

## Meeting Minutes to Date

Meeting minutes

Team Frigus

September 16, 2016

### **1 Action Items**

- Set up S drive (J.T.)
- Meeting minutes (J.T.)
- Agenda for next meeting (Caleb)
- All members must review information about heat sink (Rachel will send)
- Team contract (Conner)

### **2 Current status**

- We are preparing to meet with the client and are brushing up on fluids and heat transfer before the project begins.

### **3 Schedule Discussion**

- We are on track.

### **4 Budget**

- We will ask Dr.Hess at next weekly meeting on 9/19/16

### **5 Quality**

- N/A

### **6 Team Dynamic**

- We are getting to know each other still. The communication is going good and the distribution of work is fair.

### **7 Client relation**

- Are client interview is scheduled for 9/26/16.

### **8 Future action Items**

- Need CAD model mock up (Caleb)
- The client meeting will be held on the 26 of September
- Have a heat sink sized for the mosfets by (9/26/16)

- Connor will introduce himself to molly for budget

## 9 Other

Main point of contact Rachel (by email) -Peterson, Rachel (pete2182@vandals.uidaho.edu)

Meeting minutes

Team Frigus

September 19, 2016

## 10 Action Items

- Need CAD model mock up (Caleb will do when Rachel get the demotions to him)
- Wiki (calob will do when we have the presentation about it in class)
- The client meeting will be held on the 26 of Sep....(next week)
- Have a heat sink sized for the mosfets by (9/26/16)...next week
- Connor will introduce himself to molly for budget (done)
- Written contract (done Connor)

## 11 Current status

We are preparing for the client interview. We have all drafted questions and are going to combined them tonight will send to Tao.

## 12 Schedule Discussion

What kind of things we will ask about at the client interview.

- Budget
- Volume
- Power going in
- Heat we have to remove
- Mosfet restrictions
- Goal temp
- Most important factors

New meeting time

- This is the only time that works for every one

## 13 Budget

- We will ask Dr.Hess at next weekly meeting on 9/19/16

## **14 Quality**

- N/A

## **15 Team Dynamic**

We are getting along and all work is being shared Caleb will be doing the agenda every week and J.T will be doing the meeting mins.

## **16 Client relation**

- Are client interview is scheduled for 9/26/16.

## **17 Future action Items**

J.T. - meeting mins, email Caleb 20 questions  
Caleb- agenda, combined questions for interview  
Connor-Talk to molly

## **9 Other**

We will send our combine questions to them by September 20th

Meeting minutes

Team Frigus

October 3, 2016

## **18 Action Items**

- Need CAD model mock up (done)
- The client meeting transcripts typed J.T. (done)
- Have a heat sink sized for the mosfets (done)
- Client interview questions (done)
- Rachel slide show post to shared drive (done)

## **19 Current status**

We have done our client interview meet with Amrit and now have a good understanding of what is expected of us.

## **20 Schedule Discussion**

Rough outline of dates

- Oct 20 PCB board will arrive
- Nov 11<sup>th</sup> have board in our hands – should have our heat sink finished by then
- Dec 16<sup>th</sup> must have first prototype finished and tested

## **21 Budget**

1000

## **22 Client relation**

We had our first meeting with Amrit and now have a better idea of what we are expected to do.

## **23 Future action Items**

Brain storm at least 3 ideas for the heat sink. (All)

Meeting minutes

Team Frigus

Oct 10, 2016

## **1 Action Items**

- Brain storm 3 Ideas (done)
- Meeting minutes (J.T.)

## **2 Current status**

- We are preparing for the Snapshot. We are finalizing our portfolio and printing out our meeting minutes.

## **3 Schedule Discussion**

- We are on track. We talked about our schedule that Connor made we all agree on the timeline.

## **4 team Dynamic**

- We are all doing a good job keeping the work load even.

## **5 client relation**

- Talked to Herb Hess about our final project to make sure we are all on the same page.

## **6 Future action Items**

- Decide on top 3 designs to give to Rachel and talk to bill about how to machine them.

