Week 1 Report

CHEM4966 Chemistry Internship Capstone

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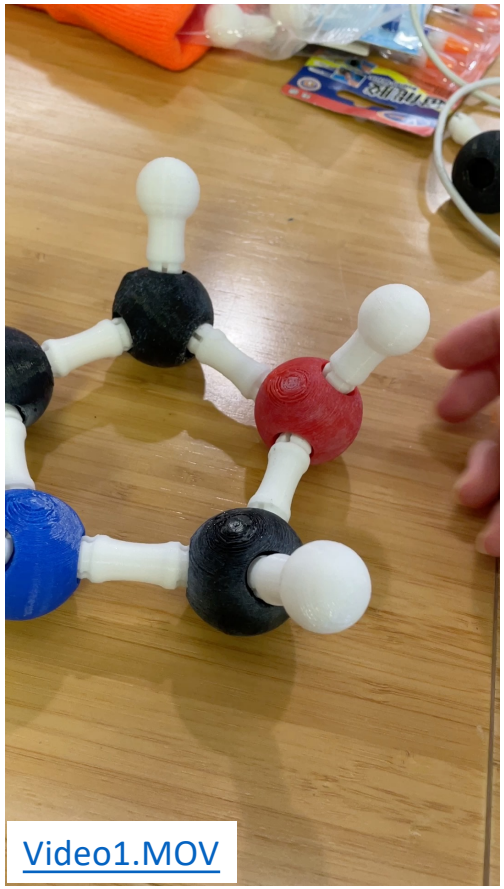
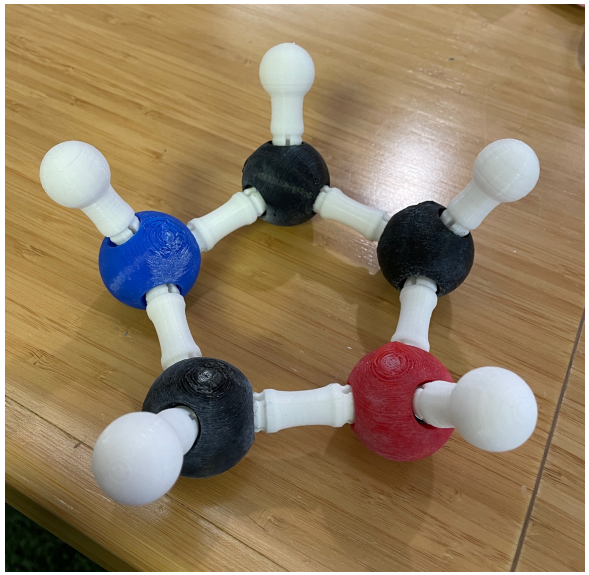
- Making plastic side to face outwards weakens the magnet-magnet bond greatly.

- Thin magnet is very weak. Even gluing two to three magnets are weak.

- Thicker magnets are better but not strong enough as well



Video1.MOV



- Magnets do let the ball (atom) and socket (bond) to be connected. However, the bonding strength is very weak that only flat pentagonal structure can be formed.
- When I try to connect 6 atoms, bonds break apart, so chair and boat configurations can’t be formed.

- As magnets have N and S poles, some repel and some attract – I am not sure if there's a way for me to identify those poles without actually putting two magnets together. This is not a big problem, but there may be a chance that we need to make extra C-C or C-H bonds for each set.

- Even the thicker magnets don’t form a bond that is stable enough to keep the model in shape

Question: Will stronger magnets solve the current situation?

- **Use stronger magnets.** Stronger magnets repel when 4 magnets were placed in the ball (atom) model. However, I can look for stronger glues.
- **Print new 3D components.** We can still use the same magnets. Smaller balls and thinner bonds will allow the current magnets to bond tighter and so the entire model should be more stabilized to form the chair and boat configurations.

Week 2 Plan

1. Market research on Ball and Socket models used in Organic Chemistry classes.
2. Research on alternative ways to connect ball (atom) and socket (bond).