

## Template: This First Line Should Be the Title of Your Project

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**Hypothesis/Statement of Problem:** Contamination of water by dyes is a serious issue for the environment and human health. Hydroxyapatite (HAP) is a powerful, low-cost adsorbent for pollutants through ion exchange. As a naturally occurring part of bones and teeth, it is biocompatible, making it well suited for applications in environmental remediation. Modification of solid supports can change their affinity for substrates in solution and this project aims to measure the effects of metal modified HAPs on the adsorption of the dye, Janus Green B (JGB).

**Methods:** HAP was synthesized with modifications of Cu, Mn, Fe, Cd, Ni, Zn, Co, and Sr that replaced 10% of the calcium ions. There were additional batches of CuHAP with replacement of 2%, 4%, 6%, and 8% of the calcium ions. Adsorption studies were performed by creating a 0.1 mM stock solution of Janus Green B (JGB), which were serially diluted to create 5 solutions that were 0.01, 0.02, 0.04, 0.06, and 0.08 mM. Nothing was added to control solutions, while 100 mg of HAP was added to test solutions. UV-Vis spectroscopy was then performed to measure amount of adsorption.

**Results:** The adsorption of JGB from the HAPs was found to follow the Langmuir isotherm, a model used to predict the maximum adsorption. Fe10HAP is shown to increase adsorbance of JGB marginally, while other metal modifications of HAP do not show significant effect on the ability to adsorb JGB. Variation of concentration of the metal also does not show any significant improvements.

**Conclusions:** Summarize the significance of your research here.

**D** Daniel Hurewitz  
Mar 24, 2023

Put your name here

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Give your title first. Capitalize  
Nouns, Adjectives & Verbs

**D** Daniel Hurewitz  
Mar 24, 2023

Include all the authors names.

**N** Nicole Bennett  
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Presenter's name should be  
underlined

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Mar 24, 2023

Include the school or institution  
affiliations of your authors (for  
example, Memorial Sloan  
Kettering, Rockefeller Institute,  
Hunter College, etc.)

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Mar 24, 2023

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word abstract. You can divide it  
into these 4 sections specifically.  
You can also put them all together  
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contains these 4 parts.