Sønnik Clausen - DTU Orbit (01/04/2019)

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Research outputs:

Combustion Behavior of Single Particles of Raw Wood and Pelletized Wood
Research output: Research - peer-review › Poster – Annual report year: 2018

Experiments and modeling of single plastic particle conversion in suspension
Research output: Research - peer-review › Journal article – Annual report year: 2018

From Wood Chips to Pellets to Milled Pellets: the Mechanical Processing Pathway of Wood
Research output: Research - peer-review › Poster – Annual report year: 2018

Measurements of the NOx precursors and major species concentrations above the grate at a waste-to-energy plant
Research output: Research - peer-review › Journal article – Annual report year: 2018

Wood Pellet Milling Performance in a Suspension-Fired Power Plant
Research output: Research - peer-review › Poster – Annual report year: 2018

Wood pellet milling tests in a suspension-fired power plant
Research output: Research - peer-review › Journal article – Annual report year: 2018

A DEVICE AND METHOD FOR MEASURING TAR IN A TAR-ENVIRONMENT
Research output: Research › Patent – Annual report year: 2017

Accurate particle speed prediction by improved particle speed measurement and 3-dimensional particle size and shape characterization technique
Research output: Research - peer-review › Journal article – Annual report year: 2017

Camera Measurements in Cement Kilns – Impact of Alternative Fuels on Kiln Flames
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

CFD simulations on marine burner flames
Research output: Research - peer-review › Paper – Annual report year: 2017

Full-scale Milling Tests of Wood Pellets for Combustion in a Suspension-Fired Power Plant Boiler
Research output: Research - peer-review › Paper – Annual report year: 2017

High-resolution absorption measurements of NH3 at high temperatures: 2100–5500 cm⁻¹
Research output: Research - peer-review › Journal article – Annual report year: 2017
On the accuracy of HITEMP-2010 calculated emissivities of Water Vapor and Carbon Dioxide
Research output: Research › Sound/Visual production (digital) – Annual report year: 2015

UV absorption cross-sections of selected sulfur-containing compounds at temperatures up to 500°C
Research output: Research - peer-review › Journal article – Annual report year: 2015

Validation of HITEMP-2010 for carbon dioxide and water vapour at high temperatures and atmospheric pressures in 450-7600 cm⁻¹ spectral range
Research output: Research - peer-review › Journal article – Annual report year: 2015

A Comparative Study of Two Full-Scale Swirl Stabilized Bio-Dust Flames Power Plant Flames
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Determining the emissivity of pig skin for accurate infrared thermography
Research output: Research - peer-review › Journal article – Annual report year: 2015

Local Measurements in Two Full-Scale Swirl Stabilized Bio-Dust Burners: A Parametric Study
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Measurement and Modeling of Particle Radiation in Coal Flames
Research output: Research - peer-review › Journal article – Annual report year: 2014

Metrology to enable high temperature erosion testing - A new european initiative
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Spectroscopy for Industrial Applications: High-Temperature Processes
Research output: Research › Sound/Visual production (digital) – Annual report year: 2015

Spectroscopy for Industrial Applications: High-Temperature Processes
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Hot gas flow cell for optical measurements on reactive gases
Research output: Research - peer-review › Journal article – Annual report year: 2013

Improving the performance of infrared reflective night curtains for warming field plots
Research output: Research - peer-review › Journal article – Annual report year: 2013

In-Flame Measurements on Full-Scale Swirl Stabilized Bio-Dust Burners at Different Operational Conditions
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Oxy-fuel combustion of millimeter-sized coal char: Particle temperatures and NO formation
Research output: Research - peer-review › Journal article – Annual report year: 2013

Advanced Diagnostics in Oxy-Fuel Combustion Processes
Research output: Research - peer-review › Report – Annual report year: 2012

Characterizing and modeling of an 88 MW grate-fired boiler burning wheat straw: Experience and lessons
Research output: Research - peer-review › Conference article – Annual report year: 2012

