

A miniature microscope for fluorescence imaging

Client: Prof. Matthew Merrins

Advisor: Jeremy Rogers

Team:

John Rupel	jrupel@wisc.edu (Team Leader)
Kadina Johnston	kejohnston2@wisc.edu (Communicator)
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Kaitlyn Gabari	gabardi@wisc.edu (BWIG/BPAG)

Date: 01/20/2017- 01/25/2017

Problem Statement: An affordable miniature fluorescence microscope needs to be developed the excitation source should be an LED with a wavelength of 430nm and filters will be required to filter 470 nm and 535 nm light.

Last Week's Goals: N/A

Summary of Team Role Accomplishments:

- John created and shared notebook.
- Kadina contacted and set up a meeting with the client f
- Kaitlyn set up the webpage
- Zach is excited to attend the first BSAC meeting

Summary of Design Accomplishments:

- Team did background research and created a list of questions for the client.

This Week's Goals/Individual Goals:

Kaitlyn: My goal this week is to do general research on the background of the project in order to formulate a better understanding of the problem statement. In addition I plan to make a list of questions I want to ask for our client meeting this Wednesday.

Kadina: My goal this week is to figure out what the client's design specifications and determine what outside resources we may need to utilize. I intend to have a list of questions for our client and discuss them with the team during our advisor meeting.

Zach: My goal this week is to determine the specifics of how the client wants this project to be conducted/what end product he is expecting from our work. I want to research more of the specifics of FRET as it pertains to our project and determine possible mounts for the optical filters we need.

John: My goal this week is to meet with client and find his design requirements, perform the necessary background research, and determine how the power supply for the microscope should be designed.

Project Difficulties:

Same Challenges:

- Determining if the client wants a confocal or wide field microscope.
- Clarify what the client means by bullet camera
- Determine the client's current setup for FRET (and changes wanted for classroom model)

New Challenges:

- N/A

Tasks Completed by Team Members:

Kaitlyn: Kaitlyn did general background research on FRET and the different types of optical filters. In addition modified the problem statement that was given to us from our client.

Kadina: Kadina did general background research on fluorescence microscopy and the current microscopes the client uses. Additionally, Kadina refamiliarized herself with FRET.

Zach: Zach performed background research of FRET and the Laconic biosensor, as well as a quick search for possible optical filters and lipstick cameras (did not go in depth until more information is gained from client).

John: John did background research into the difference between a widefield microscopy and confocal microscopy. As well as looked into the resources available at LOCI.