11·2

FAKULTI: FAKULTI KEJURUTERAAN ELEKTRIK
TAJUK: PERMOHONAN PELANJUTAN PEMBETULAN TESIS

BUTIRAN PELAJAR	KETERANGAN PELAJAR	ULASAN DAN TINDAKAN FAKULTI	KELULUSAN
NAMA : SUMAIYA RAHMAN **NO K/P @ ISID : 201409F10159** **NO MATRIK : MKE143036** **PROGRAM : SARJANA FALSAFAH KEJURUTERAN ELEKTRIK** **JENIS PENGAJIAN : PENYELIDIKAN** **BENTUK PENDAFTARAN : SEPENUH MASA** **PENYELIA : PROF. MADYA DR. HASIMAH BINTI ABDUL RAHMAN** **BIL SEM: 7 / 8 (SEMESTER 1, SESI 2017/2018)** **STATUS : PEPERIKSAAN** **PEMERIKSA LUAR: PROF. MADYA DR. AHMAD MALIKI BIN OMAR (UiTM)** **PEMERIKSA DALAM: PROF. MADYA DR. AZHAR BIN KHAIRUDDIN** **PENGERUSI: PROF. MADYA DR. NIK RUMZI BIN NIK IDRIS** **MUKASURAT : 1/1**	1.1 Pelajar telah menjalani peperiksaan lisan dan perlu menghantar tesis bagi tujuan pembetulan tesis. 1.2 Kronologi pelajar adalah seperti berikut : **Bil** / **Tarikh** / **Perkara** 1 / 02/11/2017 / Pelajar menghantar tesis bagi tujuan peperiksaan lisan. 2 / 27/12/2017 / Peperiksaan lisan dijalankan. Pelajar mendapat keputusan c1 (6 bulan). 4 / 26/06/2018 / Tarikh akhir pelajar perlu menghantar pembetulan tesis ke fakulti. 5 / 26/04/2018 / Pelajar menghantar surat permohonan untuk melanjutkan penghantaran pembetulan tesis pada 26/07/18. 1.3 Pelajar memohon masa tambahan masa selama 1(satu) bulan atas sebab yang berikut : i. Memerlukan masa untuk menganalisis semula model yang dibangunkan. ii. Masalah kewangan dan visa suaminya yang akan tamat tempoh pada 08 Mei dan perlu pulang ke Bangladesh. iii. Menghidap *Polycystic Ovarian Syndrome* yang teruk dan memerlukan rawatan lanjut di Bangladesh.	1.1 **Mesyuarat Jawatankuasa Akademik Fakulti yang telah diadakan pada 30 April 2018 telah menyokong permohonan pelanjutan pembetulan tesis pelajar selama 1 (satu) bulan atas sebab kesihatan.** 1.2 Lampiran dokumen yang berkaitan: i. Surat permohonan perlanjutan tarikh pembetulan tesis yang disokong oleh penyelia. ii. Salinan butiran perancangan pembetulan tesis. iii. Salinan laporan kesihatan.	Disokong / ~~Tidak disokong~~ PROF. DR. JOHARI HALIM SHAH BIN OSMAN Dekan **Dekan FB (Akademik)** Fakulti Kejuruteraan Elektrik **& Cop Rasmi** Universiti Teknologi Malaysia 81310 UTM Johor Bahru Johor Darul Takzim Tarikh : 14.05.18 Setuju / Tidak Setuju (Ulasan) _____ _____ _____ **Pengerusi Mesyuarat Jawatankuasa Akademik Pengajian Siswazah Universiti (JAPSU) &** **Cop Rasmi** Tarikh : _____

26 April, 2018

Assoc. Prof. Dr. Nasrul Humaini Bin Mahmood
Postgraduate Academic Manager
Faculty of Electrical Engineering
Universiti Teknologi Malaysia
81310, UTM, Skudai,
Johor Bahru

Sir,

Application for Extension of Thesis Period for 1 (One) Month

Referring to the above, I would like apply for an extension of the duration of my thesis correction. My details are presented below.

Name: Sumaiya Rahman
Matrix: MKE143036
Course: Master of Philosophy
Faculty: Electrical Engineering
Supervisor: Prof. Madya Dr. Hasimah Binti Abdul Rahman
Research Title: 'Control of Critical and Non-Critical Loads in Microgrid Using Logic Gate Based Controller'

2. Based on my thesis evaluation letter dated December 27, 2017 (reference number: UTM.J.23.16 /14.14 / 1/6/1 Jld.7 (72)), I am required to resubmit the thesis before or on 26 / 06/2018.

