TESTING AND DEVELOPMENT OF A CHITOSAN/GRAPHENE OXIDE (CSGO) MEMBRANE

• JESSIE POPE
• SUMMER INTERN
• CHEMICAL ENGINEERING STUDENT
• JLP576@MISSTATE.EDU
INTRODUCTION

• The purpose of this project is to further develop, test, and characterize a composite chitosan/graphene oxide (CSGO) material that can be used to isolate contamination on a surface and possibly absorb/adsorb contamination.
MATERIALS

- **Chitosan** is blank and we use it because blank.

- **Graphene Oxide** is blank and we use it because blank.
MATERIALS

- The molds used were blank dimensions and could be adjusted to make them longer or shorter using inserts.

- The acetic acid was used both to dissolve the chitosan in the CSGO solution and to apply the CSGO membrane to the aluminum coupons.
MATERIALS

- The coupons that were used were made of aluminum and were blank dimensions.

- The methylene blue was used as a contaminant simulant throughout the study. It was used at varying concentrations including 50, 20, and 10 ppm.

Aluminum Coupons

Methylene Blue
MATERIALS

• **For one of the experiments during the study, clean white sand was used and mixed with methylene blue.**

• **For every experiment that involved water, deionized water was used.**

Clean White Sand  
DI water
MATERIALS

- A UV/VIS SPECTROPHOTOMETER was used to detect the absorbance of blue light in DI water from the methylene blue throughout the study.

- A SCANNING ELECTRON MICROSCOPE was used to characterize and compare the CSGO membranes before and after experiments.