



LUND
UNIVERSITY

Kompetenscentrum Förbränningsprocesser, KCFP 2010-2013

(Competence Center Combustion Processes)

Reference group meetings, September 13-14 2012

by

Bengt Johansson
Director of KCFP,
Lund University

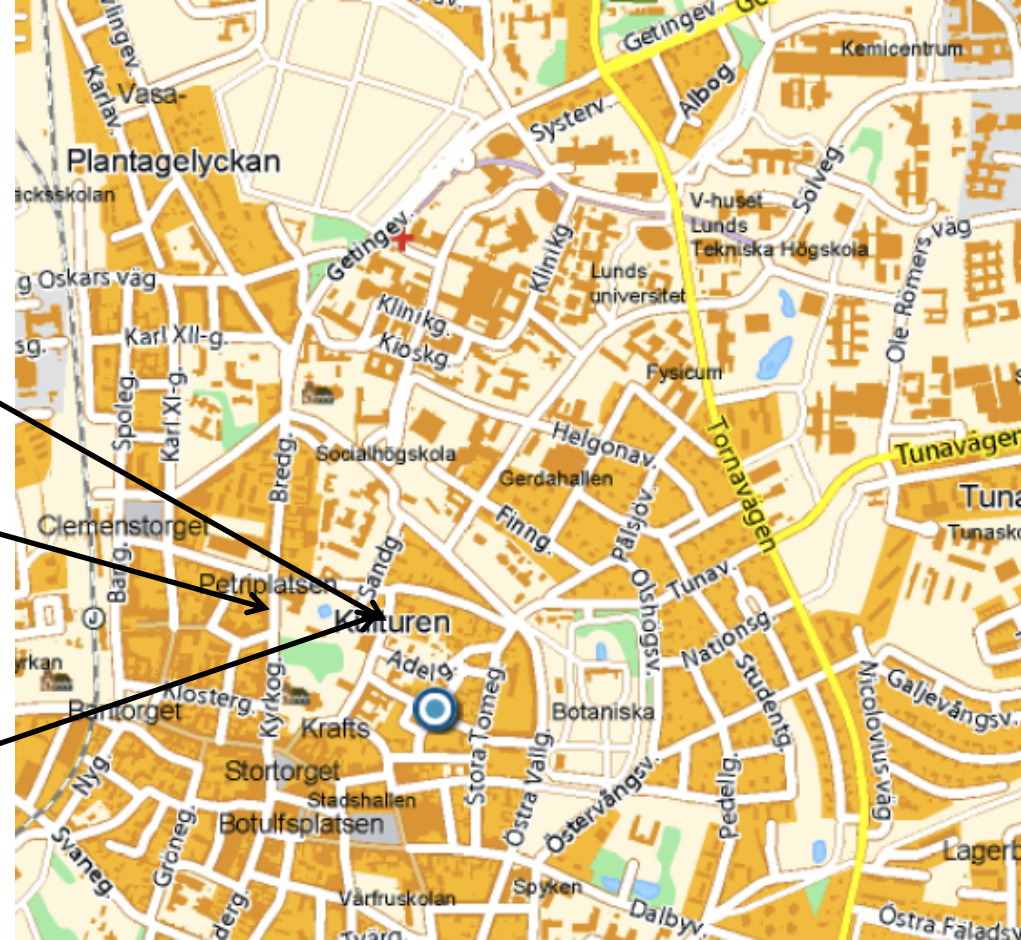
Agenda (short)

September 13

- 10.00-12.00, Meetings
- 12.00-13.15, Lunch
- 13.15-17.00, More meetings
- 19.00 Dinner at Mat & Destillat

September 14

- 10.00-12.00 Meetings
- 12.00-13.15 Lunch
- 13.15-15.00 Meetings



Agenda, September 13

10.00-10.15: Introduction, Bengt Johansson

10.15-11.00: PPC-Heavy Duty

11.15-12.00: PPC-HD simulations .

12.00-13.15 Lunch at Kulturen restaurant

13:15-14:00 PPC light duty

14:00-14.45 PPC – model

14:45-15:00 Coffee

15:00-15.45 PPC fuel

15.45-16.30 PPC Control

19.00-22.00 Dinner at “Mat och Destillat” Address: Kyrkogatan 17, Lund which is the other side of the park “Lundagård” at which “Kulturen” is located. (<http://matochdestillat.se/>)



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Patrick Borgqvist: Partially Premixed Combustion - Light Duty, The Low Load Limit

Zheming Li: Investigation of the Mixture Preparation in PPC using kHz fuel tracer PLIF

14:00-14.45 PPC – model

- 1) Rickard Solsjö, LES of mixing and combustion in a light duty PPC engine
- 2) Mehdi Jangi, Numerical study of combustion and emissions in a PPC engine using finite-rate chemistry and CCM

