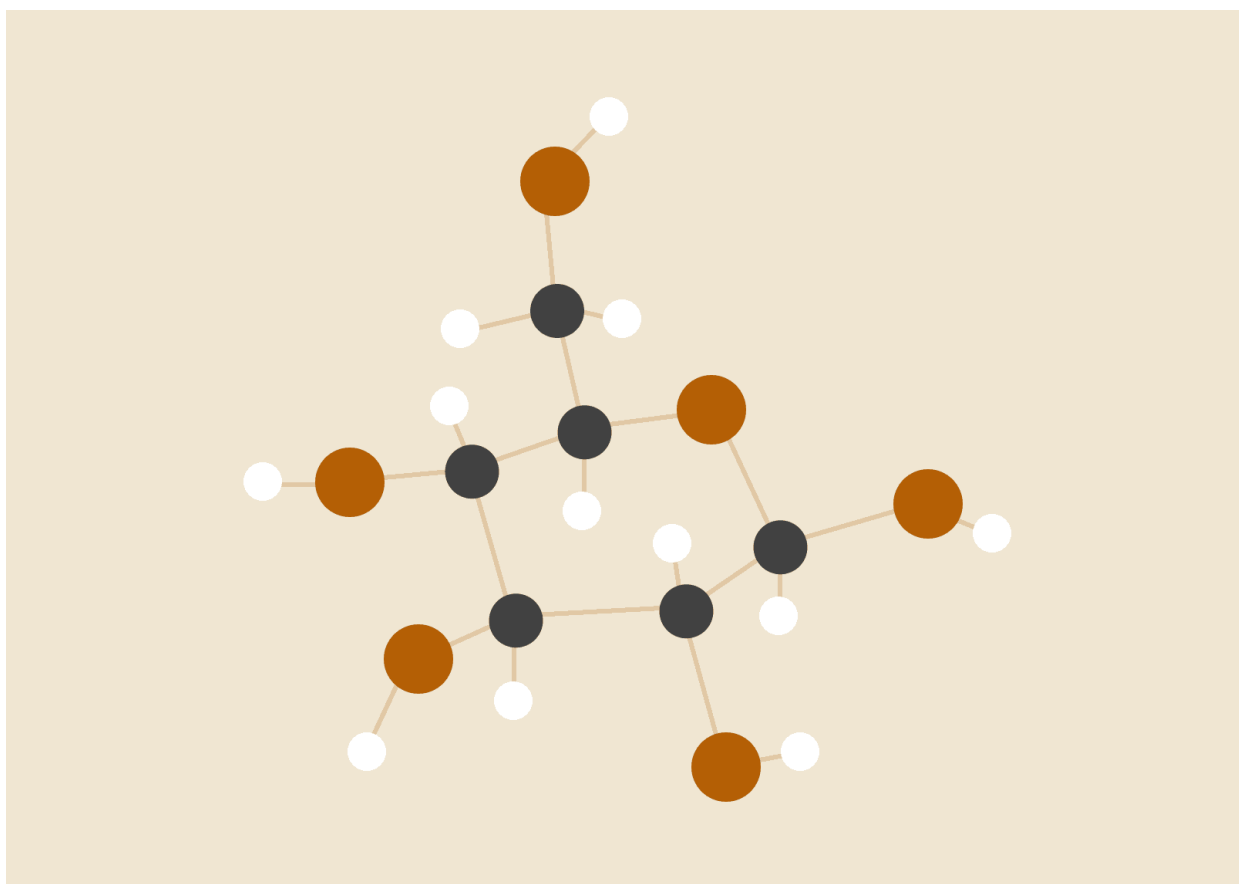


# LOG BOOK

*CYSF SCIENCE FAIR PROJECT - The Coherer Effect As A Transistor*



***By: Tsion Mulumar & Eyasu Mulumar***

## December 28th, 2023:

- Today, the project began, at home which was started late and over the winter break. The idea was made as a goal was set in order to do a project which is able to use the Cohere Effect as a transistor. It was then decided to do this idea for the scientific experimental project because of wanting to upgrade and make the computers of today better in the future to make them into supercomputers. Which can be done, by using the Coherer Effect as a transistor rather than what it's normally used for, acting like a radio receiver. Overall, the basic project information with the name of the project, grade, project type, language, project category, project topic(s), and the brief description of the project was completed.

## January 4th, 2024:

- Today, the project was continued being worked on at home in the new year which had been also, over the winter break. The hypothesis was worked on, deciding whether when used as a transistor if the Coherer Effect would work best if the spark is made beside it, above it, or just beneath it. First individual ideas were come up with ideas separately then, they came together later in order to consult each other and come up with one idea. Why we thought our answer was correct was explained and how it made sense. Overall, not that much was done today and only the hypothesis had just been completed with as much detail as possible.

## January 13th, 2024:

- Today, the research on the background information on the main topic of the scientific experimental project, the Coherer Effect in our house began. Tsion worked on the first part of the research, writing about who had invented the Coherer Effect, who was Edouard Branly and how he had made it including the experiments it took him. Meanwhile, Eyasu worked on the second part of the research, writing about how it works in the way of what the oxide is and how the electromagnetic radiation breaks the oxide and such. Overall, the work on researching the Coherer effect had begun, dividing up the work and doing half, planning to finish it the next day the science fair project was worked on.

