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Final Report

For the second part of the semester, I have:

- [improved data analysis](#) by changing to a user-friendly layout that allow easy access/workaround with MathCad files and integrating data smoothing using moving average approach,
- worked mostly on assembling the [new tube flocculator setup](#), cleaning/organizing the experimental apparatus, conducting and troubleshooting the experiments,
- analyzed the data from the [new setup](#) and compared it with the previous setup, and
- [updated](#) the wiki page.

My works now (or in the future, will) focus on:

- creating [tutorial](#) for [Process Controller](#),
- trying to carry out experiments using [Particle Image Velocimetry \(PIV\)](#) (we have managed to collect some data, but the computer that host the data crashed unexpectedly and the data cannot be retrieved at the moment),
- conduct experiments on the new setup with new IR turbidimeter,
- creating [troubleshooting page](#) for Tube Flocc experiments, and
- updating the wiki with new information for Summer session.

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Midterm Report

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My works consist of evaluating previous data, creating better analysis tools using MathCad and analyzing any trends that can describe the sedimentation data.

Our (Ian Tse and I) first task was to organize the data and to identify which data corresponds to the matrices in the MathCad space. Then we try to [deduce](#) any trend that can be compared with the data. Our first guess was that these data can be represented by polynomial plots. From the [error analysis](#), we determined that the third or fourth degree of polynomial suits the datasets the best. However, this polynomial regression method would only be beneficial for fitting the experimental data but won't be useful for determining any actual parameters that representing the curve. Therefore, a saturation curve was suggested. However, the regression didn't give a better fit for the datasets. We've tried to look from [another perspective](#), and after several discussions, we decided that by [normalizing](#) the amount of settling ($1-NTU/NTU_{max}$), the analysis can be improved. The double-reciprocal analysis was imposed on the normalized datasets and we found that they conformed with *Lineweaver-Burke* analysis.

Our next approach is to extract particle distribution curve from the datasets and get better understanding of how floc size affect the performance of settling column.

On February 20, we also did [teach-In](#), as a summary of our understanding and also anything that we wanted to work on.

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Lab Report

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Presented here are pages created during data analysis. Any suggestions will be reviewed and eventually help me to improve the analysis tools.

Content created by Anonymous
There are no pages at the moment.