

# Preliminary results

## Model Linear Regression for isopropanol and water wavelength

Predictor - air wavelength

Features -isopropanol wavelength and water wavelength

Validation set

- MAE: 0.0
- R2 score: 1.0

Test set

- MAE: 0.0
- R2 score: 1.0

## Model Random Forest for isopropanol and water amplitude

Predictor - air amplitude, air wavelength,  
isopropanol wavelength, water wavelength

Features -isopropanol amplitude and water amplitude

Validation set

- MAE: 0.01
- R2 score: 0.997

Test set

- MAE: 0.01
- R2 score: 0.997

## What next?

My project showed that it is possible to use Machine Learning algorithms to automate sensor control. The next steps are: selection of appropriate hyperparameters for the Random Forest model, saving the models, creating a simple web application (for example using Streamlit or Flask) that allows the user to enter measurements in the air and get predictions of measurements in isopropylene alcohol and water.