14:45-15:00 Coffee

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Hadeel Solaka: Analysis of Surrogate Fuels Effect on Ignition Delay and Low Temperature Reaction during Partially Premixed Combustion

15.45-16.30 PPC Control

Maria Henningsson: Principal Component Analysis and Neural Network Modeling for Prediction of Engine Emissions from Cylinder Pressure Data



Agenda, September 14

10.00- 12.00 Gendies

1. Öivind Andersson: Introduction (ÖA) 10-15 min
2. Clement Chartier: Air-Entrainment in Wall-Jets Using SLIPI in a Heavy-Duty Diesel Engine 30 min
3. Richard Solsjö: LES Study of Jet-Wall Interaction in an Optical Heavy Duty Diesel Engine 30 min
4. Guillaume Lequien: Effects of Jet-Jet Interactions on the Liquid Fuel Penetration in an Optical Heavy-Duty DI Diesel Engine 30 min (Include a few slides on the LabView update)
5. Yann Gallo: Development of a Laser Extinction Setup for Soot Measurements 15-20 min

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13.15-14.00 Gas engine

Ashish Shah: Pre-chamber spark plugs – further heat release analysis and applicability of Ionization Current Sensing technique

14.00-15.00 Waste heat recovery

Prakash Narayanan: The waste heat recovery project

15.00 The end of the KCFP meeting



KCFP news

- Lack of funding:
 - Saab dropped out 2011
 - SGC will not fund 2013, new funding period from them not clear at the moment
- More members needed



New members of KCFP


1. Borg Warner
2. Loge
3. Dantec
4. Senfusion



New members of KCFP

Letter of intent:

BorgWarner Engin. Group	Advanced Engine/line	Towerton Technical Center	9870 Aurumelon Avenue Auburn, MA 01501-4025	Tel: 508.744.6510
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August 1, 2011

Board of the KCFP Consortium
Centre of Competence Combustion Processes
Faculty of Engineering, LTH
SE-221 00 Lund,
Sweden

Dear Sir or Madam,

Referring to our visit in December last year and a telephone conference with Professor Bengt Johansson, we are planning to join the KCFB Consortium at the University of Lund.

With this letter BorgWarner Inc. is applying for a membership in the engine development consortium KCFB, starting from the 2nd half of 2011 till the end of the current phase in 2014. Regarding the membership fees, we propose the following model:

We are willing to pay the major part as direct cash payment:

2011 (6 month):	30T€,
2012	35T€,
2013	35T€.

In addition to the cash transfer BorgWarner offers to support the research work with the development and delivery of the following systems:


- Pressure sensor glow plugs with control unit and signal processing
- 2-stage turbo systems matched to the needs of the pass-car and/or HD engine application


We would very much appreciate if a decision can be made in time before the consortium board meeting in September so that, in case the decision is to accept BorgWarner as a new member, we could already attend this upcoming meeting.

We are looking forward to your response.

Sincerely,


Dr. Michael Becker
Director Advanced R&D
BorgWarner


Dr. Wolfgang Wenzel
Program Manager
BorgWarner



New members of KCFP

Letter of intent:



Dantec Dynamics A/S
Tomsboalleen 16-18
P.O. Box 121
DK-2740 Skovlunde, Denmark
Phone: +45 44 57 80 00
Fax: +45 44 57 80 01
Web: DK 13 10 75 88
www.dantecdynamics.com

September 01, 2011

Competence Centre for Combustion Processes

Letter of Intended support for the Competence Centre for Combustion Processes


To whom it may concern,

Dantec Dynamics is a supplier of integrated optical measuring systems for diagnostics and research into fluid mechanics, spray and combustion analysis.


Dantec Dynamics is interested and willing to support the Competence Centre for Combustion Processes as an Industrial Partner with the loan of a state-of-the-art TR PIV system (Time Resolved Particle Imaging Velocimetry) for investigations within the Competence Center. The suggested in-kind contribution includes furthermore the support of the experimental investigations involving the TR PIV system by Dantec Dynamics' application specialists with expertise knowledge in laser diagnostics, fluid mechanics and combustion analysis.

The TR PIV system can be combined with the TR LIF systems (Time Resolved Laser Induced Fluorescence) at Lund University and give unique insight in the dynamic interactions between the flow-field and the combustion processes in an engine. The intended in-kind contribution from Dantec Dynamics (TR PIV system and specialists support) would certainly benefit the on-going research work within the Competence Center producing new material for scientific publications in that field.

