

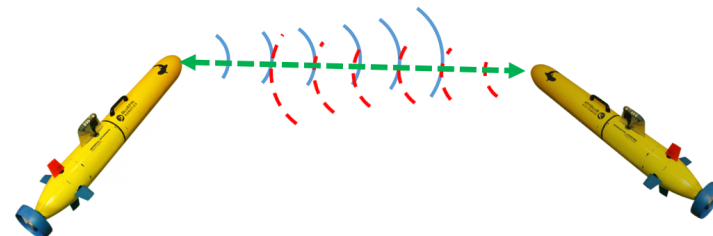
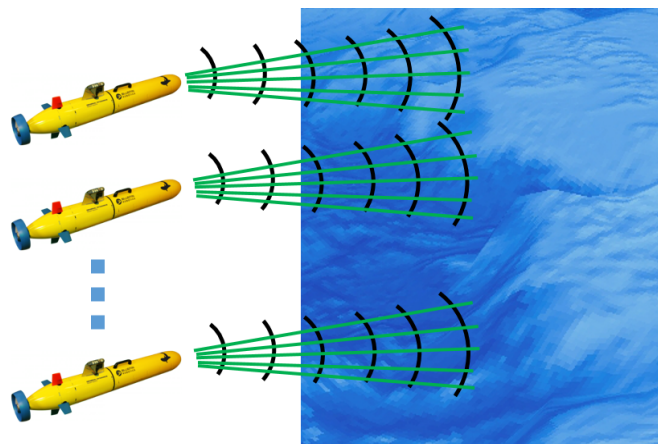
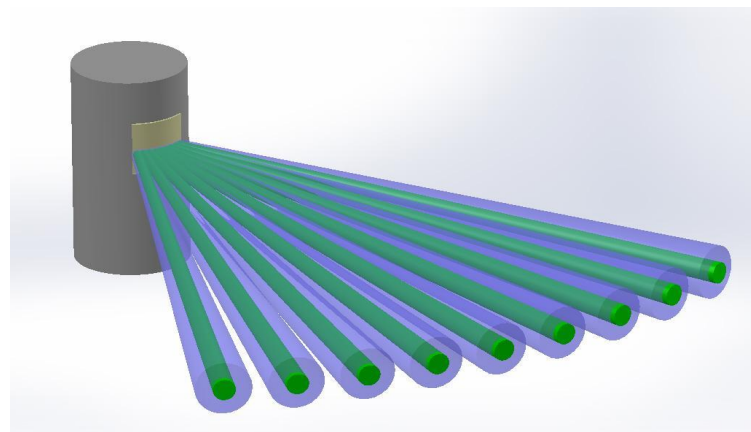
EAGER: MEMS CO-STEERED OPTICAL AND ACOUSTIC DUAL MODAL COMMUNICATION AND RANGING DEVICES FOR UNDERWATER VEHICLES

