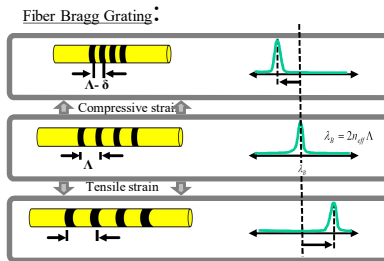
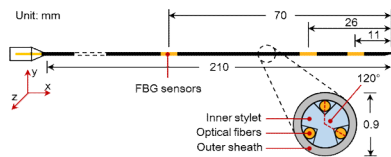


3D Real-time FBG-based Needle Shape Estimation

- This project aims to determine the shape of a flexible needle with asymmetric bevel tip which is inserted into tissue, in combination with measured curvature data by the FBG sensors.
- What Students Will Do:**
 - Build and calibrate sensorized needle
 - Finalize needle shape by mathematical model
 - Develop experimental setup with C-arm
 - Conduct experiments

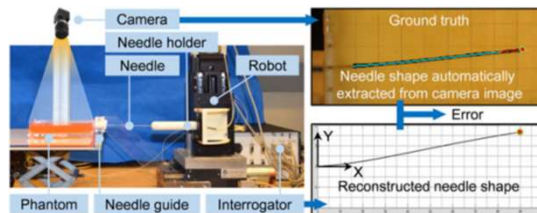


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3D Real-time FBG-based Needle Shape Estimation

- Deliverables:**
 - Sensorized needle and calibration matrix
 - MATLAB code for the models
 - Experimental results
- Size group:** 2
- Skills:**
 - Required: Good analytical skills, Programming (Matlab, C/C++), CAD
 - Desired: Kinematics, Control Theory, Electronics, Prototyping,
- Mentors:** Dr. Jin Seob Kim, Dr. Sungmin Kim, Dr. Iulian Iordachita



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