Introduksjon av «State-of-the-Art» rapporten

Diffuse and fugitive dust emissions to air in metallurgical or process industries

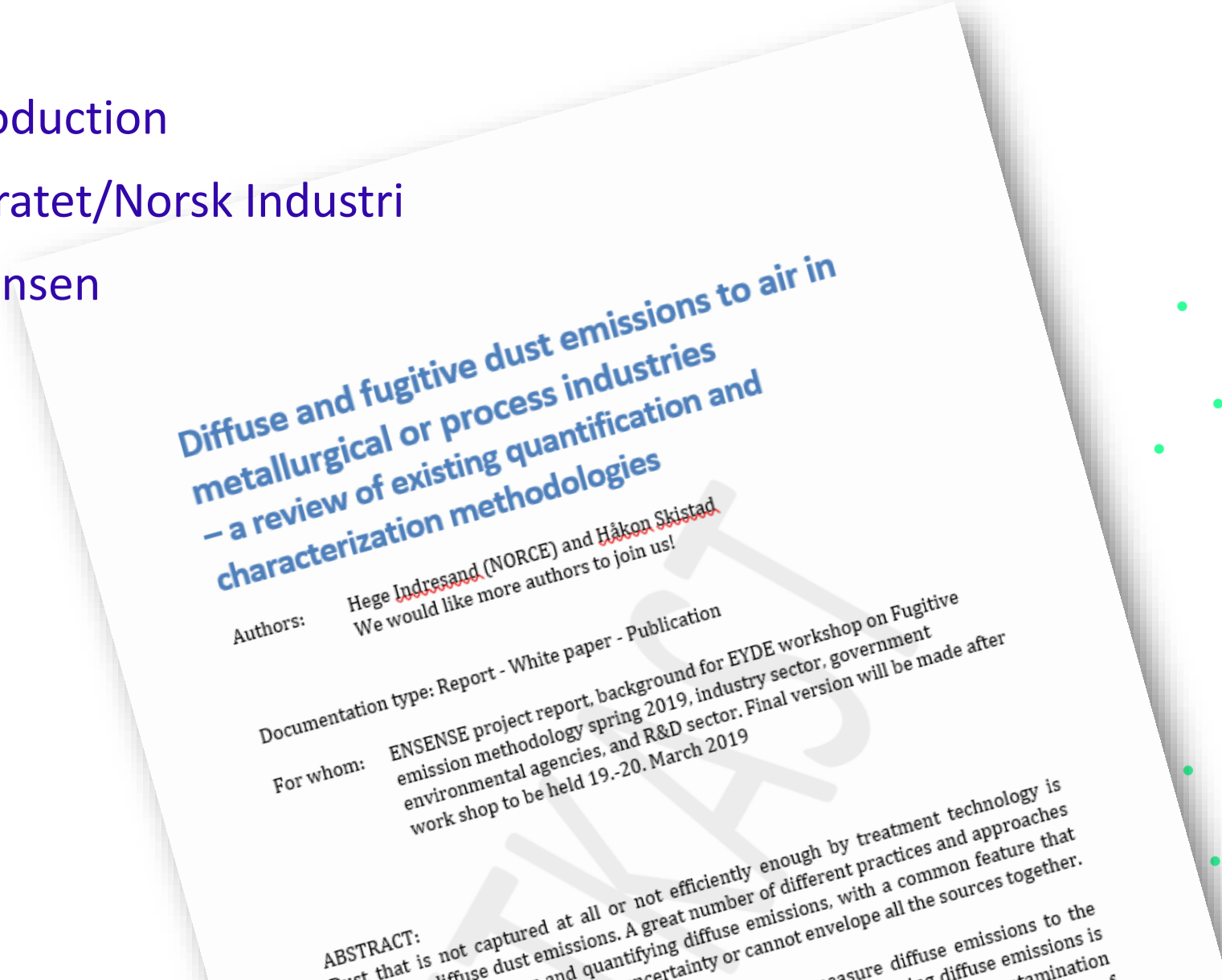
– a review of existing quantification and characterization methodologies

Hege Indresand & Håkon Skistad

20. MARS 2019

Veien hit

- Eydeklyngen
- SFI metal production
- Miljødirektoratet/Norsk Industri
- CEM konferansen



Diffuse and fugitive dust emissions to air in metallurgical or process industries – a review of existing quantification and characterization methodologies

Authors: Hege Indresand (NORCE) and Håkon Skistad
We would like more authors to join us!

Documentation type: Report - White paper - Publication

For whom: ENSENSE project report, background for EYDE workshop on Fugitive emission methodology spring 2019, industry sector, government environmental agencies, and R&D sector. Final version will be made after work shop to be held 19.-20. March 2019

ABSTRACT:

Veien videre

- Samarbeid
- Bidrag
- Disseminering

ENSENSE

(Environmental monitoring that makes sense)

Emissions and energy recovery

– Research Domain 4

Implementation of new and innovative solutions for energy recovery and reduced emissions require fundamental knowledge of process emission formation and of the dust and fume properties.

To reduce gaseous and dust emissions, in-situ and on-line measuring methods will be used or developed to understand the effect of operational strategies and process variations beyond state of the art. Present industrial practice varies and this is reflected in some of the selected research activities. The impact of the method developments is expected to reach much wider than each task may suggest.