Fast optical measurements and imaging of flow mixing: Fast optical measurements and imaging of temperature in combined fossil fuel and biomass/waste systems
Research output: Research › Report – Annual report year: 2012
Gas Temperature and Radiative Heat Transfer in Oxy-fuel Flames
Research output: Research › Paper – Annual report year: 2012

High-resolution spectroscopy of gases at elevated temperatures
Research output: Research › Sound/Visual production (digital) – Annual report year: 2012

High-resolution spectroscopy of gases at elevated temperatures for industrial applications
Research output: Research › Sound/Visual production (digital) – Annual report year: 2012

High-resolution spectroscopy of gases at elevated temperatures with applications to combustion
Research output: Research › Sound/Visual production (digital) – Annual report year: 2012

High-resolution spectroscopy of gases for industrial applications
Research output: Research › Poster – Annual report year: 2012

High-resolution spectroscopy of gases for industrial applications
Research output: Research › Conference abstract for conference – Annual report year: 2012

High-resolution transmission measurements of CO2 at high temperatures for industrial applications
Research output: Research - peer-review › Journal article – Annual report year: 2012

IR sensor för övervakning av brännarflamma i biobränsle eldade kraftverk
Research output: Research › Report – Annual report year: 2012

Comparison of Blackbodies for Calibration of Infrared Ear Thermometers
Research output: Research - peer-review › Journal article – Annual report year: 2011

Combustion zone investigation in fuel flexible suspension fired boilers, Experimental
Research output: Research › Report – Annual report year: 2012

Development of nanostructured protective "sight glasses" for IR gas sensors
Research output: Research - peer-review › Conference article – Annual report year: 2011

Investigation of NOx and CO Formation at Ultra-Wet Conditions
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

On the development of methods and equipment for 2D-tomography in combustion
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

Spektroskopisk måleteknik 190 nm - 25000 nm i industrielle anvendelser
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Sulfur trioxide on-line measurement technique for power plants
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

Validation of spectral gas radiation models under oxyfuel conditions. Part A: Gas cell experiments
Research output: Research - peer-review › Journal article – Annual report year: 2011

A multichannel spectroscopic system for simultaneous gas temperature measurements from several lines of sight
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010
Biomass co-firing for CO2 management: Full-scale field test
Research output: Research › Article in proceedings – Annual report year: 2011

Burnout of pulverized biomass particles in large scale boiler – Single particle model approach
Research output: Research › peer-review › Journal article – Annual report year: 2010

Comparison of blackbodies for calibration of infrared ear thermometers
Research output: Research › Conference abstract in proceedings – Annual report year: 2010

New IR-UV gas sensor to energy and transport sector
Research output: Research › Report – Annual report year: 2010

Physical limits of semiconductor laser operation: A time-resolved analysis of catastrophic optical damage
Research output: Research › peer-review › Journal article – Annual report year: 2010

Spatially resolved measurements of the magnetocaloric effect and the local magnetic field using thermography
Research output: Research › peer-review › Journal article – Annual report year: 2010

Berøringsfri (infrarød) temperaturmåling
Research output: Research › Paper – Annual report year: 2009

In situ gas temperature measurements by UV-absorption spectroscopy
Research output: Research › peer-review › Journal article – Annual report year: 2009

On Developing a Spectroscopic System for Fast Gas Temperature Measurements in Combustion Environments
Research output: Research › Conference abstract in proceedings – Annual report year: 2009

Optical Measurements in Furnaces as Diagnostic Tool for Combustion Processes in Power Plants
Research output: Research › Paper – Annual report year: 2009

Oxy-Fuel Combustion of Coal Char: Particle Temperature and NOx Formation
Research output: Research › Conference abstract in proceedings – Annual report year: 2009

Termografi anvendt indenfor forbrændingsteknik
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Anvendt optisk måleteknik
Research output: Communication › Sound/Visual production (digital) – Annual report year: 2008

Berøringsløs optisk måling af gassammensætning ved UV og IR spektroskopi
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