3. I have been working very hard to finish the corrections suggested by my examiners. But I am afraid that I will not be able to complete within 26th of June. As I was suggested to add storage unit and delay in my system, I have to recalculate, re-simulate and reanalyze all my models. In addition, I have several system models and multiple scenarios, which takes significant amount of time. I have to perform my one year long simulation works and calculations all over again.

4. Additionally, I have to go back to my country on 6th May, 2018 as my husband's visa expires on 8th May this year and we do not have any financial support. I am suffering from severe Polycystic Ovarian Syndrome which requires immediate treatment that I cannot afford here anymore. For these reasons, I have to move back to my country.

3. Hence, I would like to request to grant me an extension to finish corrections of my thesis for another 1 (one) month (from 26th June 2018- 26th July 2018). I promise to complete this correction with the extended time. Your cooperation is highly appreciated.

Thank you.

Yours sincerely,
Sumaiya

Sumaiya Rahman

Supported by,

Prof. Madya. Dr. Hasimah Binti Abdul Rahman
Student's Research Supervisor
Center of the Electric Power System (CEES)
Faculty of Electrical Engineering
Universiti Teknologi Malaysia

Prof. Madya Dr. Hasimah Binti Abdul Rahman
Timbalan Pengarah
Pusat Sistem Tenaga Elektrik (CEES)
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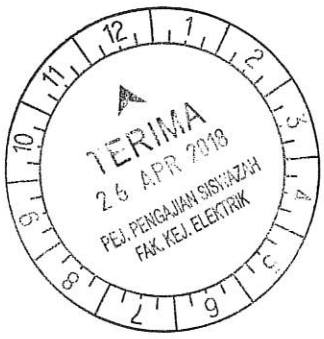

List of Corrections (Viva Report)	27th December 2017- 26 June 2018						
Title of the Thesis							
	Mark	**Month 1**	**Month 2**	**Month 3**	**Month 4**	**Month 5**	**Month 6**
1. Title of the thesis is fine							
Abstract							
1. Critical review of previous work has to be included 2. Bahasa need to be revised 3. Refer to the recommendations from the report	Not Done						
Chapter 1 (Introduction)							
Refer to the recommendations by the examiners from the reports 1. Problem statement does not match the objectives 2. Objectives need to be modified 3. "Contribution of Research" need to be added	1 and 2 are done	×	×				
Chapter 2 (Literature review)							
Refer to the recommendations by the examiners from the reports 1. Need to add critical comments to the review **2.** Need to add review on the control at circuit level **3.** Remove some of the irrelevant sections	1 and 3 done, 2 partially done	×	×	×	×	×	×
Chapter 3 (Research Methodology)							
Refer to the recommendations by the examiners from the reports 1. Figure 3.1 (Methodological Framework) need to be revised 2. To include delay element in Fig 3.11- this in all analysis 3. Need to clarify why 300 V threshold is used 4. Figures are too small 5. Energy storage has to be included in the simulation	1, 3, 4 done 2 and 5 partially done	×	×	×	×	×	×

Chapter 4 (Results And Discussions)							
Refer to the recommendations by the examiners from the reports 1. All figures has to be followed by detail explanations and discussions 2. Some of the waveforms need more explanations 3. Need to identify the simulation problem and logical problem 4. Analysis on additional elements in the simulation has to be included	Not done		×	×	×	×	×
Chapter 5 (Conclusions and Recommendations for Future Work) 1. Need to highlight the contribution of the thesis 2. Refer to the recommendations from the report 3. Rewrite based on new findings and results	Not done						×

Issue to address	Corrections from the Examiners	
	Internal	External
Abstract		
Include critical review	√	
Abstrak		√
Translation needs improvement		√
Chapter 1		
Elaborate the definition of critical and non-critical loads	√	
Brief introductory description of Figure 1.1 from the perspectives of main components in MG	√	
Figure 1.1: put bi-directional converter		√
Connect main grid to MG through master MG controller		√
During islanded mode, which component generate reference voltage and frequency to AC bus		√
Practical architecture of Figure 1.1		√
Some brief and general descriptions on other controllers' disadvantages that lead to selection of proposed LGBC	√	√
Objectives need to match Problem Statements	√	
Paragraph 1 can be moved to introduction section	√	
Enhance paragraph 2 by highlighting the shortcomings of other controllers	√	
Specify problem statement 1		√
Obj 2: Clearly describe in what aspect need to improve controller		√
Obj 3: Validation is not objective		√
Merge objectives (i) and (ii) related to LGBC development	√	
Add another objective related to implementation for critical and non-critical load considerations	√	
Sec 1.4: Fixed irradiance not practical		√
Improve significance of the research	√	