Challenges

- Develop fundamental understanding of the mechanisms which hinder enhanced energy recovery.
- Improve application of advanced measurement equipment for an improved knowledge base of the relation emission formation, emission discharge and emission avoidance.
- Implement (trace) emission monitoring as an efficient contribution to process control.

RD4 Leader

Gabriella Tranell

Professor, NTNU

E-mail:
gabriella.tranell@ntnu.no

Metal Production Research Domains

RD1 - Fundamentals and modelling tools
RD2 - Primary metal production
RD3 - Recycling and refining
RD4 - Emissions and energy recovery
RD5 - Materials and Society

Konferanser og seminar

Miljøforum 2018

18. sep 2018
til 19. sep 2018

Næringslivets hus,
Middelthuns gate 27
Oslo

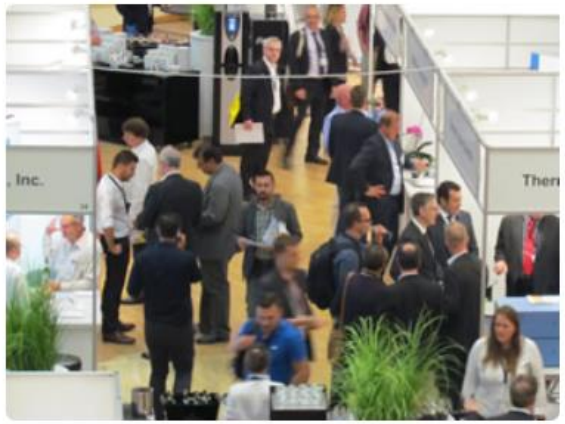
Påmeldingsfrist
13. september

Meld deg på →

Seminar for Norsk Industris medlemsbedriftene som får sin utslippstillatelse fra Miljødirektoratet.

CEM 2020 - Conference and Exhibition on Emissions Monitoring

The 14th CEM conference and exhibition on Emissions Monitoring will take place in the historic city of Kraków in Poland. Kraków is the second largest and one of the oldest cities in Poland with excellent road, rail and airport links for visitors and delegates to attend the meeting.



The CEM event started in the United Kingdom in 1997 and has been held in The Netherlands, Denmark, France, Switzerland, Italy, The Czech Republic, Turkey, Portugal, India and Hungary. Poland was chosen as the ideal location for 2020 due to its economic strength which has been growing steadily over the past 27 years which is a record high in the EU and the most impressive performance in Central Europe .Poland is the eighth largest economy in Europe and is the largest amongst the former Eastern Bloc members of the European Union. Poland has pursued a

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- ✔ CEM 2018 builds trust and reliability in emissions monitoring
- ✔ CSE releases India's first inspection manual for monitoring

Rapporten

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Objective (Now)

- To shed light upon how to measure diffuse emissions to the atmosphere surrounding industrial sites

The purpose of measuring diffuse emissions is to find:

- Sound documentation for new operating permit standards
- The contamination of the atmosphere (tons/year)
- The contaminant exposure in the surroundings of the work site (mg/m^3 or mg/hour)

An important question is what size fraction measurements should focus on.

SCOPE (Now)

- **Limited to metal production processes**
- **Largely focused around dust emissions**
- **No year limit in articles or work discussing methodology yet**
- **Both published and unpublished work will be discussed**
- Not included: prevention, reduction and capture procedures

CONTENT (Now)

INTRO DELEN

- Stakeholders
- The problem: *The lack of common methodology*
- What are diffuse emissions?
- Dust characteristics
  - General
  - Industri specific
- General guidelines and standards
- Meteorology, topography, and chemistry considerations
- Existing knowledge
  - BAT
- Methodology overview:
  - Top down
  - Source point of view – knowledge gaps

Methods (Top down view)

A. Ambient measurements	B. Indoor or escape measurements	C. Estimations and modelling	D. Impact trending
1. Fence line **2. Reverse dispersion modelling (EU standard)** 3. Upwind-downwind 4. Vertical planes 5. Source monitoring 6. Emission factor measurement 7. Lidar 8. Hot spot 9. Camera surveillance 10. Satellites 11. Wind directionality 12. Sticky-pad sampling	1. Traversing methods (flow and concentration) 2. Traces methods 3. Optical monitoring 4. Vision	1. Mass balance 2. Emission factors 3. Source addition 4. Emission dispersion	1. Bio monitoring 2. Ambient concentration 3. Fallout mass 4. Camera surveillance

BAT

ROM «Monitoring of emissions to air and water from IAD installations»

Juli 2018

- DIFFUSE EMISSIONS
- ca samme tanke måte i å organisere metodene
  - standard metoder
  - measurements at source
  - remote measurements
- Ikke mye informasjon
- Dette er ikke rett frem, og ressurskrevende og dyrt
- Høy usikkerhet

Veien videre

- Dette seminaret! Lære mere
- Flere medforfattere?
- Endelig versjon - distribusjon
- White paper → Review artikkel

- BREF og BAT status i industrien vi bør vite om
- Studier/artikler/rapporter vi bør vite om

Takk for meg!

Hege Indresand
hein@norceresearch.no

+4793046480