

Preliminary Program

Tuesday, June 14						
20:30	Welcome Reception					Rica Nidelven Hotel
Wednesday, June 15						
08:00	Registration					
08:45	Conference Opening, Nils A. Røkke					Chairman: Nils Røkke R1
08:55	"The need for CCS and Norway's role", Eli Blakstad, State Secretary					R1
09:05	Keynote 1: "The Norwegian Research Program CLIMIT: CCS from strategy to reality", Kjell Bendiksen, Professor, CLIMIT					R1
09:25	Keynote 2: "Climate Change 2011 - still an important issue?" - Eystein Jansen, Bjerknes Centre for Climate Research					R1
09:45	Keynote 3: "CCS Progress – Demonstration Projects – States of play", Bob Pegler, Global CCS Institute					R1
10:05	Keynote 4: "CCS: potential and challenges across industries" - Sean McCoy, IEA					R1
10:20	Coffee Break					
	Session A1 (Auditorium R1) Post-Combustion Systems Chair: Gary T. Rochelle	Session B1 (Auditorium R2) Pre-Combustion Hydrogen Chair: Alan Kerstein	Session C1 (Auditorium R3) High-temperature looping systems Chair: Kristin Jordal	Session D1 (Auditorium R5) Pilot and Demonstration Projects Chair: Mario Ditaranto	Session E1 (Auditorium R6) Storage - Monitoring I Chair: Kitty Nijmeijer	Session F1 (Auditorium R8) Storage - Cap Rock Characterization and integrity Chair: Tore A. Torp
10:40	Comparison of current and advanced post-combustion CO2 capture technologies for power plant applications (Gonzalez-Salazar) 324	Hydrogen gas turbine combustion and fuel supply system within the DECARBit project (Haugen) 108	Study of limestone behaviour in fluidised bed at air and oxygen combustion conditions (Pikkariainen) 306	CIUDEN Development Centre on Oxycombustion Technologies (Lupion) 244	Large-scale geoelectric monitoring at the Ketzin CO2 storage pilot (Germany) (Bergmann) 147	Caprock systems for CO2 geological storage in deep saline formations (Wildgust) 90
11:00	Positive and negative effects on energy consumption by interheating of stripper in CO2 capture plant (Karimi) 220	Hydrogen production through sorption-enhanced steam methanereforming. Demonstration of the novel process at the hynorLILLESTRØM HYDROGEN STATION.(Meyer) 221	Cold flow investigations of a Circulating Fluidized Bed Chemical Looping Combustion system as a basis for up-scaling to an industrial application (Langørgen) 293	CO2FieldLab: Monitoring technologies to assess the integrity of CO2 underground storage (Bakk) 263	Measuring pressure performance of a large saline aquifer during industrial-scale CO2 injection: the Utsira sand. (Chadwick) 13	Hydromechanical behaviour of the aquifer and caprock under high pressure injection (Vilarrasa) 267
11:20	Packing characterization: Mass Transfer Properties (Wang) 14	H2 Capability of SEV Burners (Khawar) 45	Demonstration of the Calcium Looping Process: High Temperature CO2 Capture with CaO in a 200 kWth Dual Fluidized Bed Pilot Facility (Hawthorne) 235	What's new at Ketzin? Progress report on Europe's longest-operating on-shore CO2 storage site (Martens) 80	Full-waveform inversion for CO2 quantification- application to real data at Sleipner (Romdhane) 204	A quantitative evaluation method for the stability and sealing capacity of cap rock in CO2 storage site (Daan) 302
11:40	Future-proofing coal plants with post-combustion capture against technology developments (Lucquiaud) 285	Pursuing the pre-combustion route in oil refineries -The impact on fired heaters (Weydahl) 103	CO2 and SO2 co-capture in a circulating fluidized bed carbonator reactor of CaO (Arias) 74	Longyearbyen CO2 lab status and plans (Sand)	Soil-Gas identification of vadose-zone carbon cycling: Implications for near-surface monitoring at CCS sites (Romanak) 78	Evaluation of CO2 leakage risk along the abandoned wells in the French context (Sy) 28
12:00	Lunch					
	Session A2 (Auditorium R1) Post-Combustion Solvents Chair: Borja Arias	Session B2 (Auditorium R2) Pre-Combustion Sorbents Chair: Roland Span	Session C2 (Auditorium R3) Oxy-Fuel Combustion Chair: Monica Lupion	Session D2 (Auditorium R5) Projects and Programs Chair: Hans Aksel Haugen	Session E2 (Auditorium R7) Storage - Monitoring II Chair: Atle Mørk	Session F2 (Auditorium R8) Storage Capacity I Chair: Andy Chadwick