NRI-1748161

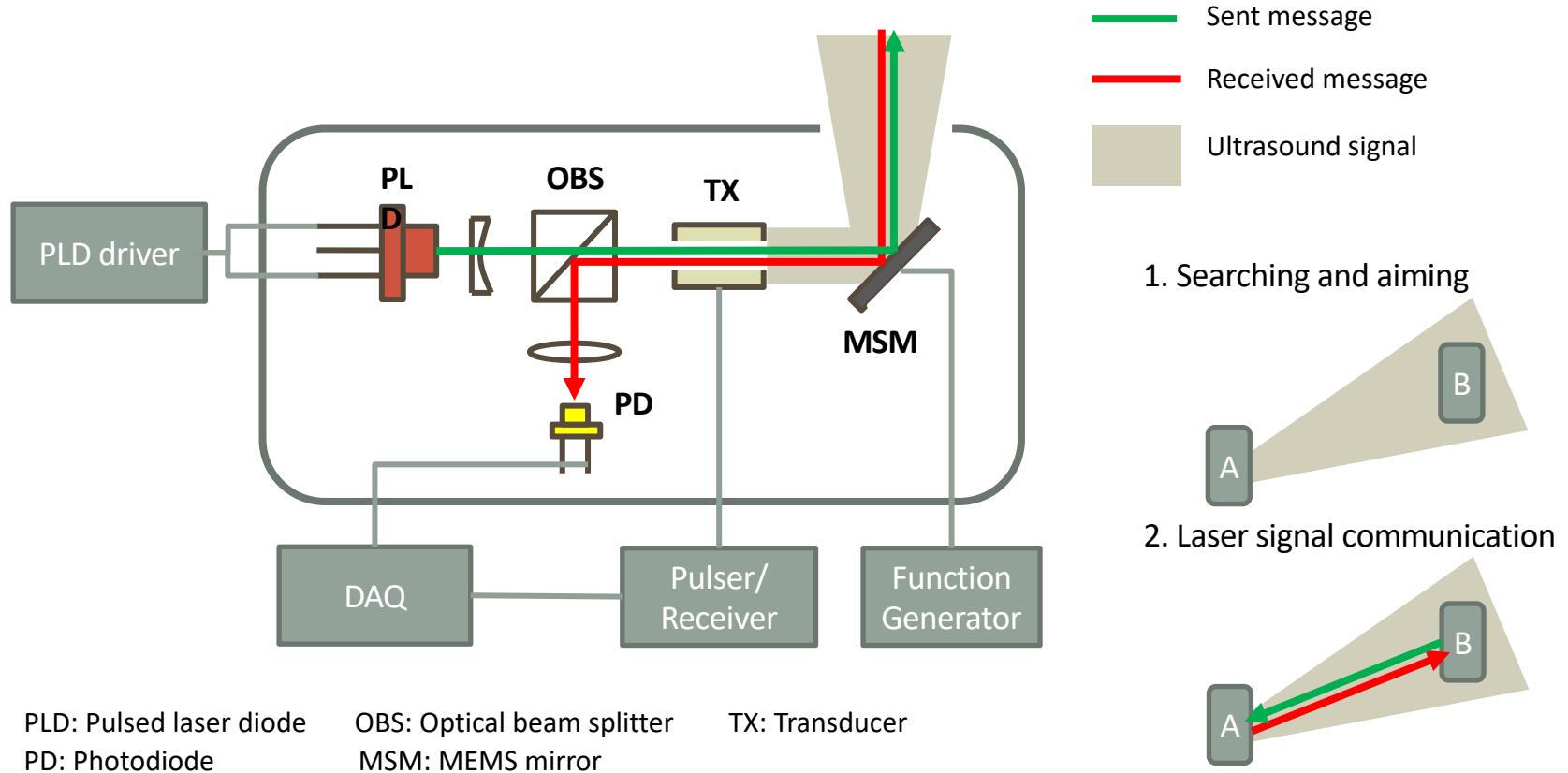


PI: Zou Jun
Co-PI: Dezhen Song
Texas A&M University

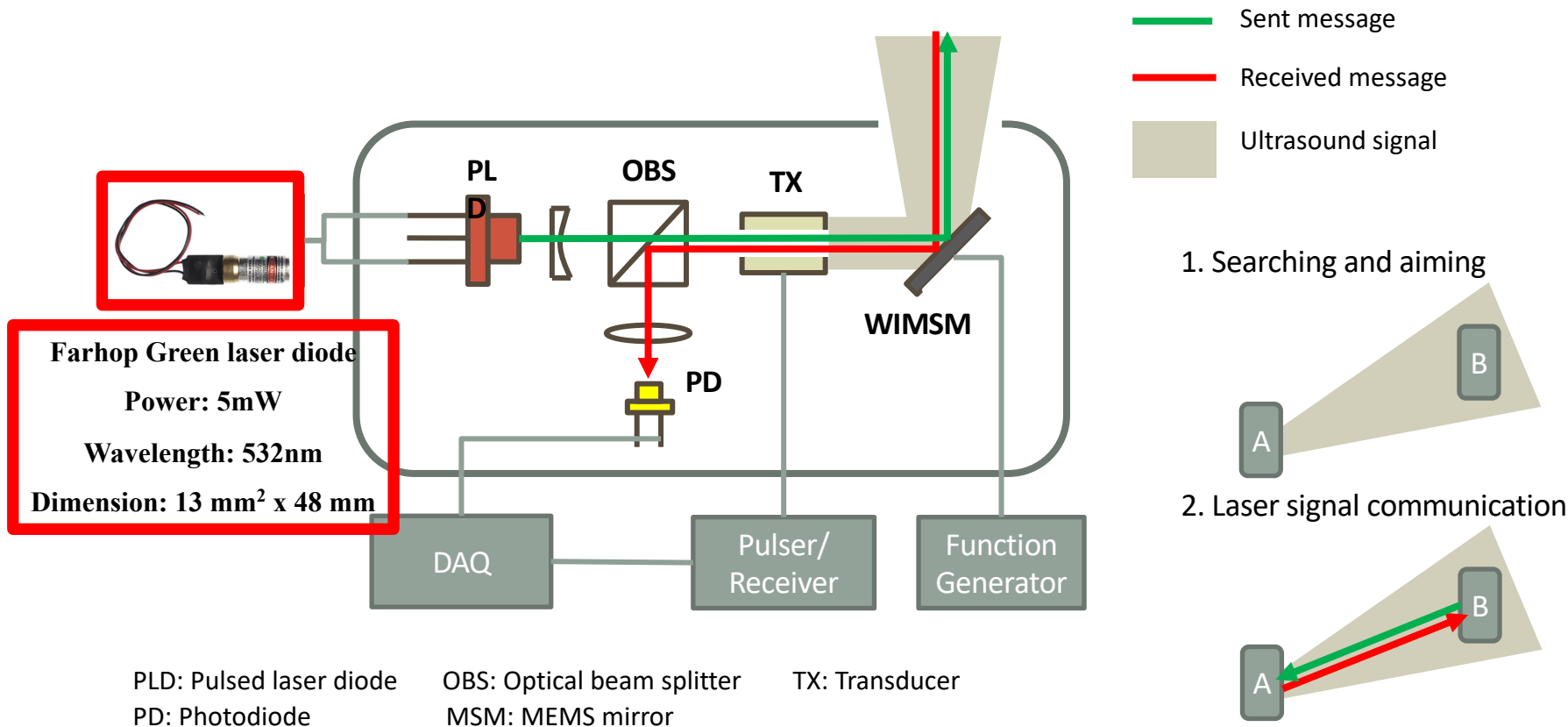
OPTICAL AND ACOUSTIC COMMUNICATION AND RANGING (PAIR)



