

I. IDENTIFICATION DATA

Thesis name:	Gaseous fuel supply for a gas engine with a scavenged pre-chamber
Author's name:	Nishanth Nithyanandham
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Automotive, Combustion Engine and Railway Engineering
Thesis supervisor:	Zbyněk Syrovátka
Supervisor's department:	Department of Automotive, Combustion Engine and Railway Engineering

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	easy
<i>Evaluation of thesis difficulty of assignment.</i>	
A model of single cylinder engine and experimental results were provided. Student's task was design and check of the gas rail for four-cylinder engine.	

Satisfaction of assignment	fulfilled
<i>Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.</i>	
Gas rail system was designed and verified by 1-D simulation at full load curve.	

Activity and independence when creating final thesis	D - satisfactory.
<i>Assess that student had positive approach, time limits were met, conception was regularly consulted and was well prepared for consultations. Assess student's ability to work independently.</i>	
At the beginning poor activity. Everyday step by step supervision was necessary. Final result is satisfactory.	

Technical level	D - satisfactory.
<i>Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.</i>	
Poor background knowledge resulted in long delays in solving practical problems.	

Formal and language level, scope of thesis	D - satisfactory.
<i>Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.</i>	
At thesis contains a lot of grammatical errors and non-technical language.	

Selection of sources, citation correctness	C - good.
<i>Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.</i>	
Explanation of similar works on pressure pulsation was lacking.	

Additional commentary and evaluation
<i>Present your opinion to achieved primary goals of thesis, e.g. level of theoretical results, level and functionality of technical or software conception, publication performance, experimental dexterity etc.</i>
Original plan was a calculation of the full performance map and design of guide lines for engine control strategy including comparison of lean and stoichiometric ($\lambda = 1$) strategies. Due to slow progress only stoichiometric operation at full load was completed.



SUPERVISOR'S OPINION OF FINAL THESIS

III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

Summarize thesis aspects that swayed your final evaluation.

A daily based guidance was necessary to ensure continuous work progress. Nevertheless, I evaluate the thesis as a useful tool for guiding multi-cylinder engine experiments.

Therefore, I evaluate handed thesis with classification grade **D - satisfactory**.

Questions:

What are the benefits of lean engine operation with scavenged pre-chamber compared to conventional SI engine? How the engine power output can be controlled?

Date: **3.9.2018**

Signature: Z. Srovátka