### January 14th, 2024:

- Today, the research part was continued to be worked with Tsion and Eyasu's individual parts which were then combined together to form as well as finish the research part of the scientific experimental project. Furthermore, trying to prove how the Coherer Effect WILL work like a transistor had been added to the research part. Doing the Ethics Due Care 2A was almost forgotten about but remembered as reminded by the science teacher two days ago on Friday. The Ethics Due Care 2A was completed and the Significant Risk Form 2B wasn't completed because the science fair experimental project was NOT that dangerous at all. Overall, the research part of our science fair project at home was completed as well as the Ethics Due Care 2A for safety.

### January 19th, 2024:

- Today, when at home an email from the CYSF platform was received which said that the Ethics And Due Care Form 2A for the scientific experimental project of *The Coherer Effect As A Transistor: Eyasu Mulumar, Tsion Mulumar* had been approved. Overall, other than receiving this email which approved our Ethics Due Care 2A nothing else had been done today which involved the science fair project.

### February 3rd, 2024:

- Today, Tsion continued to work on the science fair project in the CYSF platform by working on both the variables and the procedure parts. Tsion worked on the three variables within this scientific experiment by writing the three different types of variables of one manipulated, one responding as well as the eight controlled variables. Overall only Tsion worked at home on the science fair project by writing the three different types of variables for this scientific experimental project.

### February 4th, 2024:

- Today, Eyasu continued to work on the science fair project in the CYSF platform by working on both the needed materials as well as the necessary procedure done to

be able to do this specific scientific projects' experiment. Eyasu had given out all of the materials used when doing the experiment and in a detailed way had very thoroughly given the procedure in order to accomplish this scientific project/experiment. Overall only Eyasu worked at home on the science fair project by writing the specific materials needed and how to make the experiment work by writing the necessary procedure and how to do it for this science experimental project.

### **February 15th, 2024:**

- Today, the observations were done at home during the first day of the long weekend at school. The observations were done in a format so that we did each experiment with the location of the spark changing in as well as put in different places. For each place the location of the spark moved whether the design was above, beside, or underneath the Coherer Device it had been tested four times in order to prove the accuracy of whether the LED light lit up or not. It was also tested whether without no spark, with the control group if the LED would turn on, on its own. Overall, only the observations were written down today in sentences in a paragraph format.

### **February 19th, 2024:**

- Today, Tsion had done the analysis at home during the last day of the long weekend at school. Explaining within the analysis what had been seen in the observations and why as well as how it happened. It was thoroughly explained that when above the Coherer device the spark worked best, when beside the Coherer device the spark worked to a certain extent and was okay, but when beneath the Coherer device the spark worked the worst. It was also added why the Coherer device didn't turn on during the control group with no spark. Furthermore, Tsion had placed the observations into a chart rather than just leaving it in sentences in a paragraph format. Overall, all that was done today was done by Tsion who moved the observations into a chart and completed the analysis explaining why things had happened the way they did.

### **February 24th, 2024:**

- Today, Eyasu had done the conclusion at home in which all done was summarize the observations as well as the analysis without explaining anything. All that happened today was that Eyasu wrote the overall and general scientific experiments' test results when the LED successfully turned on, flickered or just stayed off. The conclusion showed the test results of the scientific experiment when the location of the spark had been moved above, under, or beside as well as the control group with no trying to find the best place of the spark for the Coherer device and stated the best location the spark could be in, to successfully turn on the LED during all the tests. Overall, all that was done today was done by Eyasu who just completed and finished the conclusion.

### February 25th, 2024:

- Today, two components of this science fair project were done at home. The application was done by Tsion who just stated what implications this scientific experiment has in the world of today. It was explained how it will eventually create supercomputers which are an upgrade of the modern-day computers of today. The sources of error was done by Eyasu who had just stated the sources and factors which were out of our control that could create errors while completing the experiment such as: lightning, static electricity as well as the aluminum ball's position within the Zap-it. Overall, all that was done today was the application done by Tsion and the sources of error done by Eyasu.

### March 8th, 2024:

- Today, on the day of from school the citations of this scientific experimental project were completed including the research part of this science project's references as well as the application part of this science project's references. The acknowledgements were also done today as we recognized what other websites helped us out and how like the way that Grammarly had helped us out with spell check. We also recorded our video presentation today, at home which just very briefly summarized an overview of our ENTIRE science fair project of the Coherer Effect as a transistor. The declarations were also done today. Overall, the citations, acknowledgements, declarations and video presentation was done today.

## March 10th, 2024:

- Today, this science fair project of ours was checked over and we added this log book into it as well as added our video presentation which took awhile to understand how to add it into the CYSF platform. The participant image, project image and header image were taken and completed today at home. Overall, the project was checked over today and then the video presentation as well as this log book and the three other images of participants, header and project were then provided into the CYSF platform.