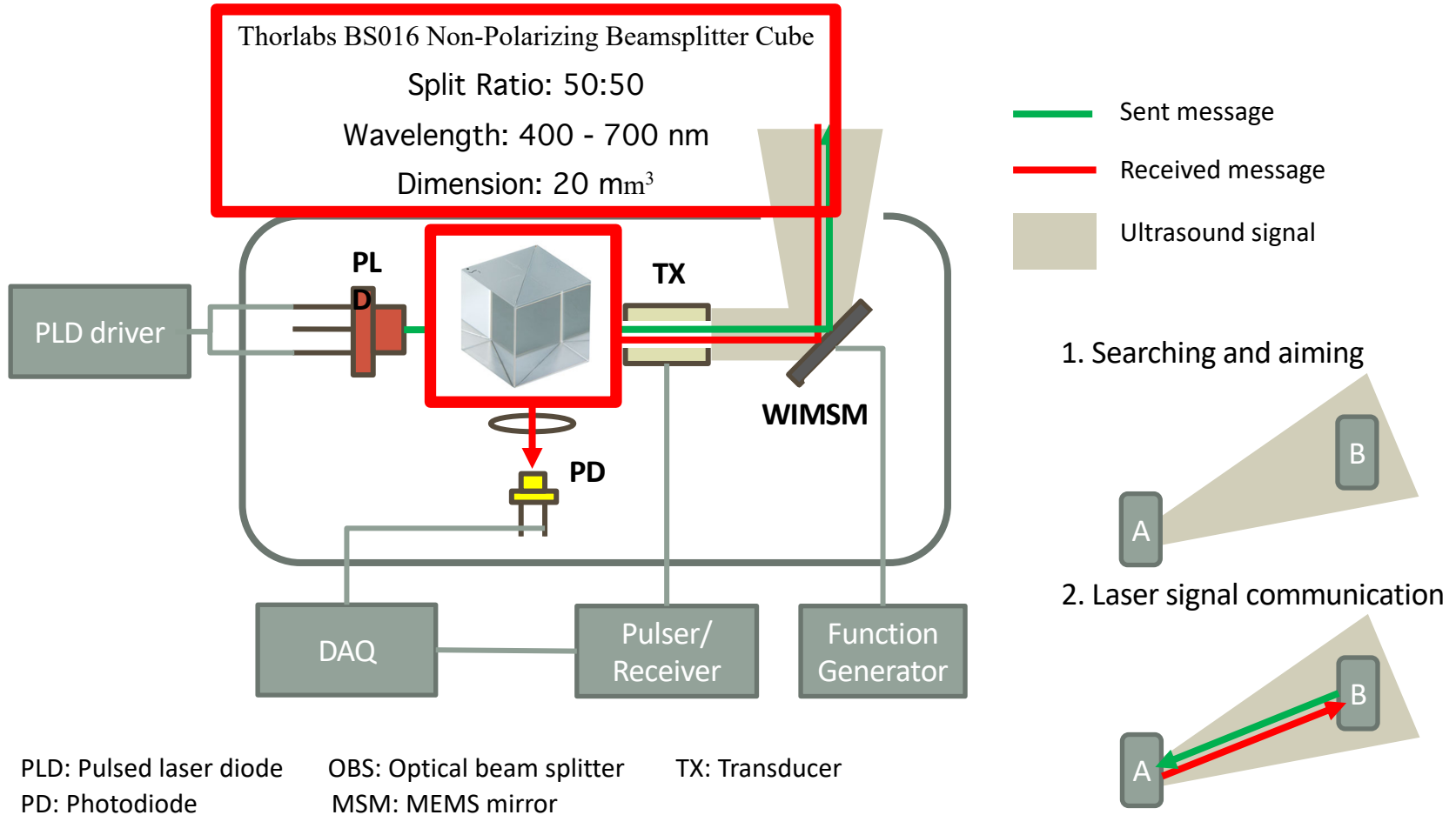
DESIGN DIAGRAM



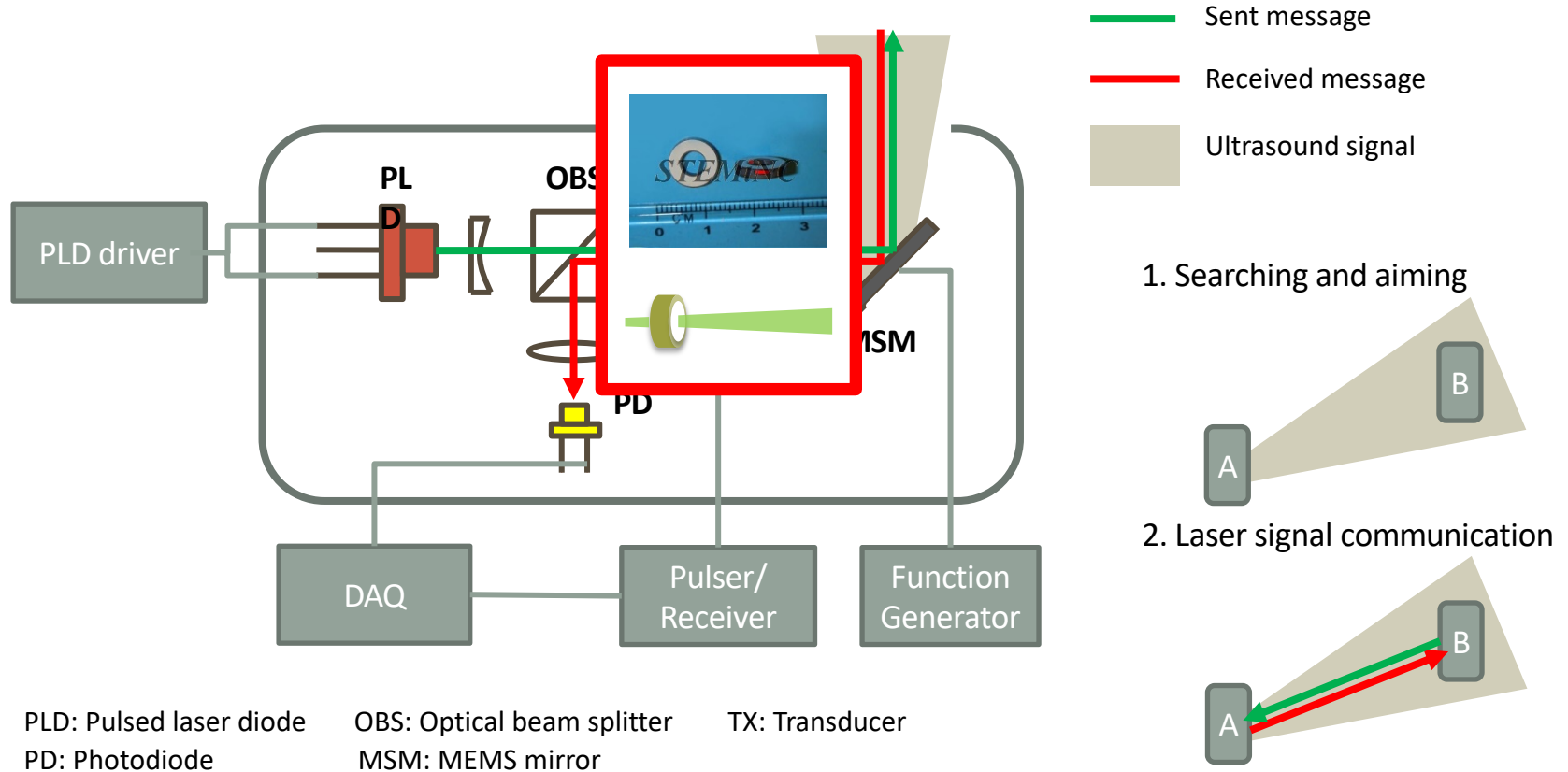
DESIGN DIAGRAM



