

# **Supervisor review of dissertation thesis**

Student: Ing. Ziad Alsibai

Supervisor: Doc. Ing. et Ing. Fabian Khateb, Ph.D. et Ph.D.

Title: Low Voltage Low Power Analogue Circuits Design

## **- Evaluation of the student during his study:**

Student started his doctoral study at Brno University of technology in year 2011 and in year 2013 he passed successfully the doctoral state exam. Student through his doctoral study required further support needed to achieve the goals of his study and thesis.

## **- Evaluation of the doctoral thesis:**

The topic of the dissertation thesis belongs to up-to-date research area in the filed of designing low-voltage (LV) low-power (LP) analog circuits. These circuits are highly demanded for portable, wearable electronics and biomedical applications.

The student provided a survey and detailed analyses of LV LP techniques used nowadays and he concluded the advantages and disadvantages of each of these techniques.

The dissertation thesis consists in the design and analyses of new CMOS structures of analog circuit to be capable to work with LV supply around 0.6 V and consume LP in range of  $\mu\text{W}$ . The functionality of these circuits was confirmed by simulation using PSpice program using 0.18 $\mu\text{m}$  CMOS technology. The dissertation thesis introduces several interesting applications based on the designed LV LP CMOS structures. Some of these structures and applications were published in international journals such as International Journal of Electronics and Electrical Engineering in USA.

From formal arrangement point of view the text of the dissertation contains some typos and several figures have different styles of drawing. The content of some tables are not well discussed in the text.

## **- Final evaluation:**

I can conclude that the level of thesis is sufficient and that the main goals of the thesis were fulfilled. Therefore, I recommend it for defense.

June 27, 2014

Doc. Ing. et Ing. Fabian Khateb, Ph.D. et Ph.D.