by Wet Chemical Absorption into Coal-Fired Power Plant / Dipl.-Ing. Imo Pfaff
Simulation and integration of a carbonate looping system for CO₂ capture in existing power stations / Dr Ramón Murillo

13:40 - 15:20 **Saal 3**

Oxyfuel Combustion (II)

The BIOX Plant – a 100 kW CFB test plant for oxyfuel combustion - Design – Erection – 100-hour tests – Next steps / Dr. Ulrich Hohenwarter
Sulphation of calcium-based sorbents in circulating fluidised beds under oxy-fuel combustion conditions / Dr. Francisco Garcia-Labiano
PERFORMANCE OF A FLUIDISED BED GASIFIER UNDER OXY-FUEL CONDITIONS / Nicolas Spiegl

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Experimental Investigations of Combustion Behaviour in Various O₂/CO₂-Atmospheres / Stephanie Tappe
Numerical Simulation of Pulverized Coal Oxy-Combustion With Exhaust Gas Recirculation / Ph.D. Michele Vascellari

15:20 - 15:50 **Foyer**

Break

15:50 - 17:50 **Grosser Saal**

Gasification - Fixed Bed and Ash Modelling

A simplified model of a fixed bed counter current gasifier / prof. Giampaolo Mura

Thermodynamic Modelling of the BGL-gasification process with particular consideration of alkali metals / Dipl.-Ing. Stefan Guhl

Transient behavior of a fixed bed countercurrent gasifier: one dimensional modeling / Brundu

Thermodynamic equilibrium calculations and simulations of gasification processes with syngas cooling / Dipl.-Min. Katrin Reinke

15:50 - 17:50 **Saal 1**

Gas Treatment - Upgrading and Applications

Investigation of potential alkali getters for gasification using a new high temperature pressurized STA / Franz Hauk

Development of halide removal sorbent for hot gas cleaning technology / Mr Makoto Nunokawa

Successful Completion of the Development and Testing of a Coal to Fuel Cell Grade Hydrogen Technology Package for New Zealand / Dr Robert S Whitney

Experimental study assessment of mitigation of carbon formation on Ni/YSZ and Ni/CGO SOFC anodes operating on gasification syngas and tars / Mr. Joshua Mermelstein

Analysis of Coal Gasification Processes Integrated with High Temperature Fuel Cells and Microgas Turbines / Ing Vittorio Tola
Fluidized Bed Methanation Technology for improved Production of SNG from Coal / Dr. Serge M. A. Biollaz

15:50 - 17:50 **Saal 2**

Carbon Capture Technologies (III)

Evaluation of an Integrated Post-Combustion CO₂ Capture Process for Varying Loads in a Coal-Fired Power Plant using

Monoethanolamine / Dipl.-Wirtsch.-I Sebastian Linnenberg

Analysis of the attrition of CaO particles in a carbonation/calcination prototype to capture CO₂ from combustion flue gases / GONZALEZ

Experimental studies on CO₂ desorption from amine solutions / Paula Galindo Cifre

ZeroGen Commercial-scale IGCC with CCS / Ms Heather Brodie

Evaluation of Integration of Flue Gas Scrubbing Configurations with MEA for CO₂ Separation in a Coal-Fired Power Plant / Dipl.-Ing. Elizabeth Heischkamp

15:50 - 17:50 **Saal 3**

Oxyfuel Combustion (III)

MEM-OXCOAL - Oxygen permeation membranes for coal-fired power plants / Professor Manfred Martin

Ceramic Membranes for Oxyfuel Power Plants / Dr. Stefan Baumann

Module Design for MIEC Membranes in Oxycoal-AC / Dr.-Ing. Ewald M. Pfaff

Oxyfuel combustion by means of high temperature membranes for air separation / Franz Beggel

Dense Ceramic Membranes / Priv.-Doz. Dr. Michael Schroeder

Wednesday, 20 May 2009

08:50 - 10:30 **Grosser Saal**

International and Regional Perspectives

EPRI Industry Technology Demonstration Projects / Ronald Schoff

E.ON's strategy to a low carbon future / Dr.-Ing. Christian Folke

China's coal fired electric power sector challenges and opportunities / DR ANDREW MINCHENER

Pre-Engineering Study for a 700 deg C high efficient PC-Power Plant / Dipl.-Ing. Hans-Joachim Meier

Development of Clean Coal Technology in Indonesia / Mr.; M.Sc. Slamet SUPRAPTO

08:50 - 10:30 **Saal 2**

Carbon Capture Technologies (IV)

Novel Concepts for IGCC based power generation with carbon dioxide capture using OMCM technology / Mr Rahul

Anantharaman

Modelling of Total Plants Including Gas Washing Using the Simulation Tool EBSILON[®] Professional / Dr. Reiner Pawellek

Technical Evaluation of CO₂ Compression and Purification in CCS Power Plants / Mr. Renzo Castillo

The Global Comeback of Coal-to-Liquids (CTL) Technologies - Can CCS make CTL Compatible with Climate Protection Needs? / M.Sc. Daniel Vallentin

08:50 - 10:30 **Saal 3**

Oxyfuel Combustion (IV)

Impact of hot CO₂ rich gases on steels / Dr. Axel Kranzmann

Numerical Simulation of a 1200 MWth pulverised fuel oxy-firing furnace / Professor Dr.-In Reinhold Kneer

Pyrolysis and Combustion reactivities of an Indonesian low rank coal under oxy-fuel conditions / Jianglong Yu

In-situ observation of the combustion of air-dried and wet brown coal / Dr Eleanor Binner

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A Review on the Fate of Sulphur During Oxy-Coal Combustion for
Power Generation with CO₂ Capture / Dr. Stanley Santos

10:30 - 11:00 **Foyer**
Break

11:00 - 12:00 **Grosser Saal**
Keynote Session III - Outlook

12:00 - 12:30 **Grosser Saal**
Closing Session

12:30 - 14:00 **Saal 5**
Lunch

14:00 - 18:00 **Technical Visit**
TU Bergakademie Freiberg or Dresden University of

Thursday, 21 May 2009

09:00 - 18:00 **Technical Visit**
Schwarze Pumpe 30 MW oxyfuel pilot plant