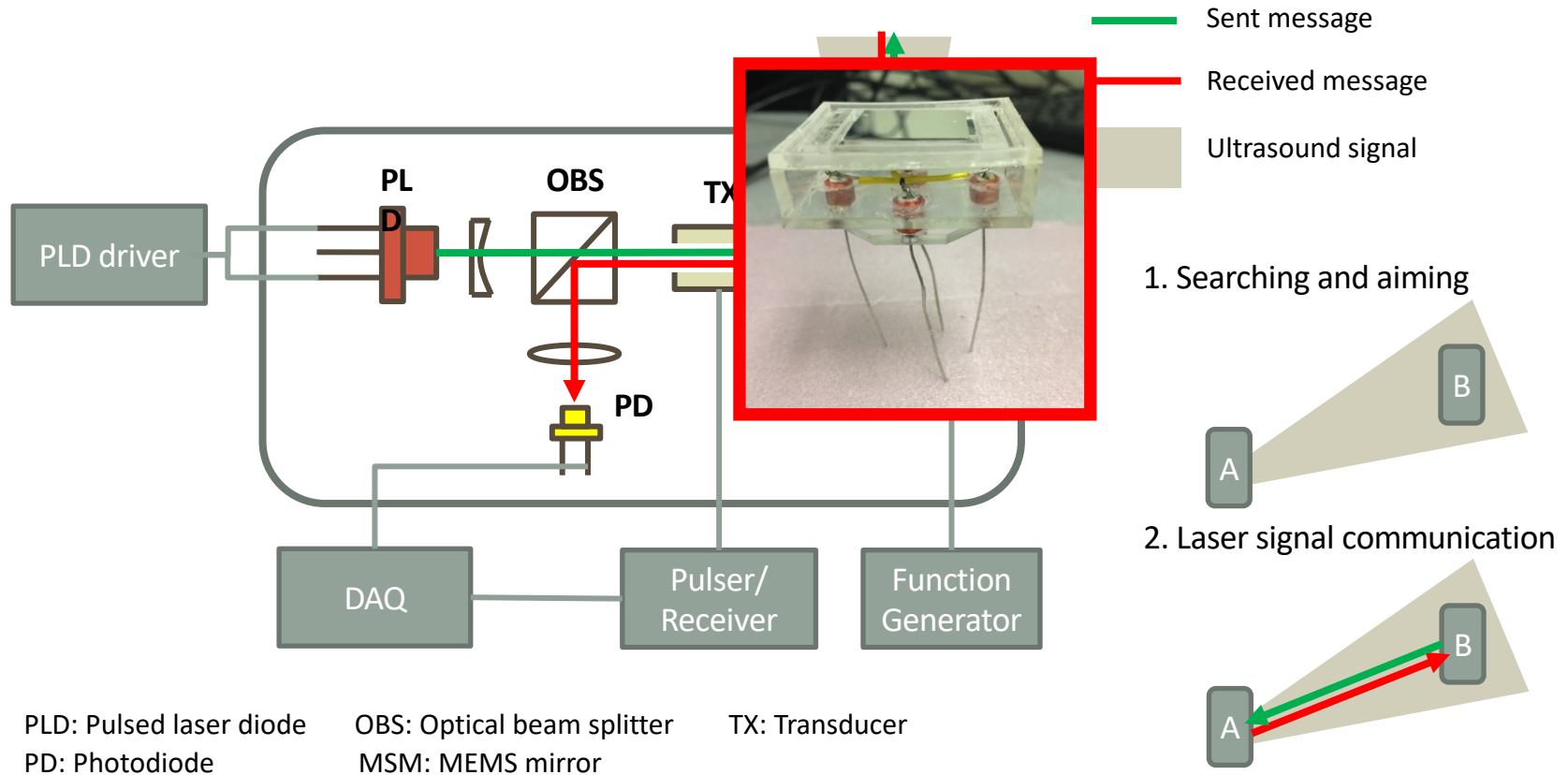
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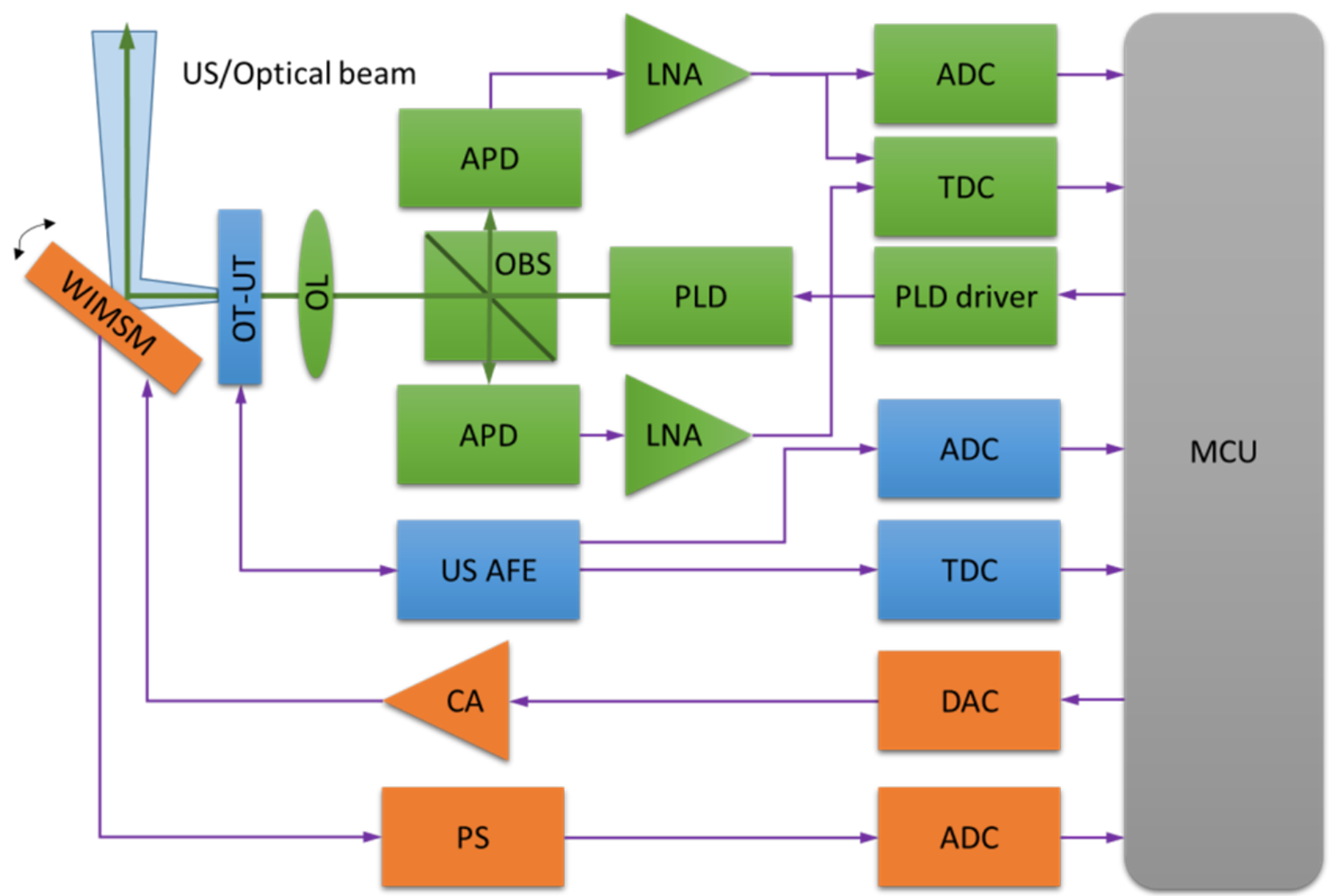