Co-firing of biomass and antural gas and NOx emission from pulverized biomass firing: Final report. Energinet.DK
Research PSO Project 6526
Research output: Research › Report – Annual report year: 2008

Full-scale boiler measurements demonstrating striated flows during biomass co-firing
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008
In Situ Fast UV Gas Absorption Measurements on a Large Scale Boiler
Research output: Research › Poster – Annual report year: 2008

IR sensor for monitoring of burner flame
Research output: Research › Report – Annual report year: 2008

Kombinasjon av spektrografi og termografi
Research output: Research › Paper – Annual report year: 2008

Måling af temperaturer og gassammensætning ved infrarød-spektroskopi
Research output: Research › Paper – Annual report year: 2008

Mathematical modeling and experimental study of biomass combustion in a thermal 108 MW grate-fired boiler
Research output: Research › peer-review › Journal article – Annual report year: 2008

On-line non-contact gas analysis
Research output: Research › Report – Annual report year: 2008

Berøringsfri (infrarød) temperaturmåling
Research output: Research › Paper – Annual report year: 2007

Infrarøde temperatur- og gasmålinger. Haderslev Kraftvarmeværk
Research output: Research › Report – Annual report year: 2007

In-situ gas temperature measurements by UV-absorption spectroscopy
Research output: Research › Conference abstract for conference – Annual report year: 2007

Spectral emissivity of surface blackbody calibrators
Research output: Research › peer-review › Journal article – Annual report year: 2007

Spectral emissivity of surface blackbody calibrators
Research output: Research › Conference abstract for conference – Annual report year: 2007

Temperaturmåling ved infrarød pyrometri
Research output: Research › Conference abstract for conference – Annual report year: 2007

Full-scale evaluation of additives for the reduction of chlorine-rich deposits in a 100 MW straw-fired boiler
Research output: Research › Article in proceedings – Annual report year: 2006

IR måleteknik
Research output: Research › Conference abstract for conference – Annual report year: 2006

Measured gas and particle temperatures in VTT's entrained flow reactor
Research output: Research › Report – Annual report year: 2006

Measurements of the dynamic behaviour at straw combustion in a 100 MW grate fired power plant
Research output: Research › Article in proceedings – Annual report year: 2006

Affaldsforbrændingsmodeller til driftsoptimering. Fase 1; Avanceret måleudstyr til forbedret drift til affaldsfyrede anlæg. Fase 1
Research output: Research › Report – Annual report year: 2005
Calorimetry for dose measurement at electron accelerators in the 80-120 keV energy range
Research output: Research - peer-review › Journal article – Annual report year: 2005

Comparison of noise sources in dual- and single-beam Fourier-transform near-infrared spectrometry
Research output: Research - peer-review › Journal article – Annual report year: 2005

Full-scale evaluation of additives for the reduction of chlorine-rich deposits in a 100 MW straw-fired boiler
Research output: Research › Conference abstract for conference – Annual report year: 2005

Hærdning med infrarød stråling
Research output: Communication › Journal article – Annual report year: 2005

Infrared thermography and ultrasonography to indirectly monitor the influence of liner type and overmilking on teat tissue recovery
Research output: Research › Conference article – Annual report year: 2005

Measurements of the dynamic behaviour at straw combustion in a 100 MW grate fired power plant
Research output: Research › Conference abstract for conference – Annual report year: 2005

Overfladetemperatur af belægningsprobe
Research output: Research › Report – Annual report year: 2004

Non-intrusive gas analysis at high temperature (invited talk)
Research output: Research › Conference abstract for conference – Annual report year: 2003

A hot gas facility for high-temperature spectrometry
Research output: Research - peer-review › Journal article – Annual report year: 2002

Experience with infrared methods for real time quantitative gas analysis in energy producing plants
Research output: Research - peer-review › Article in proceedings – Annual report year: 2002

