

ULTRASOUND DYNAMIC SCATTERING

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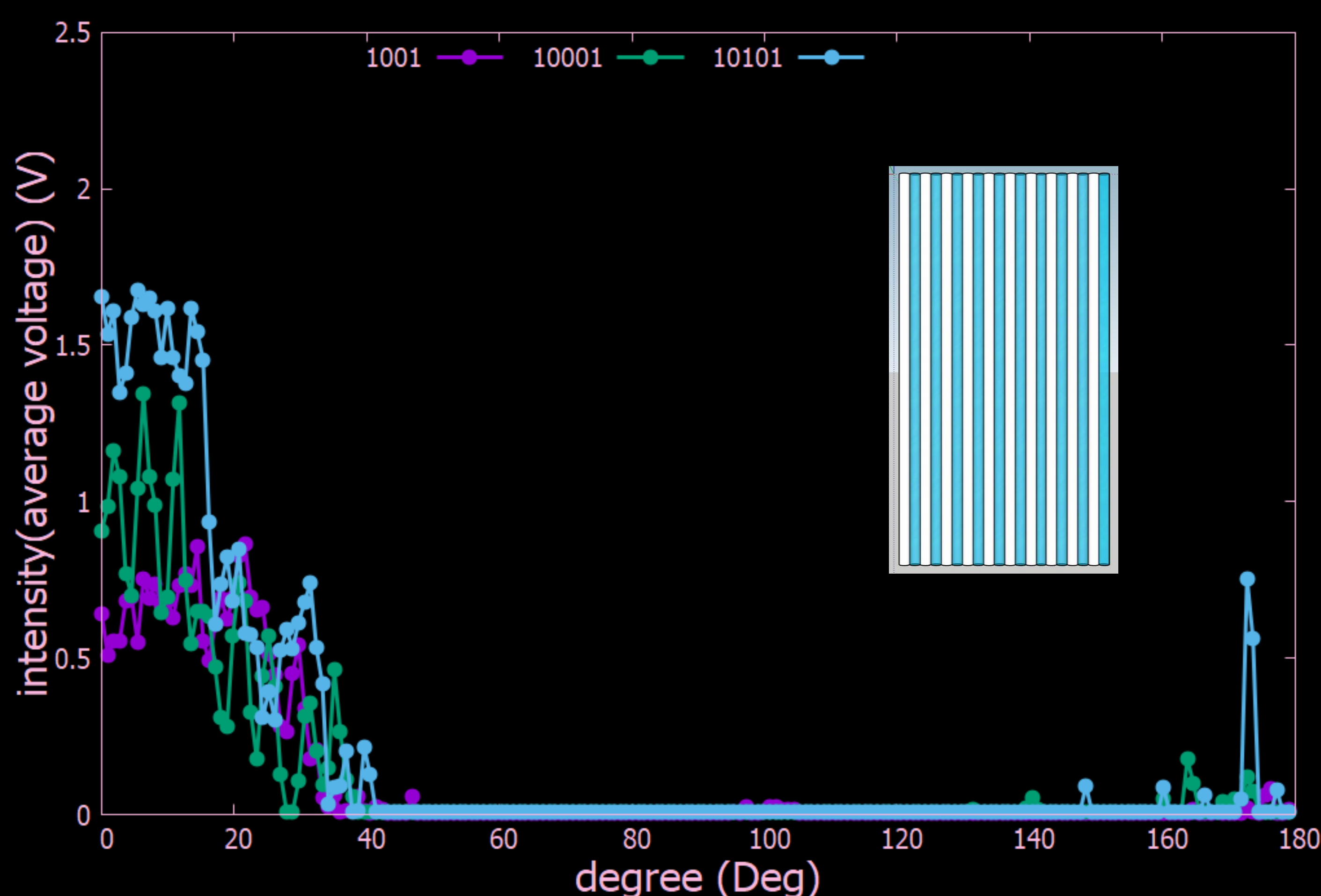
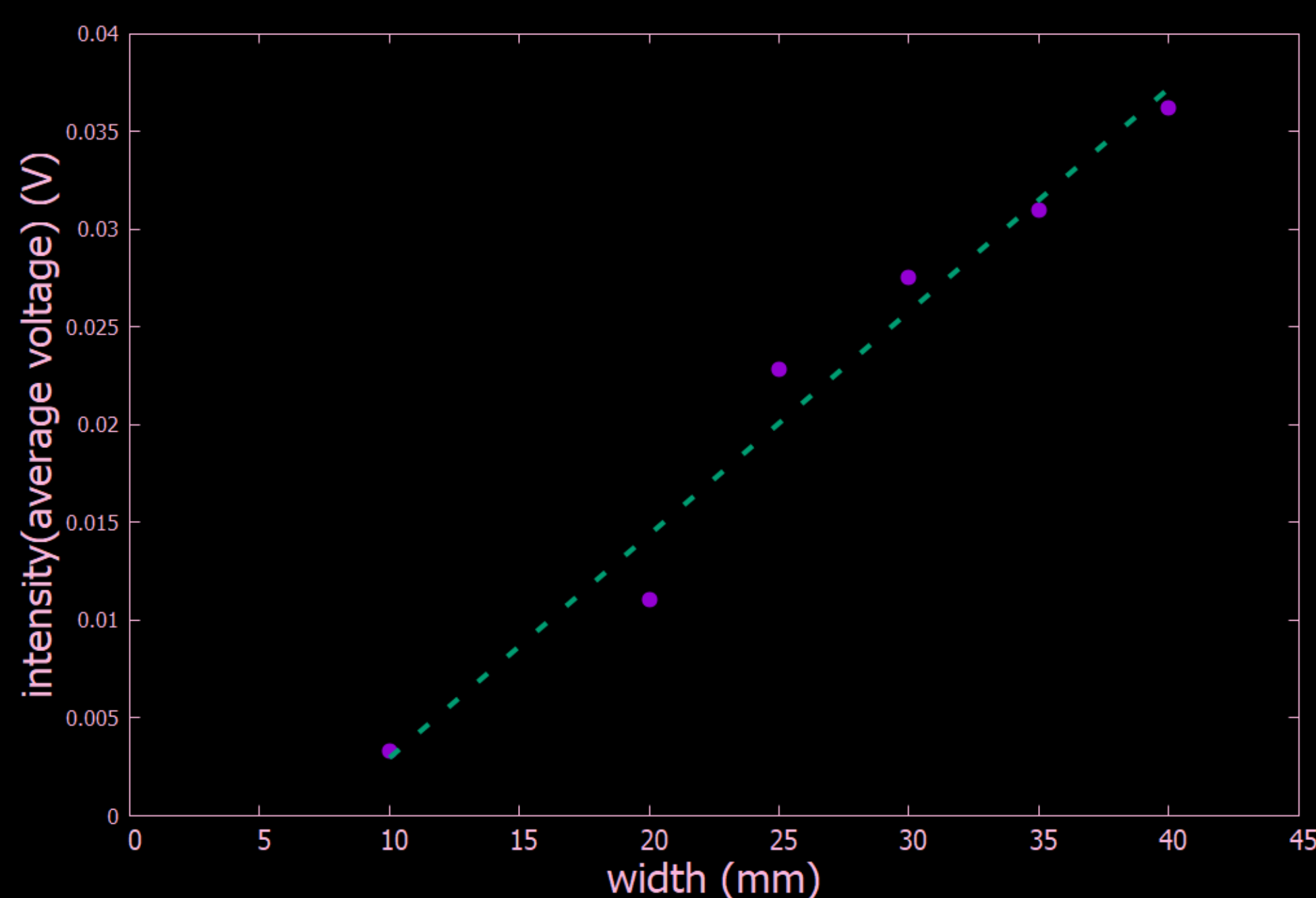