Explain why 3 sets of irradiance of 3 sites		√
Rewrite Thesis Organisation, Remove Chapter 1 in Rewrite Thesis Organisation	√	
Clear significance		√
Explain what type controller		√
Explain statement		√
Chapter 2		
Overall framework of MG with components and discussion in relation to scope of the research covered in the thesis	√	
Rewrite all the sections that is marked in the thesis	√	
Add circuit level critical review	√	
Rewrite first paragraph and focus on important aspect of MG wind energy system	√	
Equations (2.1) to (2.4) is it related to this research?	√	√
Figure 2.4 suggested to be removed	√	
"Total … 4486,790 MW….", needs citation		√
Section 2.2.3 Fuel cell if not covered in this research remove	√	
Table 2.3 rewrite in paragraph form with critical review treatments	√	
Rewrite, if not covered in this research remove	√	
Needs many revisions Refer to thesis comments	√	
Not recommended to use first name in the thesis		√
"The goal of this research…" should be moved to research objective		√
"The fundamental objectives…" repeating from page 3		√
Make correction on title		√
Make correction on text arrangement		√
"In the first level of control…. Based Der unit" Typo error.		√
"Figure 2.11 show…" Grammar error		√
Figure 2.11		√
Dynamic behaviour		√
Review critically	√	
Section 2.7, only general description of PV is enough	√	

"In most research, simulation…. Solar irradiance used is 1000 W/m^2" No references was cited		√
Figure 2.11: Make correction on title		√
Should not cite references in this section		√
Chapter 3		
Section 3.2: Elaborate on the general steps to achieve the research as noted in Figure 3.1 Refer to thesis comments	√	
Make all the correction on equations. Refer to thesis comments	√	
"Obtaining… using" Sentence not complete		√
Why choose PV model in objective 1 different from objective 2		√
Why in the modelling used 3 DERs whereas in case studies used on 1 DER		√
Why use logic gate controller? Why [12]. Need clarification		√
Why did not use Energy storage unit		√
"Here" should be "Where"		√
Typo errors. Include variables definitions		√
Equation 3.9, Equation 3.12. Change "*" with "x" for multiplication		√
Need clarifications on equations, flowchart and methodology proposed Refer to thesis comments	√	
Replace "… the equation (3.15)…" with "… the equation (3.16)…"		√
Replace "Error tollerance" with "Error tolerance"		√
Please correct the title		√
Please correct the title		√
Figure 2.9: What type of PV inverter? Grid connected or standalone? If grid connected need reference voltage and reference frequency at AC bus to work. So, where is the generator to generate those references? If standalone inverter, then explain how it works.		√
The controller is a simple OR gate logic which is like reference 12 (page 27). So, what is the contribution by the author?		√
The system is not stable due to absent of storage component. Contradict with the statement on page 20.		√
Please correct the title		√
The author used controller circuit in Figure 3.11 like figure 2.11. What is the contribution?		√
Table 3.4. Questionable truth table S=0, What is R? Q=1 Q'= 0		√

S=1, What is R? Q=0 Q'= 1		
What is the reason of using 300V as a threshold voltage		√
Figure 3.14: author used PV inverter model (grid connected type) from the library. Where is the voltage and frequency reference generator unit? What happen to the critical load if total power output from PV and WEG is zero?		√
Figure 3.14 still uses OR gate function. Where is the S-R F/F		√
Figure 3.15 are too small		√
Table 3.7. The FC< Critical load. Not practical. Cannot rely on RE sources.		√
Figure 3.16 What is Global horizontal irradiance		√
Appendix C: What is hourly Global Horizontal Irradiance data?		√
Appendix C: What is Malaysian Solar Irradiance data?		√
What is temperature? Module or ambient?		√
Section 3.5 require clear explanation. Why use two different module?		√
Need definition of STC condition		√
Delete or re-write repeating sentence.		√
Texts in Figure 3.17 are too small		√
Why 8 PV array?		√
Not practical to use constant solar irradiance. Use all possible variations of solar irradiance.		√
In case of surplus power generation from PV system, explain how it works.		√
Table 3.8. No energy storage. When PV= 0, grid cannot supply active power form critical load. So, how?		√
Why use 8 arrays? 74 by 10?		√
Table 3.9. Table 3.10. No energy storage. PV= 0 how?		√
Unbalance active power. So how?		√
Why table 3.8, 3.9, 3.10 have different load specification?		√
Why table 3.9, 3.10 have no reactive load?		√
Table 3.8, 3.9, 3.10 not practical		√
What is temperature? Module or ambient?		√
Appendix E: Block P19a, What about reactive power?		√
Appendix E: Load on Friday and Saturday?		√
Appendix E: Page 118: Confusing statement. MATLAB and SIMULINK calculate power at 25□. Then why 2nd column temperature?		√

