

## **Review of the Master Thesis CTU-ITB**

### **Reviewer:**

Dr Satrio Wicaksono  
Assistant Professor at Faculty of Mechanical and Aerospace Engineering  
Bandung Institute of Technology, Bandung, Indonesia

### **Title of the Thesis:**

Analysis of The DNOx 2.2 System's Equalizing Membrane Stress

### **Prepared by :**

Marek Pitra, Master Student of Czech Technical University (CTU) and Bandung Institute of Technology.

### **Introduction**

Before the reviewer has taken the responsibility to review this thesis, the reviewer knew Mr. Marek Pitra as one of the attendee of the Transmission and Drive-line Class in 2015. When taking the class, Mr. Marek Pitra showed good understanding on the lecture given and received very good result. After reading Mr. Marek Pitra thesis, the reviewer were convinced that Mr. Marek Pitra is a good student resulting to this excellent research.

### **Review :**

The work that has been done is mainly about stress analysis of the flutter membrane in DNOx 2.2 system. At the beginning, review on the after treatment system to reduce NOx gasses have been presented in the thesis. The complete review on the selective catalytic reduction (SCR) systems especially Denoxtronic systems and its mechanism were also performed. Additionally, the problem on the flutter membrane was described clearly as well. Flutter membrane stress analysis as well as design improvement were done using FEM. There were 3 optimization design and the 3rd design shows the best result which might help with the current problem.

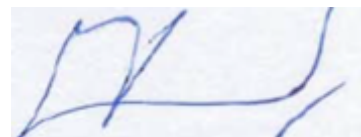
### **Conclusion:**

From the review process that has been done, it is reasonable to say that Mr. Marek Pitra has done an excellent research work and report on the flutter membrane stress analysis and design improvement.

**Mark :** Excellent

**Bandung, 30 January 2017**

**Signature of the reviewer**



**Reviewer: Dr. Satrio Wicaksono (ITB-Indonesia)**

**List of Questions :**

1. The language used in some of this thesis is little bit informal and need to be fixed, e.g.: Reader of this thesis may realize, as sameas **I** did, that even failure of at the first sight unimportant (page 12), etc.
2. What is the main contribution of the current research?
3. What is the use of testing two different types of specimen (long and short)?
4. Please explain the reason behind number of elements used in the FEM models? Were those number of elements came from convergence test results?