

# hg328

## Hongyi Guo's Individual Contribution Page

### Fall 2012 Contributions

This semester I worked on the Sed Tank Hydraulics team. Our main goal of this semester is to optimize the floc hopper geometry. At the beginning of this semester, we did upflow velocity experiments based on previous team's research and explored how upflow velocity would affect formation of floc blanket. Then we built floc hoppers with 10%, 15% and 20% plan view area and test how plan view area of floc hopper and wasting rate affect the concentration of flocs in the floc hopper. We managed to find out how to build up a floc blanket more efficiently and how to keep a floc blanket more stable. We also found a better coagulant dose for floc blanket formation based on the research of the previous team. At the end of the semester, we ran several experiment on constant wasting rate to see whether it is feasible to remove flocs from floc hopper constantly with a relatively high concentration. We managed to get flocs denser than 1100NTU which is the maximum concentration the turbidimeter can read. We will continue our research looking for a size and rate that keeps the plant running efficiently which means use least amount of clean water to remove a great amount of flocs. We hope our research could help make future AguaClara plants even more efficient and cost-effective.