



PHOTOVOLTAIC INVERTER

SOLAR HERO

TEAM MEMBERS

MOHAMAD ELSALEH

KHALED ALBANNAI

Xuanyu Bai

Jiixin Zheng

GTA

Han Peng

Technical

Kristiyan Milev

Jiixin Zheng

Overview:

- Client
- Introduction
- WBS of Khaled Albannai
- WBS of Mohamad Elsaleh
- WBS of Xuanyu Bai
- WBS of Jiaxin Zheng
- Conclusion

Khled Albannai

CLIENT

- Dr. Venkata Yaramasu
- renewable energy
- high power converters
- variable-speed drives and electric vehicles



Mohamad Elsaleh

Introduction:

Why choose Photovoltaic systems ?

- Less dependence on fossil fuels
- Clean and reliable energy
- The prices for photovoltaic modules is decreasing

Background:

- The partial shading on large-scale PV systems
- Affecting the power output to the grid
- Develop the next generation large scale PV system

WBS for Mohamad Elsaleh

ID	Activity/Task	Description	Deliverables	Other people working
1	Hardware			
1.1	Soldering	Soldering new gate drivers and fixing	1.Soldered gate drivers. 2.Fixing	Bai and Khaled
1.2	Purchase components	Buying components to attach heatsink to the wood board	Attached	Khaled
1.3	Wiring	Connecting Gate drivers to the Interface board and IGBT's	In the wiring process	Khaled and Jiaxin
2	Testing			
2.1	Testing IGBT's	Making sure each IGBT is working properly to proceed with connection	All IGBT's have been tested	-
2.2	Testing set up	Connecting all devices together and making sure it's ready for simulation and testing	In progress	Khaled and bai
3	Website			
3.1	Update content	Updating and adding documents to the website	In progress	↓

WBS of Khaled Albannai

Person Primarily Responsible: Khaled Albannai				
ID	Activity/Task	Description	Deliverable(s)	Other People
1	Hardware	Installing the board stand	Assemble the parts	
1.1	Buying stand board	Measuring and layout	To measure the correct parts sizes	Mohamad
2.0	Cutting metal for gate drivers	Measure and make it fit perfectly	Attaching all 12 gate drivers	Bai
2.1	Drilling holes	Drilling the correct	Make it easier and faster to attach	Mohamad
3.0	Attaching components	1- Inductor 2- capacitor 3- gate drivers	Attaching 80% of the inverter components	Mohamad

WBS of Xuanyu Bai

Person Primarily Responsible: Xuanyu Bai				
ID	Activity/Task	Description	Deliverable(s)	Other People
1	Simulation			
1.1	Simulink	Build a part of MATLAB Simulink for PV system	The Simulink is running good without any errors.	
2	Construct			
2.1	Building devices	Wiring and cutting the wood for the show stand following the measurement	In process	Khaled and Mohamad, Jiaxin
2.2	Soldering	Soldering new gate drivers	Made total 12 new gate drivers	Khaled and Mohamad
3	Interface board testing			
3.1	Testing the Gate drivers	Using MATLAB Simulink to test the gate drivers	All gate drivers give good output signals	Mohamad

WBS of Jiaxin Zheng

WBS of Jiaxin Zheng

ID	ACTIVITY/TASK	DESCRIPTION	DELIVERABLE	OTHER PEOPLE
1	Hardware			
1.1	Drilling holes	Measure the positions of the holes and the distance between the holes and the holes, then punch with a punch	The holes has been drilled	-
1.2	Fixing	Place heat sink, gate drives, inductions, switches, current /voltage sensors, etc. in the measured position and fix them with screws	Inductions, switches, current / voltage sensors and heat sink have been fixing. Others is in progress.	Khaled and Mohamad
1.3	Wiring	Cutting wires for the connections and attaching components on the wood board	In progress	Mohamad and Bai
2	Matlab			
2.1	Establishing simulink	The Simulink code has been got and the Simulink is established as the software running on the central inverter system.	The Simulink has been established	-
3	Testing			
3.1	Testing gate drives	Connect gate drive to the Simulink of Matlab to check if it is running	Gate drives is good to running	Bai

Conclusion:

- Focus on finishing the parts that have the highest dependency
- Follow the time frame given
- Update the tasks according to progress done

Mohamad Elsaleh