



## **MDEC Diesel Workshop**

Hilton Toronto Airport Hilton  
Ontario, Canada

Thursday, October 10, 2019

### **WORKSHOP Diesel Particulate Filter (DPF) Technology and Engine Technology Deployment**

- 07:30 – 8:30**      **Breakfast**
- 08:30 – 9:30**      Section 1 - Presenter: *Andreas C.R.Mayer*  
**DPF - system designs**
  - History and evolution of DPF systems
  - Modern DPF design and planned changes in design going forward
  - Pros and Cons of different designs
  - How to select a DPF-design for a given application
- 09:30 – 10:15**      Section 2 - Presenter: *Andreas C.R.Mayer*  
**The need for type approval with respect to physical and chemical properties**
  - Filtration with respect to particle size and number concentration
  - Emission profiles of THC, NO, NO<sub>2</sub> and CO for different DPF systems
  - Secondary emissions
  - What does measured engine emission concentration mean with regard to exposure or exceedance?
- 10:15 – 10:30**      **Break Time**
- 10:30 – 11:15**      Section 3 - Presenter: Chris Burrei (DPF Alternatives) and *Ralph Deayton (Mammoth)*  
**Maintaining Mining Diesel Engine Exhaust After-treatment Systems – new technologies for better performance and increased equipment uptime**
- 11:15 – 12:00**      Section 4 - Presenter: *Matt Roth (Caterpillar)*  
**Caterpillar Tier 4 Final - Technology and Deployment**
- 12:00 – 13:00**      **LUNCH**
- 13:00 – 13:30**      Section 5 - Presenter: *Evelynn Stirling (Cummins)*  
**Experience with Enabling Technologies**
- 13:30 -14:00**      Section 6 - Presenter: Bob Deprez (AirFlow Catalyst Systems)  
**Diesel Particulate Filters (DFFs) in both new and retrofit applications**

- 14:00– 14:30** Section 7 - Presenter: *Andreas C.R.Mayer*  
**Risks, Failures, Challenges Monitoring and Maintenance**
- Monitoring DPF quality and periodic inspection
  - Safety aspects e.g. exceeding the manufacturer's heat threshold
  - Sintering or loss of precious metals, resulting in premature decline in the catalyst coating/life of filter
  - Periodic cleaning DPFs – are DPF cleaning firms certified?)
- 14:30 – 14:45** **Break Time**
- 14:45 – 16:00** Section 8 - Presenter: *Andreas C.R.Mayer*  
**DPF application worldwide**
- Legislation enforces DPF in Europe (since 2011), China (2017) and India (2020)
  - Combination of DPF and deNox strategies
  - Engine strategies to optimize exhaust after-treatment (EAS)
  - Type approval and PTI
  - Assessing best available technology BAT
- 16:00 – 16:30** Section 9 - Vahid Hosseini (University of Alberta)  
**Feasibility study of diesel particulate filter (DPF) retrofit solutions**
- 16:30** Adjournment