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In this capstone project, a fiber optic sensor was designed to monitor the curing of epoxy resin in the manufacturing of wind turbine blades in order to determine when the resin has reached full cure. The sensor acts as a waveguide that light travels through. As the resin cures less light transmits through until the resin reaches full cure. Research was done on the manufacture of the optical fiber sensor comparing glass and polymer fibers in order to determine the materials which should be used in the sensor. Different methods for creating the sensor were researched. Prototypes were made using acrylic (PMMA) and glass optical fibers. The final sensor design is currently being validated through laboratory testing.