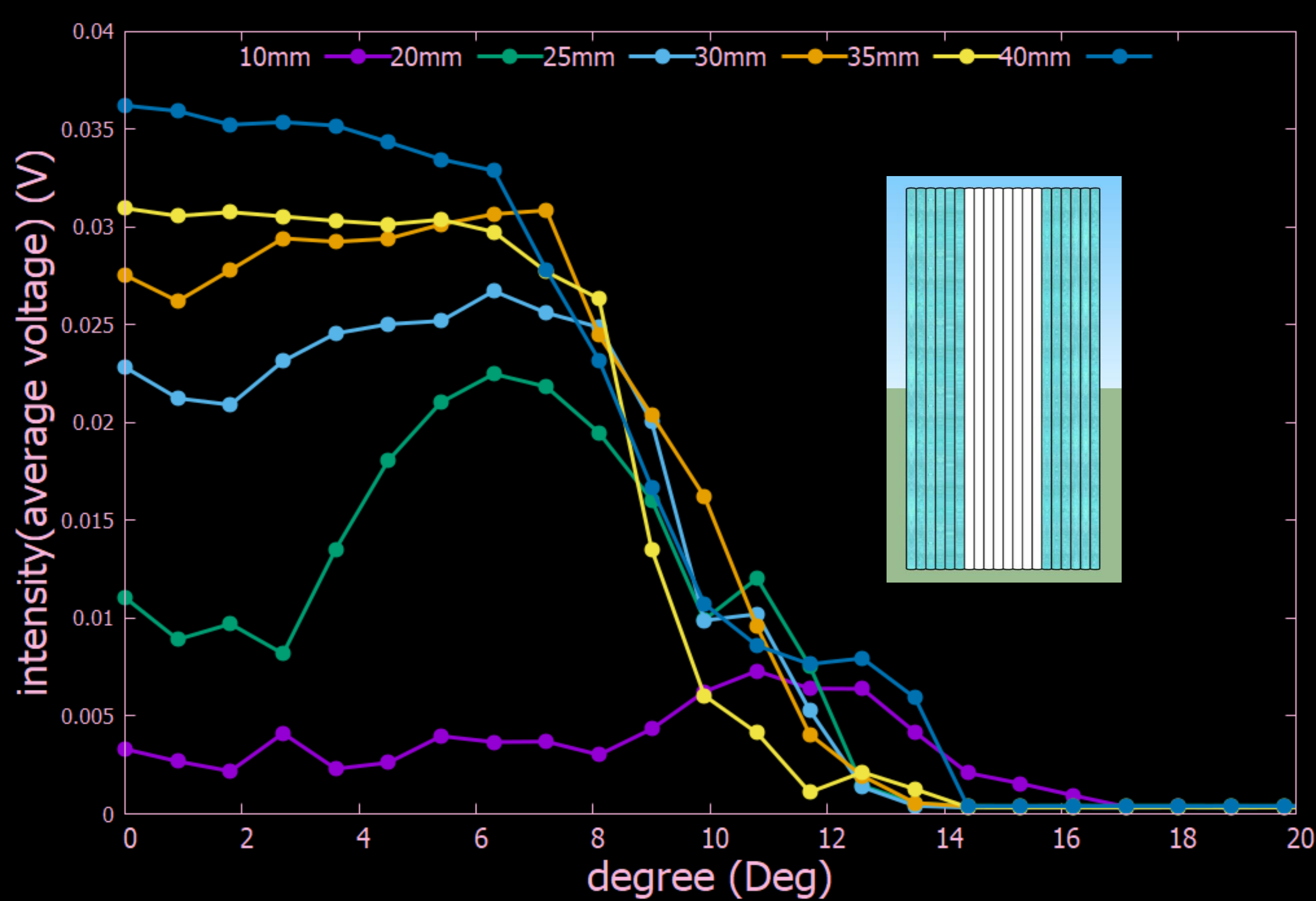
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Introduction