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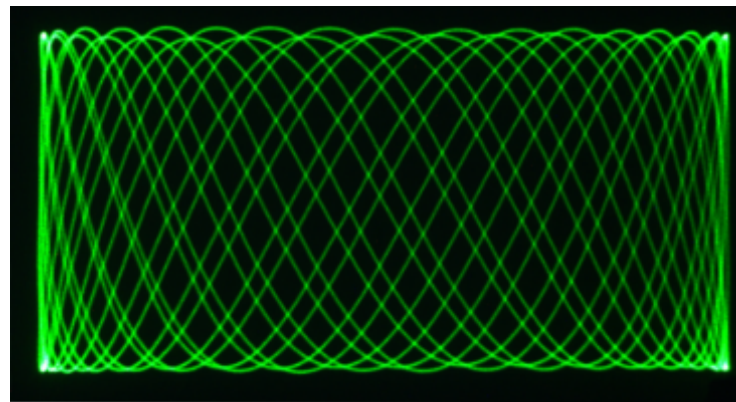
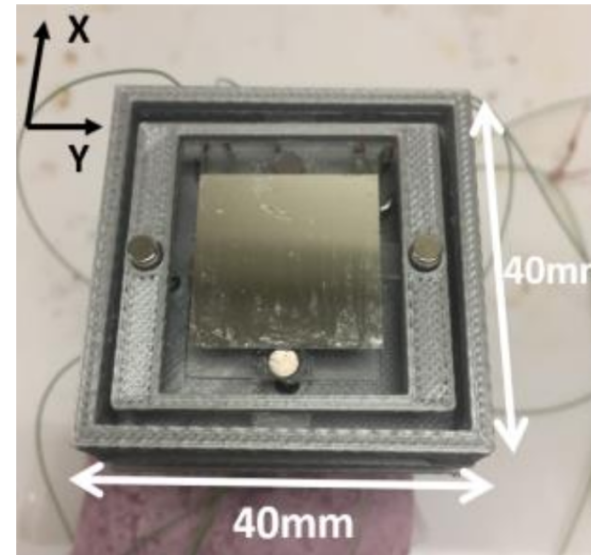
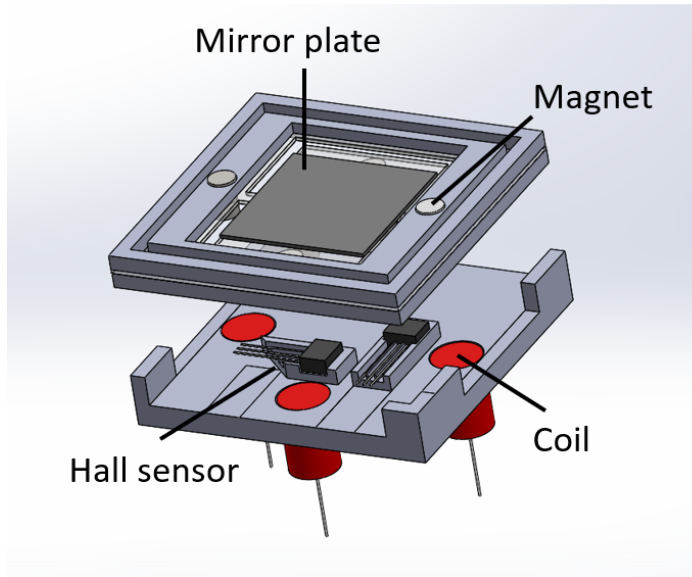