FTIR emission spectroscopy methods and procedures for real time quantitative gas analysis in industrial environments
Research output: Research - peer-review › Journal article – Annual report year: 2002

Infrared thermography to evaluate milking induced alterations in teat tissue fluid circulation
Research output: Research › Journal article – Annual report year: 2002

Intercomparison of local temperature scales with transfer radiation thermometers between -50 deg. C and 800 deg. C
Research output: Research - peer-review › Article in proceedings – Annual report year: 2002

Measurement of spectral emissivity by a FTIR spectrometer
Research output: Research - peer-review › Article in proceedings – Annual report year: 2002

Optical subtraction Fourier transform near infrared spectroscopy on aqueous solutions
Research output: Research › Conference abstract for conference – Annual report year: 2002

Intercomparison of local temperature scales with transfer radiation thermometers between -50 deg. C and 800 deg. C
Research output: Research › Conference abstract in proceedings – Annual report year: 2001
Measurement of spectral emissivity by a FTIR spectrometer
Research output: Research › Conference abstract in proceedings – Annual report year: 2001

Berøringsløs temperaturmåling af varme gasser
Research output: Research › Article in proceedings – Annual report year: 2000

Laser flow measurements in flames
Research output: Research › Article in proceedings – Annual report year: 2000

Lyset afslører detaljer i forbrændingsprocessen
Research output: Communication › Journal article – Annual report year: 2000

Målenøjagtighed og fejlkilder ved berøringsløs temperaturmåling
Research output: Research › Article in proceedings – Annual report year: 2000

AEROPROFILE - Risø-målinger i München og Napoli
Research output: Communication › Journal article – Annual report year: 1999

FTIR transmission-emission spectrometry of gases at high temperatures: Demonstration of Kirchhoff’s law for a gas in an enclosure
Research output: Research - peer-review › Journal article – Annual report year: 1999

FTIR transmission emission spectroscopy of gases at high temperatures: Experimental set-up and analytical procedures
Research output: Research - peer-review › Journal article – Annual report year: 1999

Måling af forbrændingsgasser fra fly; Simulering af IR-gasspektre
Research output: Communication › Journal article – Annual report year: 1999

Signal-to-noise ratio of FT-IR CO gas spectra
Research output: Research › Journal article – Annual report year: 1999

The spectral emissivity of surface layers, currently applied in blackbody radiators, covering the spectral range from 0,9 to 20 μm. An international comparison
Research output: Research › Article in proceedings – Annual report year: 1999

AEROPROFILE - er i luften
Research output: Research - peer-review › Book – Annual report year: 1998

Infrared low resolution emission spectroscopy of hot gases
Research output: Research › Article in proceedings – Annual report year: 1998

Experimental high-temperature investigations of coal particles
Research output: Research › Report – Annual report year: 1996

Improved temperature measurements of burning char and coal particles using an FT-IR spectrometer
Research output: Research › Journal article – Annual report year: 1996

Infrarød gas- og temperaturmåling i affaldsforbrændingsanlæg
Research output: Research › Report – Annual report year: 1996

Infrarød temperaturmåling
Research output: Research › Report – Annual report year: 1996
Kalibrering af infrarødt udstyr
Research output: Research › Article in proceedings – Annual report year: 1996

Local measurement of gas temperature with an infrared fibre-optic probe
Research output: Research › Journal article – Annual report year: 1996

Measurement of particle and gas temperature with an FT-IR spectrometer
Research output: Research › Conference abstract in proceedings – Annual report year: 1996

Measurement of single moving particle temperatures with an FT-IR spectrometer
Research output: Research › Journal article – Annual report year: 1996

Measurement of surface temperature and emissivity by a multitemperature method for Fourier-transform infrared spectrometers
Research output: Research - peer-review › Journal article – Annual report year: 1996

Measurements of particle temperature under combustion
Research output: Research › Report – Annual report year: 1996

Mie calculations of the scattered light from laser doppler anemometers for a wide range of particle sizes
Research output: Research › Report – Annual report year: 1996