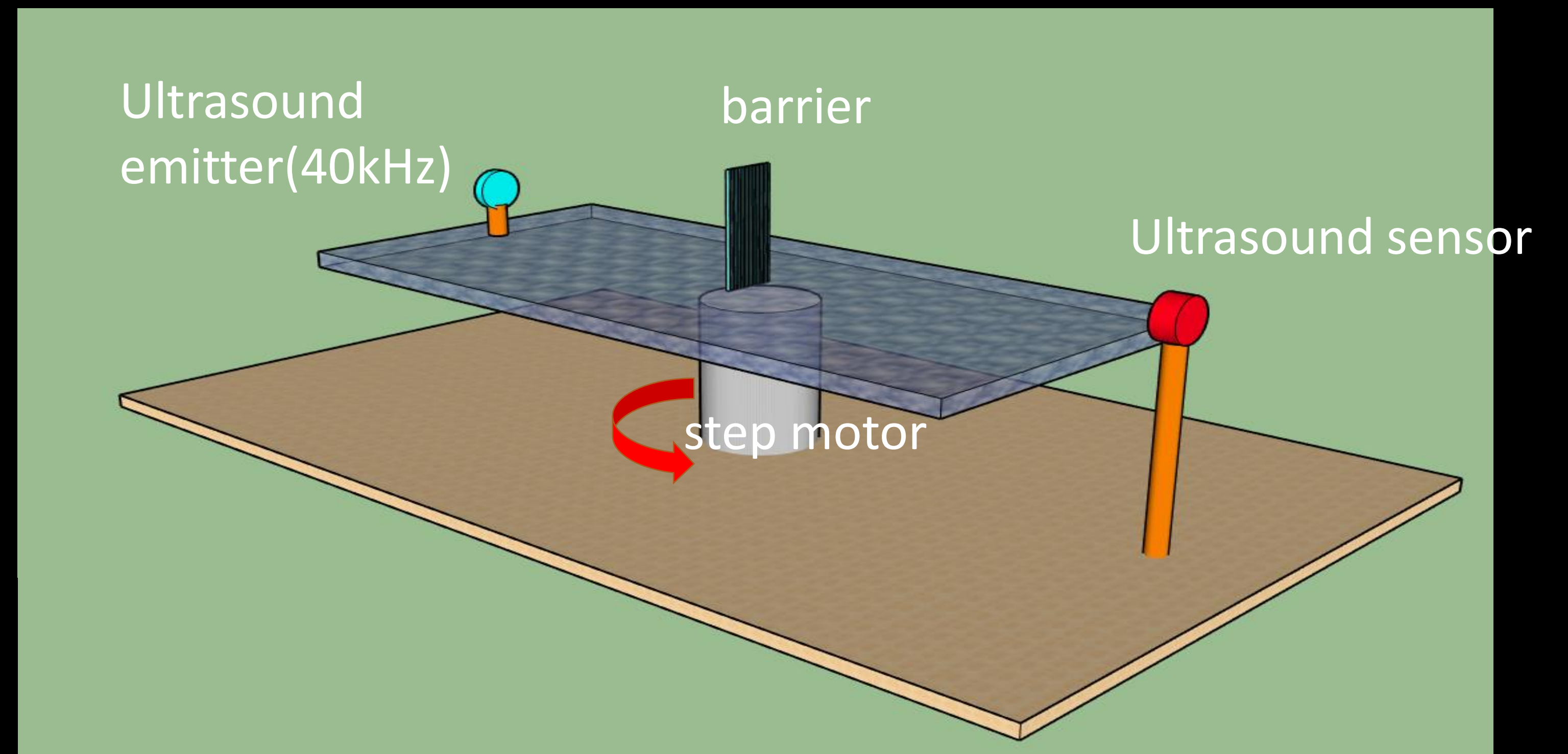
There are many applications in ultrasound wave. For instance, higher frequency about 1MHz ultrasound wave is used for medical tests.