13:00	Encapsulated Amines for Carbon Dioxide Capture (Aines) 134	Sour SEWGS application in an IGCC (van Dijk) 201	Oxy-fuel retrofitting of heavy fuel oil fired refinery heaters - a two-step experimental approach (Seljeskog) 106	BIGCCS Centre (Røkke N.) 248	Feasibility study of CO2 monitoring using Controlled Source Electro-Magnetics, CSEM (Nord) 289	Basin-scale assessment for CO2 storage prospectivity in the province of QUEBEC, CANADA (Malo) 79
13:20	A rational approach to amine mixture formulation for CO2 capture applications (Puxty) 22	Development and application of high temperature CO2 sorbents (Blom) 187	Evaluation of oxy-coal combustion modelling at semi-industrial scale (Muller) 75	Canada Natural Resources (Mitrovic) 326	Experimental study on the influence of CO2 on rock physics properties of a typical reservoir rock with the use of ultrasonic velocity, resistivity and X-ray CT-scanner (Binyam) 195	Regional model development and study of pressure propagation (Nielsen) 142

13:40	Experimental Study on Blended Solvent of Chemical Absorption for CO2 Separation from Coal-fired Flue Gas (Fang) 59	Comparison of commercial and new developed adsorbent materials for pre-combustion CO2 capture by pressure swing adsorption (Casas) 194	Investigation of turbulent oxy-fuel jet flames using Raman/Raleigh laser diagnostics (Sevaut) 21	Combined Power and Steam Generation and CO2 capture in LNG plants (Zomorodian) 128	A modular geoelectrical monitoring system as part of the surveillance concept in CO2 storage projects (Schmidt-Hattenberger) 272	CO2 storage efficiency factor: a wildcar for cost and safety (Johansen) 200
14:00	Improvement of lipophilic-amine - based thermomorphic biphasic solvent for energy-efficient carbon capture (Zhang) 2	Study of Adsorption-based Carbon Dioxide Capture and Storage Systems Under Wet Conditions (Marx) 250	Experimental Analysis of Swirl Stabilized Oxyfuel Flames at Elevated Pressure (Kutne) 158	Progress, performance and pilot testing of post-combustion CO2 capture membranes at six industrial test sites (Raats) 19	Sensitivity of shallow groundwater systems to CO2; Case studies from the Cranfield and SACROC EOR fields. (Changbing) 277	Pressure simulations in the Snøhvit area, Hammerfest Basin (Lothe) 237
14:20	Coffee Break					
14:20	Poster Session					
	Session A3 (Auditorium R1) Post-Combustion Degradation Chair: Pierre Louis Carrette	Session B3 (Auditorium R2) Pre-Combustion Modeling Chair: Øivind Wilhelmsen	Session C3 (Auditorium R3) Transportation Corrosion and Heat Transfer Chair: Svend Tollak Munkejord	Session D3 (Auditorium R5) CCS Value Chain Chair: Sally M. Benson	Session E3 (Auditorium R7) Storage, EOR storage in coal & gas shales Chair: May-Britt Hägg	Session F3 (Auditorium R8) Storage - Site Characterization / Case Studies Chair: Peter Frykman
15:20	Oxidative degradation of amines using an open- and closed-batch reactor (Vevelstad) 164	CO2 capture from IGCC by low-temperature syngas separation and partial condensation of CO2 (Berstad) 226	Heat Transfer Characteristics of a Pipeline for CO2 Transport (Drescher) 18	ECCOTool: Tool for the Analysis of CCS Value Chains (Weidemann) 234	Sensitivity of hydrocarbon recovery by CO2 injection to production constraints and fluid behavior (Barroux) 167	Comprehensive risk assessment of geological CO2 storage on the example for the "BIELSKO" storage complex (Koteras) 83
15:40	Thermal Degradation and Oxidation of Amines in CO2 Capture (Rochelle) 98	Development of a dynamic model of a palladium membrane reactor for water gas shift (Rossi) 111	Corrosion of pipeline materials due to impurities in separated CO2 from fossil fuelled power plants (Paschke) 161	CO2 Interim Storage: Technical Characteristics and Potential Role in CO2 Market Development (Farhat) 301	Modeling CO2 Adsorption and Transport in Micro and Mesopores of Carbon-based Systems (Wilcox) 51	Can low permeable rocks be used for storing CO2? The potential Longyearbyen CO2 reservoir (Mørk) 227
16:00	Catalysts and Inhibitors of Monoethanolamine Oxidation (Voice) 39	Capex evaluation for novel sorption based CO2 capture technologies in pre-combustion IGCC framework (Bergsma) 121	Corrosion in Dense Phase CO2 Pipelines - Three Reasons for Concern (Dugstad) 269	Linking European CO2 sources to storage in 2030 and 2050: a requirement for UK-Norway co-operation (Haszeldine) 315	CO2-EOR and storage by CO2 injection in North Sea formations (Akervoll) 255	A small-scale CO2 injection experiment into a deep geological formation, Heletz, Israel - Experimental plan, monitoring, predictive models and preliminary results of preparatory tests (Niemi) 243