DESIGN DIAGRAM

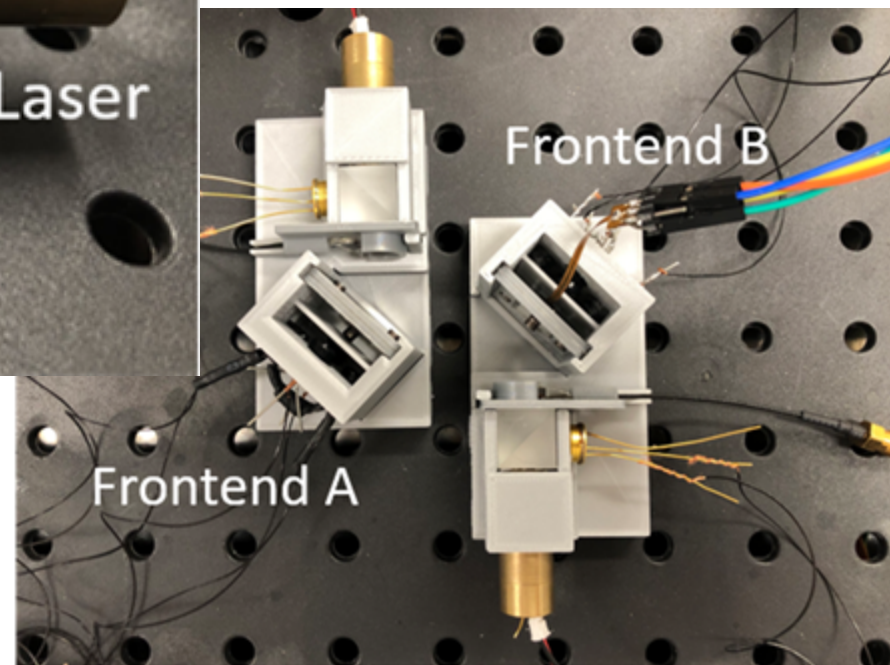
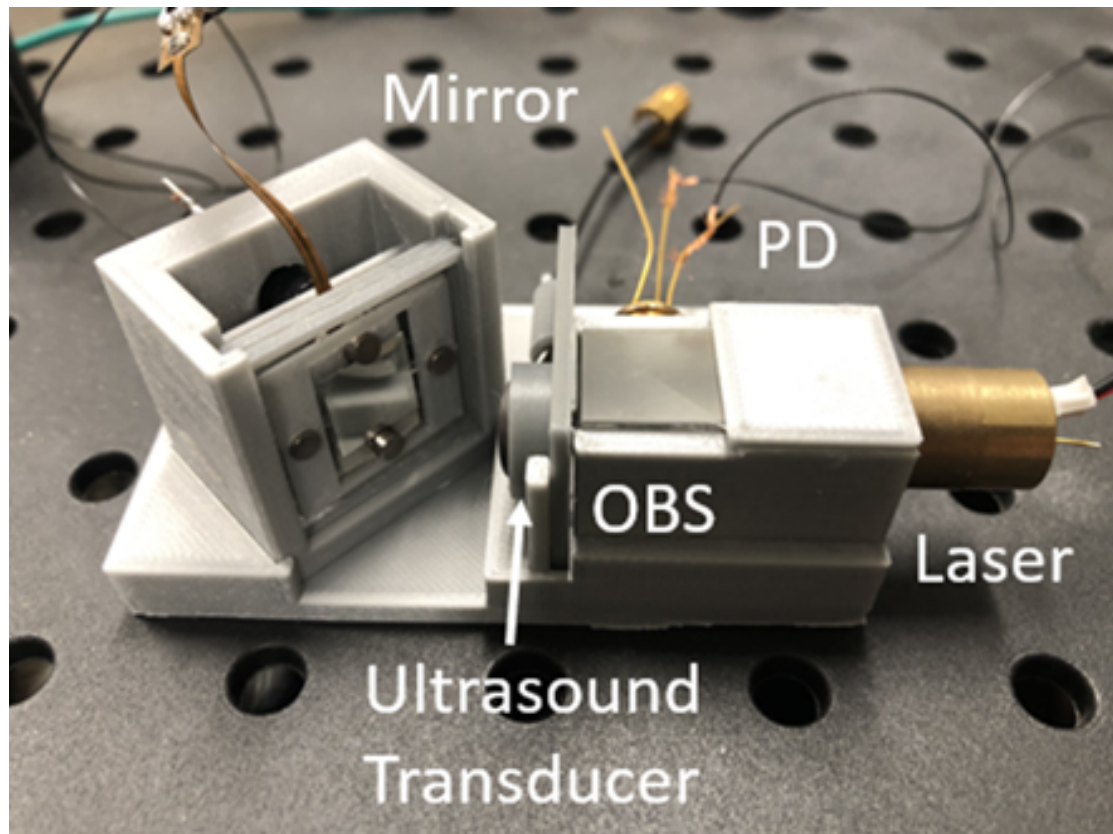




