INTRODUCTION

Biofilms have been a major problem in many industries especially in the water and health industry. It is found to be the cause of around 80% of all infections cases recorded [1]. This alone points out the importance of detecting biofilm.

OBJECTIVES

- Develop a Novel method for the detection of Biofilm using Ultrasound sensor.
- Test the effect of cleaning liquids on various stages of Biofilm growth.

APPROACH

Obtain the results from the novel black box and compare it with the results as obtained in a Confocal Laser Scanning Microscope.

Test the device in a real-life scenario.

METHODOLOGY

- A Platform is built to place the sample inside it and also to incorporate the black box within the platform.
- Perform streaking plates operation (Figure 1), inoculate colony and store them in incubator.
- An optimal E. coli setting file (Figure 2) was created with all features to observe them.
- The black box produces an output that indicates a close measure of the amount of Biofilm formed inside the measurement media.
- Validate the results obtained from the black box with that obtained from Microscope.
- Test the black box in a real-life scenario, i.e. Place the black box in a channel pipe in a home or industry and record measurements.

CONCLUSION

At the end of this Research, the black box would be a great replacement to the current technology used in the determination of the presence of Biofilm. The black box is a stand-alone device and sized such that it can easily be mounted on the surface of the media in which the measurement is to be made.

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