16:20	A Study of Oxidative Degradation of AMP for Post-combustion CO2 Capture (Wang) 215	Elcogas pre-combustion carbon capture pilot. Behaviour in sweet conditions and H2 co-production (Casero) 57	The GERG-2008 equation of state and its application to the design of ccs-systems (Nimtz) 87	Linking techno-economic modeling of Europe's electricity sector to large-scale CCS infrastructure optimization (Kjarstad) 205	Long term effects of storing CO2 in coal on the coal structure and properties (Maphala Tshifhiwa) 43	Storing of CO2 offshore Norway, criteria for evaluation of safe storage sites (Halland)
16:40	End of Day 1					
18:15	Concert and Conference Dinner					
Thursday, June 16						Erkebispegården
08:30	Opening address: "Towards full scale CCS – status in Norway", Dr. Klaus Schöffel, VP Technology, GASSNOVA					R1
08:40	Keynote 5: "Capture with membranes", May-Britt Hägg, NTNU					R1
09:00	Keynote 6: "Pipeline transport of CO2: remaining challenges that need to be solved", Leiv Idar Langelandsvik, Gassco					R1
09:20	Keynote 7: "CO2 Storage: do we stand between a rock and a hard place?" - Andy Chadwick, BGS					R1
09:40	Award Winning Lecture					R1
10:00	Coffee Break					
10:20	Session A4 (Auditorium R1) Post-Combustion Membranes Chair: Taek-Joong Kim	Session B4 (Auditorium R2) Pre-combustion Novel Separation and Control Chair: Matthias Wessling	Session C4 (Auditorium R3) Transport Thermodynamics Chair: Gelein de Kojier	Session D4 (Auditorium R5) CCS Implementaiton and Barriers Chair: Truls Gundersen	Session E4 (Auditorium R7) Monitoring III / Leakage scenarios Storage (4) Chair: Jan Åge Stensen	Session F4 (Auditorium R8) Storage Capacity II Chair: Peter Frykman

10:20	CO2 capture from power plants - a techno economic analysis of membrane cascades (Follmann) 54	Operability analysis and control design of an IRCC cycle HMR unit with membrane leakage (Michelsen) 178	CO2 dynamics - fundamental aspects of transport and injection of CO2 with impurities (Munkejord) 150	Economics and deployment potential of CCS in China (Dahowski) 132	Feasibility of monitoring techniques for substances mobilised by CO2 storage in geological formations - IEAGHG Project (Stalker) 82	Effects of impurities on geological storage of carbon dioxide (Wildgust) 105
10:40	Preparation of Polysulfone hollow fibers as support for CO2 selective membranes (Sandru) 27	Applying novel distillation techniques to the ASU of an IGCC with pre-combustion CO2 capture (van der Ham) 174	Evaluation of the SPUNG Equation of State for use in Carbon Capture and Storage (CCS), modelling (Skaugen) 49	Opportunities for industrial CCS deployment in developing countries (Rivera-Tinoco) 203	Scenario Modelling to Support Monitoring Plans for CO2 Storage Sites (Metcalfe) 88	Water Production associated to CO2 injection into a saline aquifer (Maurand) 109
11:00	Transport behavior of polymer membranes for flue gas treatment (Nijmeijer) 9	Oxygen transport membranes - BIGCO2 Achievements (Dahl) 280	Two-Phase Flow of CO2 with Phase Transfer (Lund) 48	Broaching CCS into Society; Timeline Considerations for Capture Technologies and the Challenge of Capacity Building (Hetland) 24	Influence of CO2 detectability thresholds and remediation response time on surface leakage rate (Grimstad) 208	Underground CO2 storage and water production (Wessel-Berg) 199
11:20	Maps for the evaluation of membrane performances in CO2 post combustion capture (Barbieri) 33	Potential for low-temperature capture technologies in different CCS applications (Berstad) 159	Depressurization of a 24" 50 km long CO2 pipeline (Clausen) 231	Barriers to implementation of CCS - capacity constraints (Hendriks) 231	Evaluation of CO2 leakage to aquifers and the surface from a multiscale approach combining flow along the wellbore and the overburden (Thoraval) 233	Analysis of potentials and costs of CO2 storage in the Utsira aquifer (Seljom) 10
11:40 Lunch						
12:40	Session A5 (Auditorium R1) Post-Combustion Process Issues Chair: Hallvard Svendsen	Session B5 (Auditorium R2) Novel separation control Chair: Paul Inge Dahl	Session C5 (Auditorium R3) Projects Chair: Sigurd Sannan	Session D5 (Auditorium R5) CCS Techno-economics Chair: Kristin Jordal	Session E5 (Auditorium R7) Storage impacts / analysis Chair: Ane Lothe	Session F5 (Auditorium R8) Fluid Flow I / Geochemistry Chair: Svend Tollak Munkejord