Laser sheet visualization. Applied to power station flames
Research output: Research › Report – Annual report year: 1994

Flue gas particle monitor
Research output: Research - peer-review › Book – Annual report year: 1993

Laservisualization
Research output: Research › Conference abstract for conference – Annual report year: 1992

LDA measurements in flames
Research output: Research › Conference abstract for conference – Annual report year: 1992

Local measurements in three 1.3 MW pulverized coal flames. Report for phase 4 of the project: Measurements for the validation of advanced laser based instrumentation and computer models for pulverized coal combustion systems. Vol. 1
Research output: Research - peer-review › Book – Annual report year: 1992

Local measurements in three 1.3 MW pulverized coal flames. Report for phase 4 of the project: Measurements for the validation of advanced laser based instrumentation and computer models for pulverized coal combustion systems. Vol. 2
Research output: Research - peer-review › Book – Annual report year: 1992

Measurements for the validation of advanced laser based instrumentation and computer models for pulverized coal combustion systems. Final report
Research output: Research - peer-review › Book – Annual report year: 1992

Overfladeforbrænding af halm
Research output: Research - peer-review › Book – Annual report year: 1992

Practical applications of laser based measuring techniques
Research output: Research - peer-review › Book – Annual report year: 1992
Reactivity measurements of coke particles in five different flow reactors
Research output: Research › Article in proceedings – Annual report year: 1992

Supplementary investigations of pulverized coal flames and test of some flame diagnostic techniques in the Risø furnace. Report for phase 3 of project: Measurements for the validation of advanced laser based instrumentation and computer models for pulverized coal combustions systems. Vol. 1
Research output: Research › peer-review › Book – Annual report year: 1992

Supplementary investigations of pulverized coal flames and test of some flame diagnostic techniques in the Risø furnace. Report for phase 3 of project: Measurements for the validation of advanced laser based instrumentation and computer models for pulverized coal combustions systems. Vol. 2
Research output: Research › peer-review › Book – Annual report year: 1992

Fundamentals in Combustion. Pyrolysis and reactivity measurements with a new atmospheric entrained flow reactor, and description of a burning particle in a controlled atmosphere
Research output: Research › peer-review › Book – Annual report year: 1991

Laser measurements in flames
Research output: Communication › Journal article – Annual report year: 1991

Afprøvning og verifikation af laserbaserede metoder i kulstøvfyret kedel
Research output: Research › Report – Annual report year: 1990

Lasmåling i flammer
Research output: Research › Journal article – Annual report year: 1990

LDA velocity measurement in a 500 kW pulverized coal flame
Research output: Research › Article in proceedings – Annual report year: 1990

Reactivity measurements of coke particles in five different flow reactors
Research output: Research › Journal article – Annual report year: 1991

Reactivity measurements of coke particles in five different flow reactors
Research output: Research › Report – Annual report year: 1990

Projects:

Ash transformation in waste boilers and optimization of novel steam superheater
Project: PhD

Air-pollutant sensor system for wood stoves
Project: PhD

Air-pollutant sensor system for wood stoves
Project: PhD

In-Situ undersøgelser af forbrændingsprocesser i store to-takts dieselmotorer
Project: PhD

Biomass Particle Morphology and Combustion Properties
Project: PhD
Burners for Cement Kilns  
Project: PhD

Optical Tomography in Combustion  
Project: PhD

In-Optics Humidity Compensation of NDIR Measurements for Combustion Emission Gas Sensing and Analysis  
Project: PhD

On-line trace gas measurement technique for gasification  
Project: PhD

Activities:

Camera Measurements in Cement Kilns – Impact of Alternative Fuels on Kiln Flames  
Activity: Talks and presentations › Conference presentations

KALIBRERING af IR TERMOMETRE: Betydning af afstand, apertur, opvarmning, IR termometer kvalitet, etc.  
Activity: Talks and presentations › Conference presentations

Non-contact measurements. Temperature, gas and surface properties  
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations