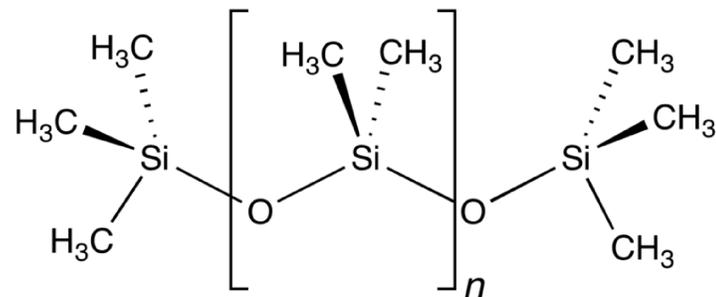


Introduction

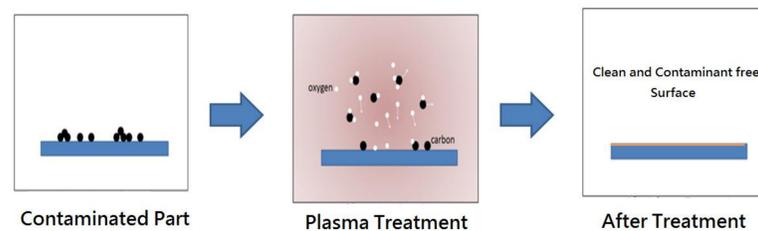
- Polydimethylsiloxane (PDMS) has a structure containing carbon and silicon, Empirical formula is $(C_2H_6OSi)_n$, and the Fragmented formula is $CH_3[Si(CH_3)_2O]_nSi(CH_3)_3$.



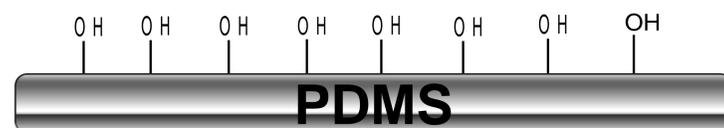
- PDMS is used for the manufacture of microfluidic devices and some medical devices.
- We used two ways to eliminate natural and technical oils on the PDMS, one is in the glass dish and the other is on the slide, by oxygen plasma. Then, we use a drop of distilled water on the PDMS to record the contact angle.

Objective

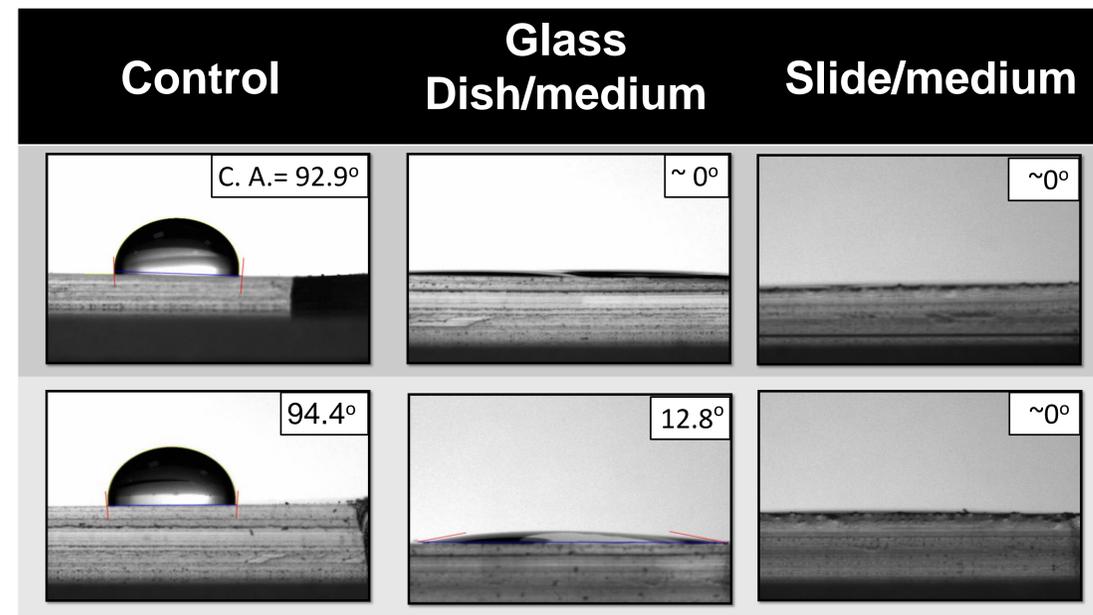
- Organic Molecules elimination



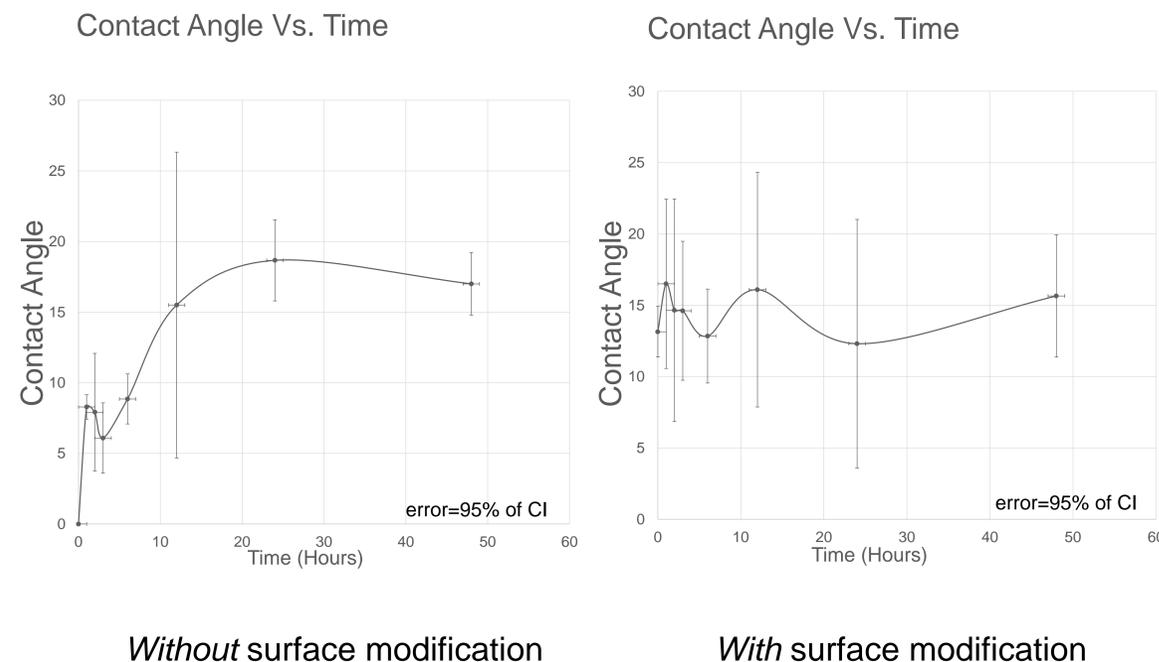
- Hydroxyl Group Replacing



The modification on the slide is better than in the glass dish



The contact angles keep constant after zwitterionic silane modification



Summary

As the results, we see the modification on the slide is better than in the glass dish. The Silane solution keeps the contact angle from increasing. Whereas, without the silane solution it causes the angle to increase during a longer period of time. After this work, we know the better coefficient to the following PDMS surface modification.

Experience

- Doing this project, we learned how to mix Prepolymer and Cross-linker to make a PDMS. We used a pump machine and oxygen plasma to create a Silane solution to record the contact angle.
- During the course of the experiments, we had to calculate the time and collect all contact angles. We encountered many obstacles to get the contact angles and in the end we finally succeeded.

Acknowledgments

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