12:40	N2O solubility at high amine concentration and validation of N2O Analogy (Hartono) 139	Cesam - oxyfuel heat and power for post-combustion capture (Siljan) 26	Technology Centre Mongstad (TCM)- status and plans (Falk Pedersen)	Perspectives on CCS cost and economics (Hans Thomann) 299	CSEM data analysis for Sleipner CO2 storage (Park) 260	Multiphase flow of CO2 and water in reservoir rocks at reservoir conditions (Pini) 123
13:10	Precipitating carbonate process for low-energy post-combustion CO2 capture Technology development and pilot plant operation (van Straelen) 149	On the development of binary and ternary Pd-alloys for use in hydrogen production under harsh atmospheres (Peters) 92	Boundary Dam 3 ICCS - In Construction (Monea)	European Best Practice Guidelines for the Evaluation of CO2 Capture Technologies (Rahul Anantharaman) 283	RISCS: A Model of Risk Interference for Subsurface CO2 Storage (Bielicki) 144	Method for the Determination of Residual Carbon Dioxide Saturation Using Reactive Ester Tracers (Stalker) 81
13:30	Combined Capture of CO2 and SO2 (Sanchez-Sanchez) 300	Hybrid absorber-membrane CO2 capture (Raats) 20	Qualification of CO2 storage site for Mongstad (GASSNOVA)	Cost estimation of fossil power plants with Carbon Dioxide Capture and Storage (Voll) 217	Potential impacts on groundwater resources of deep CO2 storage (Basava-Reddi) 89	Reservoir rock alteration due to scCO2 exposure - Results from laboratory experiments (Scherf) 185
13:50	Heat of absorption of CO2 in aqueous ammonia and piperazine solutions (Liu Jinzhao) 170	Dissolution and carbonation of activated serpentine for combined capture and storage (Werner) 241		Impact of CO2 Price Stability on Investment in CCS Technology (Kalinin) 296	Impacts of possible seepage from CO2 sub-seabottom storage (Ardelan) 118	Development and application of a coupled ECLIPSE-GeoSys modelling system for simulation of CO2 storage in saline aquifers (Benisch) 254
14:10 Coffee Break						
14:30	Session A6 (Auditorium R1) Post-Combustion Modeling Chair: Gary T. Rochelle	Session B6 (Auditorium R2) Emissions and Novel Combinations Chair: Mario Ditaranto	Session C6 (Auditorium R3) Risk Acceptance Chair: Per Morten Schiefloe	Session D6 (Auditorium R5)	Session E6 (Auditorium R7) Well integrity Chair: Idar Akervoll	Session F6 (Auditorium R8) Fluid Flow II Chair: Alv-Arne Grimstad

14:30	Evaluation of parameter fitting procedures for rigorous equilibrium model development (Mehdizadeh) 133	AMP emissions: Pilot plant measurements and Aspen Plus modelling (Bergsma) 251	Development of guidelines for rational acceptance criteria settings for CCS chains (Friis Hansen) 119		Well Integrity Modeling, application to Ketzin ktzi-1 injection Well over a Prolonged Sequestration Period (Le Guen) 197	An Experimental Study of CO2 Exsolution and Relative Permeability Measurements (Benson) 268
14:50	Modeling Energy Performance of Aqueous Methyl-diethanolamine/Piperazine for CO2 Capture (Frailie Peter) 135	Combining CCS with renewable energy - metrics of integrating CSP with fossil fueled CCS plants (Haines Michael) 46	Political rationality and media discourse on CCS (Røyrvik) 166		Regional Migration Pathways and Potential Well Risk for the IEAGHG Weyburn-Midale CO2 Storage Project (Cavanagh) 239	Dynamic behaviour of porosity and permeability as a response to CO2 injection (Simon) 207
15:10	A general dynamic column model in CO2SIM for transient modeling of CO2 absorption processes (Tobiesen) 173	Biomass with CCS - Global Potential and Carbon Market Issues (Dixon) 70	Being told does not change anything (Torvatn) 258		Modelling CO2 blow-out from wells (Lindeberg) 273	Pore-Scale micro-CT Imaging: Non-Wetting Phase Cluster Size Distribution as a Function of Interfacial Tension (Georgiadis) 314
15:30			Similarities and differences of simultaneous influences on risk perceptions of CCS project proposals (Schumann) 212		Experimental assessment of induced reactions on well cement (Brandvoll) 184	Influence of low and high IFT fluid systems on scaling parameters of laboratory modelling of CO2 injection into saline aquifers (Polak) 240
15:50	Closing Remarks - Hallvard Svendsen, NTNU					R1
16:00	End of Conference					

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