Table 1: Revision History

Date	Developer(s)	Change
Sept 25 2022	Edwin Do	Initial commit with outline
Sept 25 2022	Edwin Do	Add team member roles
Sept 25 2022	Timothy Chen	Added to 1 and 2
...	...	...

Development Plan
Measuring Microstructure Changes During Thermal Treatment

Team #30, ReSprint
Edwin Do
Joseph Braun
Timothy Chen
Abdul Nour Seddiki
Tyler Magarelli

The evolution of the material's microstructure during thermal treatment can be followed by measuring changes to the electrical conductivity of the material. The electrical conductivity is measured using a four-point probe. A current source provides a small current that passes through the material and a nano-voltmeter measures the voltage. Using the current and voltage values, the resistance can be calculated. This can in turn be converted to conductivity if the dimensions of the sample are known. The goal of this project is to develop a Window's based App which can be used to measure the conductivity. A current source and a nano- voltmeter will be provided. The App needs to connect to these devices and calculate the conductivity. The user should be able to control the acquisition rate as well as output the data (plots and text files). The equipment should operate under constant current and delta (current pulse) control.

1   Team Meeting Plan

Team meeting will be held weekly on Microsoft Teams, exact time will be determined based on everyone's availability. The meeting will start as soon as all members are present. Goal of the meeting will be determined before the meeting beginnings. A Bi-weekly meeting will be set with the supervisor to ensure project is heading in the direction.

2   Team Communication Plan

Commuication will take place on Microsoft Teams and Discord. Microsoft teams is the main source of commuication used to host meeting with the team and

the supervisor. Discord commuication are for updates and meeting to resolve issues brought up. All team members are expected to respone to commucations regarding themselves within a day.

3 Team Member Roles

Everyone will be responsible for any aspect of the project on a as-needed basis. Therefore, there will be no team leader. This will require every team member to be flexible and be able to move from one domain to another (i.e. software to hardware, or hardware to software). The roles listed below will outline each member's primary responsiblities.

Team Member	Role
Edwin Do	Software Developer. Primarily assisting the team with Git, project management and the development of the GUI.
Timothy Chen	Software Developer. Primarily assisting the team with development of the GUI.
Abdul Nour Seddiki	Hardware Engineer. Primarily assisting the team with reading the data from the nano-voltmeter and current source.
Tyler Magarelli	Software Developer. Primarily assisting the team with development of the GUI.
Joseph Braun	Hardware Engineer. Primarily assisting the team with reading the data from the nano-voltmeter and current source.

Table 2: Team Member Roles

4 Workflow Plan

- How will you be using git, including branches, pull request, etc.?

- How will you be managing issues, including template issues, issue classificaiton, etc.?

5 Proof of Concept Demonstration Plan

What is the main risk, or risks, for the success of your project? What will you demonstrate during your proof of concept demonstration to convince yourself that you will be able to overcome this risk?

6 Technology

- Specific programming language

- Specific linter tool (if appropriate)

- Specific unit testing framework

- Investigation of code coverage measuring tools

- Specific plans for Continuous Integration (CI), or an explanation that CI is not being done

- Specific performance measuring tools (like Valgrind), if appropriate

- Libraries you will likely be using?

- Tools you will likely be using?

7 Coding Standard

8 Project Scheduling

[How will the project be scheduled? —SS]