Classification of Diploma Thesis – opponent

Author of classification:	Ing. Ondřej Němček, Ph.D.
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Opponents:	Ing. Ondřej Němček, Ph.D.
Title:	Proposal of Rotary Kiln for Hazardous Waste Incineration Plant.
Thesis version:	1
Student:	Mohammed Navas Korath Ellathvalappil

1. *Problematics of thesis*

   The work deals with the Proposal of Rotary Kiln for Hazardous Waste Incineration Plant. Due to the need to deal with hazardous waste produced in many various installations and other producers, this topic is up to date. The assignment of the topic fully corresponds to the student's abilities to deal with it.

2. *Achieved results*

   The student fulfilled the requirements in according to the assignment of the thesis, but there are few comments that need to be listed. The thesis contains both proposal of the device and equation solutions. Due to the difficulty of solved problematics, several variants of calculation are listed. There is thermal and combustion calculation, but aerodynamic calculation is missing. There are mistakes in equations that will influence the whole proposal (calculations mistakes of combustion air, concentration of hydrogen, power output of burner, etc. …). If this work will be as real blueprint for the construction of rotary kiln, precise and checked calculation must be provided without mistakes! Even thus, this work with some comments can be used as a guide for specific proposal and installation design.

3. *Originality of thesis*

   Work can be considered an authentic work of a student. The thesis topic review contains clear references to citations.

4. *Formal essentials of thesis*

   The work complies with the principles for thesis elaborations. In terms of content and grammar, it is at a good level, with only minor typos (like mix of languages) and several discontinuous phrases and flimsy graphic of some equations. The graphical part of figures is clear. The work is done clearly and logically.

5. *Questions to student*

   A) What other hazardous material can be burned in the rotary kiln, is there possibility to burn radioactive waste or biohazard waste, are there some extra restrictions?
   B) What are the limits of pollutants for flue gas compared to the limits of flue gas produced by classic power plants (for example coal fired)?

6. *General revaluation of thesis*

   I recommend the thesis for defense with minor reservations.

Overall classification: good

Ostrava, 05.10.2020

Ing. Ondřej Němček, Ph.D.