

Obtaining and Testing Hydrogel

Project Overview: In today's world, environmental issues are increasingly concerning, with industrial pollutants posing a significant threat to public health and ecosystems. Our mission is to revolutionize waste management and wastewater treatment by repurposing plastic waste into a valuable resource that helps protect our planet's most precious asset—water.

About the Project: Plastic waste has become a global crisis, polluting our oceans, landfills, and ecosystems. Concurrently, industrial activities continue to discharge harmful dyes and heavy metals into waterways, posing serious risks to both human health and the environment. To address these pressing issues, our project transforms plastic waste into advanced hydrogels designed to adsorb pollutants from wastewater.

How We Work:

1. **Making Hydrogel:** Our process begins with collecting plastic waste. Initially, the PET aminolysis process is conducted to obtain aminated PET products. Finally, with the help of a crosslinking agent, the hydrogel product is created through a gelation reaction.
2. **Testing Performance:** The next stage involves testing in the university laboratory, equipped with essential resources. The hydrogel is mixed with contaminated water to measure its effectiveness in removing pollutants, and its properties are thoroughly evaluated using advanced laboratory equipment.
3. **Evaluating Impact:** Finally, we assess the overall impact of these hydrogels, focusing on their environmental sustainability and effectiveness in real-world applications.

Achievements:

- The project secured 1st place at the GreenTech Startup and Green Technology Contest in Ganja, where nearly 200 students from 17 universities competed.
- The project also secured 2nd place in the Advanced Materials for Sustainable Future category at the 5th International Science Conference named after Heydar Aliyev.