Appendix E: Page 120: what is the purpose of changing PV array configuration?		√
Appendix E: Page 123: Why showing surplus if not using energy storage in the system?		√
The climate in Malaysia is fairly constant. Incorrect statement.		√
Table 3.11. How to get 270.4363 W at 1: 00 PM. Need detail explanation		√
How does the surplus power could be generated? What is meant by deficiency?		√
Why use different PV array?		√
"The optimum specification of PV source is given 6 arrays,…" What basis?		√
Practical condition efficiency 21% only not 80%		√
Equation 3.17 any reference? What happen if Vac=230 and ma= 0.2? Please validate this question		√
Figure 3.17/ 3.1 is a block diagram not graph. Section 3.6.1 present properly.		√
What is the purpose of calculating battery size if not included in the research?		√
Equation 3.19. What is 144 for?		√
All variables used are not well defined.		√
Chapter 4		
Why use Kyocera not SunPower PV module?		√
Should no cite own paper. Author's paper should not be listed in reference list.		√
Section 4.2. What type of gate controller? Modified gate? What is the novelty?		√
Figure 4.1: No label on two waveforms on the right hand side. Showing RMS values in one graph is more appropriate.		√
Figure 4.2 to 4.12 refer to which simulation circuit? What about the control signal at the controller unit? What about voltage and current waveforms at DG?		√
Why the threshold voltage level is set at 300 V? Any reason?		√
What causes the voltage drops when output power is less than load demand? Need explanation.		√
Figure 4.13 to 4.14. What is meant by faulty condition?		√
What is the source of power supply during islanding?		√
Figure 4.13: Why P_main, Q_main, P_PCC and Q_PCC at zero during islanding?		√
Figure 4.15 and 4.17. Same title?		√
Figure 4.17. Why power fluctuates for non-critical loads?		√
Why use 8 PV array?		√
Why use VSC, grid connected inverter is a current source inverter (CSI)		√
Fig 4.18. Too small.		√

Correction on the title		√
The symbol +ve for power consumption and –ve for power generated		√
Two types of controller? Which circuit the author refer to?		√
Figure 4.23, 4.29. Which schematic author refer?		√
No schematic diagram to refer. During starting of islanding mode, why grid take significant delay to disconnect with MG? Why positive Q flow during those transition period?		√
Check power balance from Figure 4.30-4.33		√
Figure 4.38: Why Vab_PCC is not stable		
From 4.51 to 4.54, why Vabc_critical is zero during nght time?		
		√
		√
Chapter 5		√
Rewrite Chapter 5	√	√

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PUSAT KESIHATAN (PEJABAT HAL EHWAL PELAJAR)

RN762633
Orshaufekk

Rujukan Kami : **R4130817008** Tarikh : 13/08/17

Kepada :

Pakar/ Pegawai Perubatan,

Gynaecologist
Johor Specialist Hosp

Tuan/ Puan Doktor,

Nama : **SUMAIYA RAHMAN** Umur : 27

No. Kad Pengenalan : **AG3665945** Jantina : Perempuan

Chief Complaint & History :
married/nulliparous/lmp 7 july 2017
irregular menses since 2015
was started on duphaston since january for 6 mths after usg done
no report available

Clinical Finding :
abd nad
upt negative

Diagnosis :
Irregular menses for investigation

Treatment :

Purpose Of Referral :

Sekian, terima kasih.
Yang Benar,

DR. DZALILA HELMIE BINTI IZZAT
Pegawai Perubatan
Pusat Kesihatan Universiti
81310 UTM Johor Bahru

Pusat Kesihatan Universiti
81310 UTM Skudai
Johor

Dr Dzalila Helmie Binti Izzat

Cop Rasmi

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UTM.J.06.05/22.13/1/6 Jld. 7(141) 3 April 2018

TO WHOM IT MAY CONCERN

MEDICAL REPORT

PATIENT'S NAME	:	**SUMAIYA RAHMAN**
IC. NO	:	**AG3665945**
NO. PASSPORT	:	**201805020024**
DIAGNOSIS	:	**POLYCYSTIC OVARIAN SYNDROME**

This patient above is currently under Johor Specialist Hospital follow up for her gynaecological problem.

In view of personal reasons, patient requested to continue her long term treatment at her hometown.

Thank you.

"BERKHIDMAT UNTUK NEGARA"

Yours sincerely,

DR. DZALILA HELMIE BINTI IZZAT
University Health Centre
Universiti Teknologi Malaysia
Johor Bahru, Johor
☎ 07-5537215