Kind regards,



Jean-Marc Muller
General Manager, Dantec Dynamics A/S



Partners for progress



New members of KCFP

Letter of intent:



Lund, 2011-03-15

Karin Fröjd
LOGE AB

E-mail: kfrojd@loge.se
Phone: + 46 46 286 24 81
Fax: + 46 46 286 8603

LOGE AB are interested to join the Kompetenscentrum för Förbränningsprocesser, KCFP

Lund Combustion Engineering, LOGE AB, is a software provider and consultant company in the field of chemistry modeling. The company is specialised to in-cylinder combustion and aftertreatment modeling. LOGE is the main developer of the software DARS, used to model engine processes. LOGE is very interested to join the Competence Centre for Combustion Processes, to exchange knowledge, software and data in this field.

LOGE offers to provide 3 seats of DARS Basic and 8 DARS Basic hpc as inkind contribution to the Competence Centre at LTH in Lund. The licenses will last for the duration of the collaboration. In exchange LOGE would like to receive experimental data to use for validation and further development of the code package DARS. The data will be used to, after approval from the Competence Centre, create publications jointly with the members of the Centre.

Budget information:

Cost of the first seat is € 8 000. The two additional seats gain a discount of 20%. Prices for DARS Basic hpc packages as seen in the table below.

DARS Basic 1 st seat	€ 8 000
DARS Basic 2 nd seat	€ 6 400
DARS Basic 3 rd seat	€ 6 400
DARS Basic 1 hpc	€ 1 680
DARS Basic 7 hpc	€ 6 170
Total	€ 28 650
Total (based on www.oanda.com , 2011-03-11)	SEK 252 319

LOGE AB, Scheelevägen 17, 82, S-22370 Lund, Sweden
Company Registered in Sweden: 556681-1807,
VAT: SE 556681180701
Internet: www.loge.se, E-mail: contact@loge.se

Bank: Sparbanken Finn Account: 9300 007104.623-9
Account holder: LOGE AB
IBAN: SE80 9300 0000 0000 71046239
SWIFT-Address: NDEASESS



New members of KCFP

Letter of intent:

Kompetenscentrum Förbränningsprocesser
Att: Prof Bengt Johansson
LTH, Energivetenskaper
Box 118
221 00 Lund



Senfusion AB

Postal address:
Gunnebogatan 9, SE-653 49 Karlstad
Visiting address:
Scheelevägen 17, SE-223 70 Lund
Sweden

Phone: +46 70 843 60 82
www.senfusion.se

Registered office: Göteborg, Sweden
Registered No.: 556823-8454

Lund, August 30, 2011

Ansökan om medlemskap

Senfusion AB är ett nystartat företag med fokus på analys av förbränningsprocesser i motorer via mätning av så kallad jonström. Jonströmsteknik har attraherat mycket uppmärksamhet under många år och tekniken har gäckat både industrin och akademien. Jonströmsignalen innehåller mycket information om förbränningsprocessen, men den påverkas av flera faktorer utanför vår kontroll som har gjort att estimat av förbränningsparametrar via jonström inte varit tillräckligt robusta för kommersiell användning. Senfusion AB har genom innovativ signalbehandling avsevärt förbättrat analys av förbränningsprocessen via jonström.

Senfusion AB utvecklar algoritmer för signalbehandling av jonströmsignaler från förbränningsmotorer som ger information om *cylinderindividuell* förbränningsfas, förbränningshastighet samt moment, vilket möjliggör en balansering och optimering av motorn under drift. Annan förbränningsinformation som t.ex. knock och feltändning hanteras också. Genom dessa estimat kan motorn styras bättre och anpassas till variationer i bränsle och luft kvalitet. Nya lagkrav som t.ex. de från CARB angående cylinderindividuell balansering med avseende på AFR som träder i kraft 2013 kan tillmötesgåas.

Senfusion AB ansöker med detta brev om medlemskap i KCFP. Senfusion vill bidra till förbättrad styrning av förbränningsmotorer med hjälp av den jonströmteknik vi kan tillhandahålla. Senfusion vill se vilka förbättringar som kan åstadkommas med hjälp av den teknik vi utvecklat samt i samverkan med KCFP utvärdera detta och publicera resultaten. Eftersom Senfusion är ett nystartat företag kan vi inte bidra med pengar till KCFP i detta läge, men våra resultat tror vi är intressant för KCFP:s medlemmar att få insyn i och vi kan bidra med vårt kunnande inom förbränningsanalys. Vi emotser KCFP:s svar och ser fram emot ett fruktsamt samarbete!

Högaktningfullt,



Jakob Ångeby, VD Senfusion AB

Ternsöbils Luthers. Issue 17/2011-03

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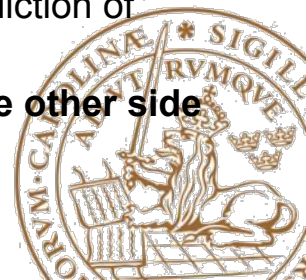
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