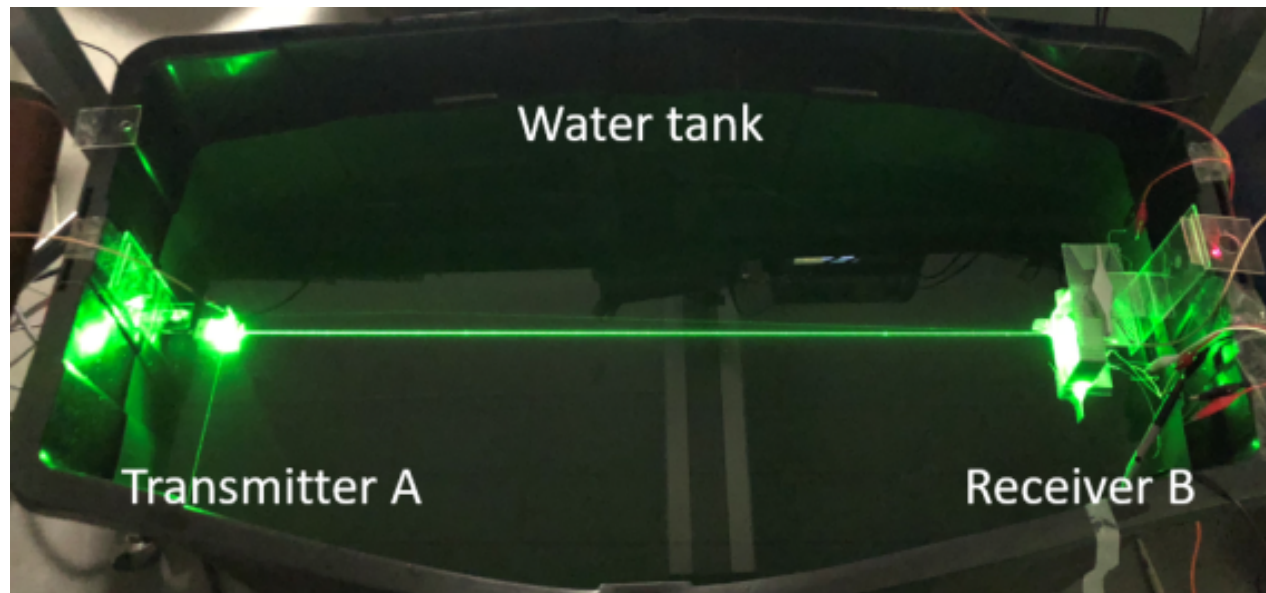
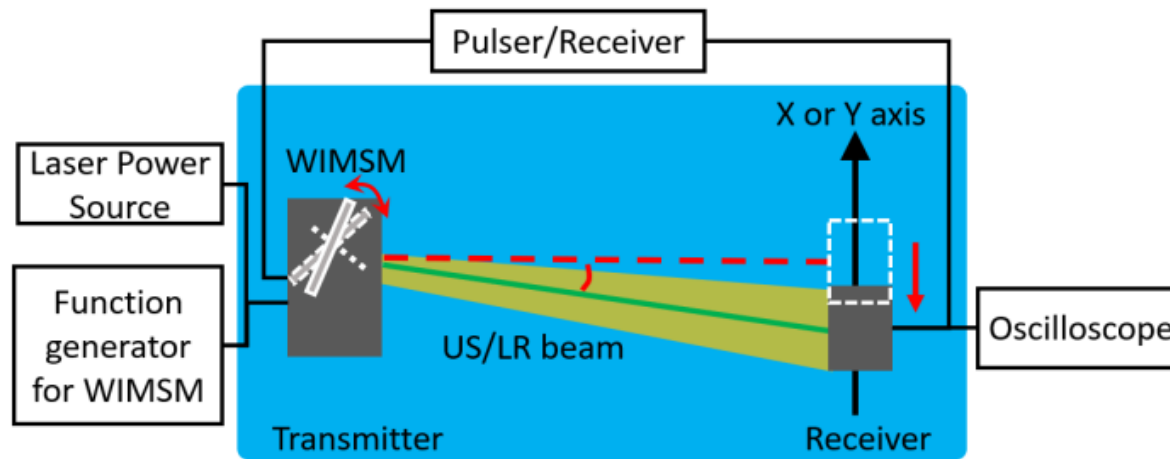
WATER IMMERSIBLE MEMS SCANNING MIRROR (WIMSM)