In this experiment, we set up an equipment to detect the slit between barriers we designed with ultrasound wave about 40kHz.

Result



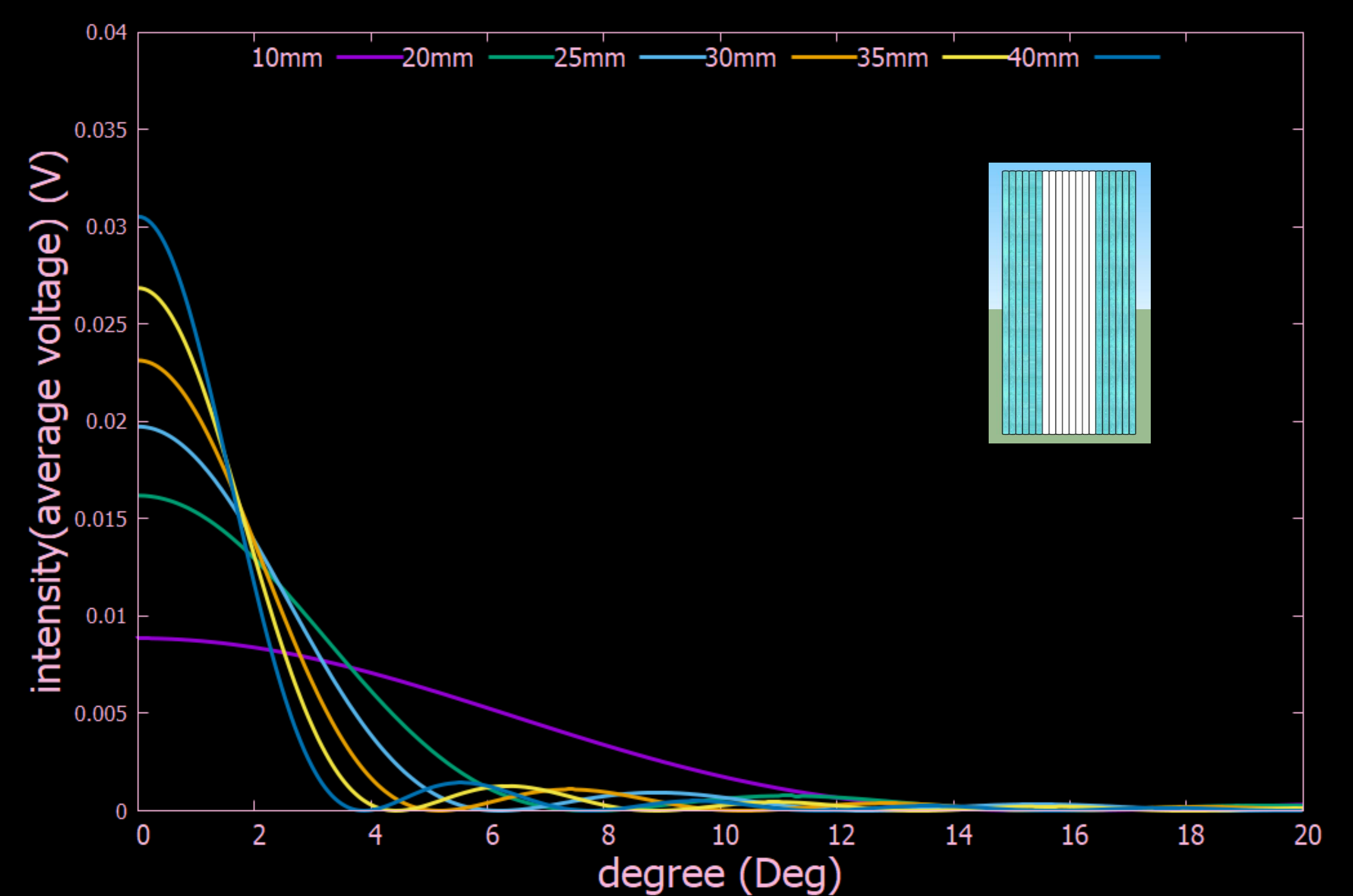
Set up and method



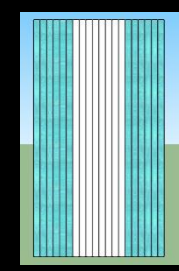
Theorem

$$I = I_0 \text{sinc}^2 \left(\frac{\pi a}{\lambda} \sin(\theta) \right),$$

$$a: \text{width} \quad \lambda: \text{wavelength} \quad \text{sinc}(x) = \frac{\sin \pi x}{\pi x}$$



Conclusion

1. Ultrasound wave can differentiate the width of our sample. 
2. For the diffraction we want to show, the result can correspond to some behavior from the theoretical graph
3. We failed to find the strong relation between the barrier with more slits or less slits. 