



CCGEx at the Royal Institute of Technology (KTH) • [www.ccgex.kth.se](http://www.ccgex.kth.se)

## Research day program, 11-12 October, 2018, Stockholm

### Competence Center for Gas Exchange @ KTH

#### Agenda - Day 1

11 October 2018

First Hotel - Nortull Konferenshotell, Sankt Eriksgatan 119, 113 43 Stockholm

09:45-10:00 **Registration & Coffee**

10:00-10:30 **Opening by CCGEx Director**- Anders Christiansen Erlandsson  
2014-2017 CCGEx Summary Report on Research Activities

#### Part 1 Ongoing Projects

10:30-11:05 **Research Area: Compressor Off-Design Operation (CoD)**

- Mihai Mihaescu: intro + overview (5 minutes)
  - o Mihai Mihaescu, KTH-Mek (10+5 min). *"Compressor Flow Instabilities at Low Mass Flow Rates: an LES approach."*
  - o Asuka G. Pietroniro, Ind. PhD Student, Volvo Cars (10+5 min). *"Computational Aeroacoustics of aerodynamically generated sound in Centrifugal Compressors."*

11:10-12:15 **Research Area: HOTSIDE**

- Mihai Mihaescu: intro + overview (5 minutes)
  - o Marcus Winroth, KTH-Mek (10+5 min). *"Gas Dynamics of Exhaust Valves."*
  - o Ted Holmberg, KTH-ICE (10+5 min). *"Valve Strategies and Exhaust Pulse Utilization."*
  - o Shyang Maw Lim, KTH-Mek (10+5 min). *"Aerothermodynamics and Exergy Analysis in Turbocharger Radial Turbine."*
  - o Nicholas Anton, Ind. PhD Student, SCANIA (10+5 min). *"Engine Optimized Engine Turbine."*

12:30-13:30 **LUNCH**

13:30-14:20 **Research Area: Engine After Treatment (EAT)**

- Mats Åbom: intro + overview (5 minutes)
  - o Zhe Zang, KTH-MWL (10+5 min). *"Agglomeration of Particles in Gas Exhaust Systems by using Acoustics"*.
  - o Ghulam M. Majal, KTH-MWL/Mek (10+5 min). *"Agglomeration of Particles in Exhaust Gases by flow manipulation."*
  - o Arun Prasath, KTH-ICE (10+5 min). *"Particulate characterization in the Gas Exchange Systems of DI/SI Engines."*



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**14:25-15:00 Research Area: Power Train System Integration (SYSINT)**

- Anders Christiansen Erlandsson: intro + overview (5 minutes)
  - o Senthil Krishnan Mahendar, KTH-ICE (10+5 min). *"Heavy Duty DISI Gas Exchange Processes with Alternative Fuels."*
  - o Sandhya Thantla, KTH-ICE (10+5 min). *"Low Temperature Waste Heat Recovery (WHR) in IC Engines."*

**15:00-15:30 COFFEE**

**Part 2 Interviews (two parallel sessions – island configurations)**

15:30-16:10 IAB interviews with PhD Students

15:30-16:10 Interaction between senior researchers /faculty at CCGEx & Industrial Partners

16:10-16:50 IAB interviews with senior researchers and faculty at CCGEx

16:10-16:50 Interaction between industry partners

16:50-17:30 IAB meets industry partners

**18:00 DINNER at Nortull Konferencetotell**

End of Day 1

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## Agenda - Day 2

12 October 2018

Brinellvägen 83, room Gladan, KTH-Campus, Stockholm

08:30 **Kick-off the new program period by CCGEx Director**- Anders Christiansen Erlandsson  
Background, Program formulation & Targets, Organization, Financing

09:00-10:15 **New Research Areas, Projects, and Students**

- i-COLD Mihai Mihaescu:
  - o Compressor Response to upstream/downstream installation effects and perturbations – Emelie Trigell, PhD Student
  - o Aerodynamically generated noise of centrifugal compressors – Experiments – Post Doc (NN)
  - o Non-linear system identification techniques for acoustic characterization of turbochargers under high level of pulsating flow excitation - *Marie Curie student* Niloofar Sayyad Khodashenas (4:th year) – *Associated project*
- i-HOT Mihai Mihaescu:
  - o Turbocharger turbine efficiency in steady and pulsating inlet flows – experiments – Yushi Murai, PhD Student
  - o Turbine performance optimization with focus on maximizing exergy transfer – Roberto Mosca, PhD Student

10:15-10:45 **COFFEE**

10:45-12:00

- i-SYS Anders Christiansen Erlandsson:
  - o Exergy losses in high efficiency charging – Beichuan Hong, PhD Student
  - o Engine charging and EAT interaction during transients – Varun Venkataraman, PhD Student
  - o Waste Heat Recovery in Pulsating Flows-New techniques – Jianhua Zhou, Post-doc

12:00-13:00 **LUNCH**

13:00-14:00 **IAB meets CCGEx leadership team**

- Summary of impressions

14:00-15:00 **Optional Lab Tour**

End of Day 2

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