PROTOTYPE

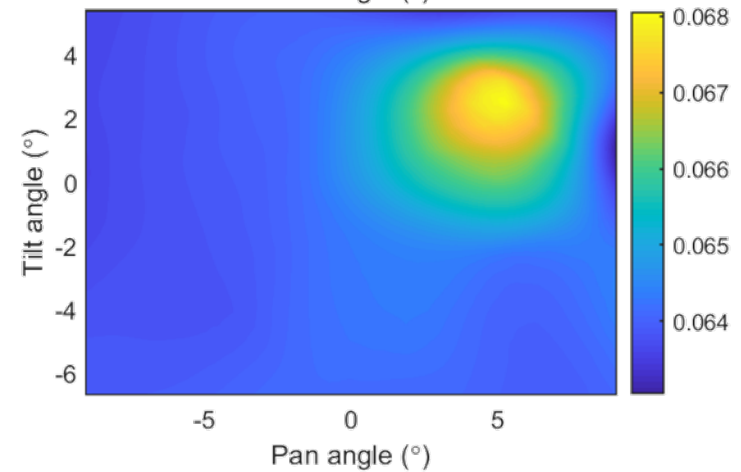
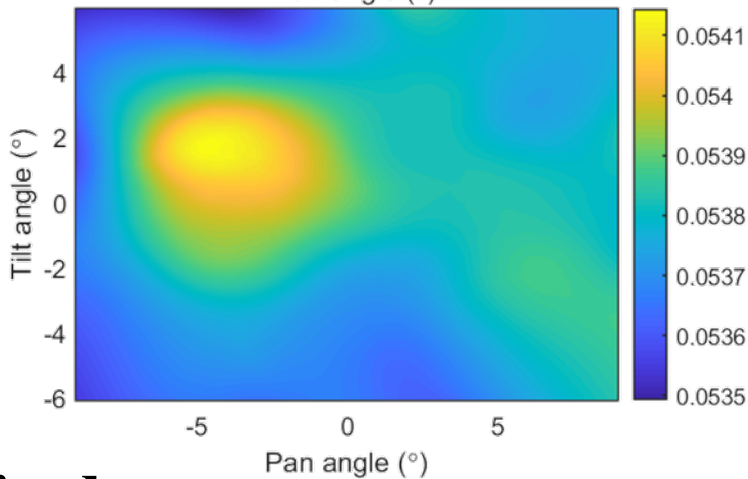
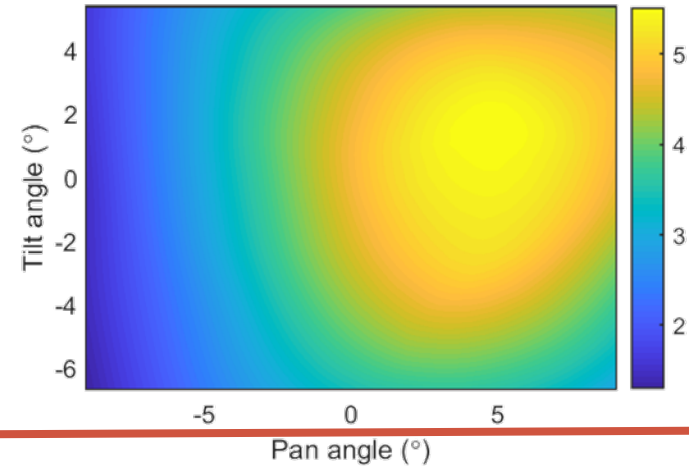
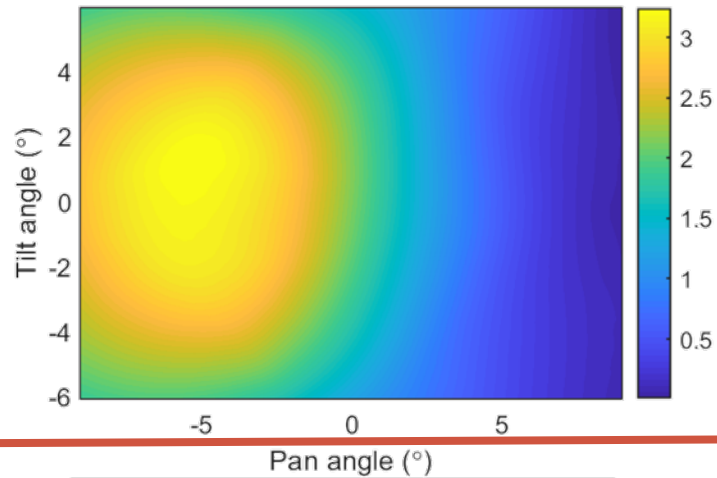


EXPERIMENTS



EXPERIMENTS

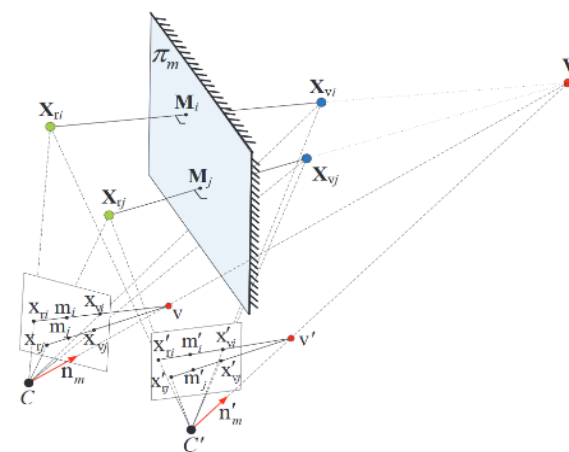
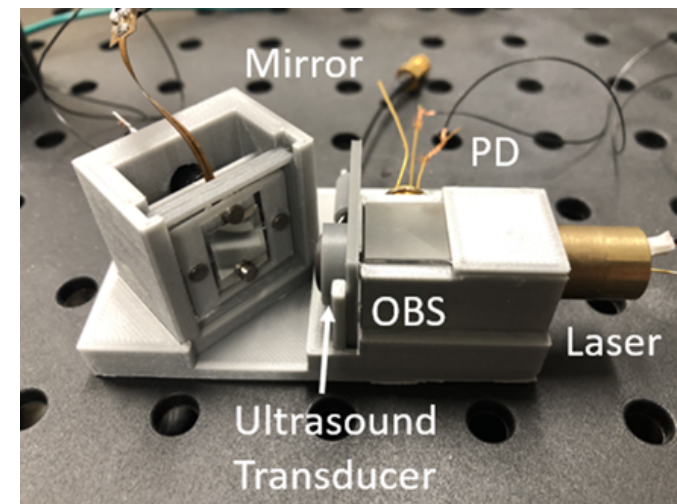
Acoustic



Optical

NEW CHALLENGES

- Better device frontend – multi-frequency transceiver,
- Soft hinge mirror design, calibration, and control
- Communication and navigation algorithms



THANK YOU!