## **7 Other**

- Talk to Dr.Dutta about 3D printing

- Think about material
- Remember next semester that we are moving to just the die with no casing on the mosfets.
- Consider doing best 2 heat sinks this semester

Meeting minutes

Team Frigus

October 17, 2016

## **1 Action Items**

CAD models- done

3D print done- need to find bigger printer

Brain storm ideas –done (6 designs total)

## **2 Current status**

We are preparing for the snap shot. We need to have 3 to 4 ideas clearly built in solid works basic pro cons of each idea and relative weights/ surface areas.

## **3 Discussion**

Got some good ideas from snap shot specify dealing with the machining of the heat sinks.

Caleb's math models are focusing on the wrong factors should be focusing on Q and needs to optimize.

We also need to make a math model that will find the pressure drop over the heat sink (J.T).

### **Suggestions from advisers.**

Send Rachel a normal fin heat sink

Send Rachel the fixed machine able waffle heat sink

Try diagonal fins

## **4 Budget**

1000

## **5 Client relation**

We are talking with Dr.Hess still trying to get the simulations back from Rachel.

## **6 Future action Items**

Jt- math model presser drop

Make pieces machine able- all

CFD- Rachel

Look at the experiment portion-All

Start looking at housing ideas-All

Meeting minutes

Team Frigus

October 24, 2016

## **1 Action Items**

Math model-Caleb

Make pieces machine able- currenbt

CFD- Rachel

Look at the experiment portion-All

Start looking at housing ideas-All

Shop train every one – all good

## **2 Current status**

We are looking at different designs for the case and how we will position the thermal camera. We are now all shop trained. And the parts are almost all adjusted to be machine able.

## **3 Discussion**

We talked a lot about how we will set up the

**Suggestions from advisers.**

Get ready for wiki page workshop

Look in 3D printing the heat sink

## **4 Budget**

1000

## **5 Client relation**

We are talking with Dr.Hess still trying to get the simulations back from Rachel.

## **6 Future action Items**

Meeting minutes

Team Frigus

October 31, 2016

## **1 Action Items**

Math model- Has some errors

Machinability- Can now make triangular sink using a slit saw. Will probably focus on it.

CFD- Rachel working on

Look at the experiment portion-All

Start looking at housing ideas-All

Wikipedia page- Continuing work

## **2 Current status**

We are looking at two main types of designs for the case and how we will position the thermal camera. We now have two heat sinks that we can machine. Are going to give the triangular sink priority over the crosshatched.

## **3 Discussion**

We talked about how we can try to fine tune and fix the math model. JT will meet with Rachel and try to resolve the errors. Talked a lot about how we will set up the experimentation. Different ideas for the case shape.

### **Suggestions from advisers.**

Get ready for wiki page workshop

Look in 3D printing the heat sink

## **4 Budget**

\$1000 – It looks like we can use scrap aluminum from the shop to make our pieces so were fine for now.

## **5 Client relation**

We are talking with Dr.Hess still trying to get the simulations back from Rachel.

## **6 Future action Items**

Begin looking into our experimental setup and case design

Meeting minutes

Team Frigus

November 7<sup>th</sup>, 2016

## **1 Action Items**

Math model- Still resolving errors

Machinability- Waiting for simulation. Bill is gone till Wednesday.

CFD- Rachel working on

Look at the experiment portion-looking at a control environment

Start looking at housing ideas-May buy case.

Wikipedia page- Trying to finalize before wiki review

Design Review- Aiming for next Monday

## **2 Current status**

We are looking at two main types of designs for the case and how we will position the thermal camera. We now have two heat sinks that we can machine. Are going to give the triangular sink priority over the crosshatched. Will begin machining as soon as bill returns rather than waiting till the simulation is finished.

## **3 Discussion**

We talked about how we can try to fine tune and fix the math model. JT will meet with Rachel and try to resolve the errors. Talked a lot about how we will set up the experimentation. Different ideas for the case shape.

### **Suggestions from advisers.**

Get ready for wiki page review

Get ready for design review

## **Budget**

\$1000 – It looks like we can use scrap aluminum from the shop to make our pieces so were fine for now. Looking at buying and modifying a case.



#### **4 Client relation**

We are talking with Dr.Hess still trying to get the simulations back from Rachel.

#### **5 Future action Items**

Begin machining triangular sink, and prepare for design review. Continue looking into our experimental setup and case design