# TÜBİTAK 2204 High School Project - Arduino pH-Controlled Pitcher

Irem Kahveci

2018

## 1 Project Description

This project aims to measure the pH levels of liquids using a digital display and a pH sensor connected to a pitcher. The project particularly emphasizes the importance of the pH value of the water consumed.

## 2 Materials Used

The following materials were used for the project:

- Arduino UNO or a similar Arduino board
- Gravity Analog pH Sensor Meter Kit (https://store.arduino.cc/products/gravity-analog-ph-sensor-meter-kit)
- LCD display (16x2 characters)
- Jumper wires
- Pitcher

## 3 Project Code

The Arduino code for the project can be found in our GitHub repository:
**https://github.com/YourUsername/Arduino-pH-Controlled-Pitcher**

## 4 Project Progress

The project progressed through the following steps:

1. Connection of the Arduino board and pH sensor was established.
2. pH measurement code was written using Arduino IDE or PlatformIO and uploaded to the board.

3. Connection of the LCD display was made.

4. The pitcher was filled with the liquid for pH measurement.

5. The Arduino device started measuring the pH level of the liquid.

6. The pH value is displayed on the screen and can be viewed via the serial port.

# 5 Conclusion and Learnings

Conclusion

The Arduino pH-Controlled Pitcher Project has successfully demonstrated the practicality and importance of monitoring the pH levels of liquids, especially those we consume daily. By creating a user-friendly system that can measure and display pH values, we have taken a step towards ensuring the quality and safety of the liquids we consume.

Through the course of this project, we have gained valuable insights into several key areas:

Environmental Awareness

We have come to appreciate the impact of pH levels on environmental health. Understanding and maintaining proper pH levels in water sources, for example, can have a positive effect on aquatic ecosystems. Our project has highlighted the role individuals can play in preserving the environment through responsible consumption.

Health Considerations

The health implications of pH levels in the liquids we consume cannot be understated. Water with extreme pH values can be detrimental to our health. This project has reinforced the idea that regularly monitoring the pH of drinking water can contribute to a healthier lifestyle.

STEM Education

The project has provided an excellent educational opportunity in the fields of Science, Technology, Engineering, and Mathematics (STEM). It has allowed us to delve into electronics, coding, and data analysis, enhancing our STEM skills.

In conclusion, the Arduino pH-Controlled Pitcher Project not only achieved its primary goal of creating a pH monitoring system but also raised awareness about the importance of pH levels in our daily lives. We hope this project serves as an inspiration for others to explore the intersection of technology, environmental awareness, and health for a better, more informed future.