Supplemental information for:
A photonic pH sensor based on photothermal spectroscopy

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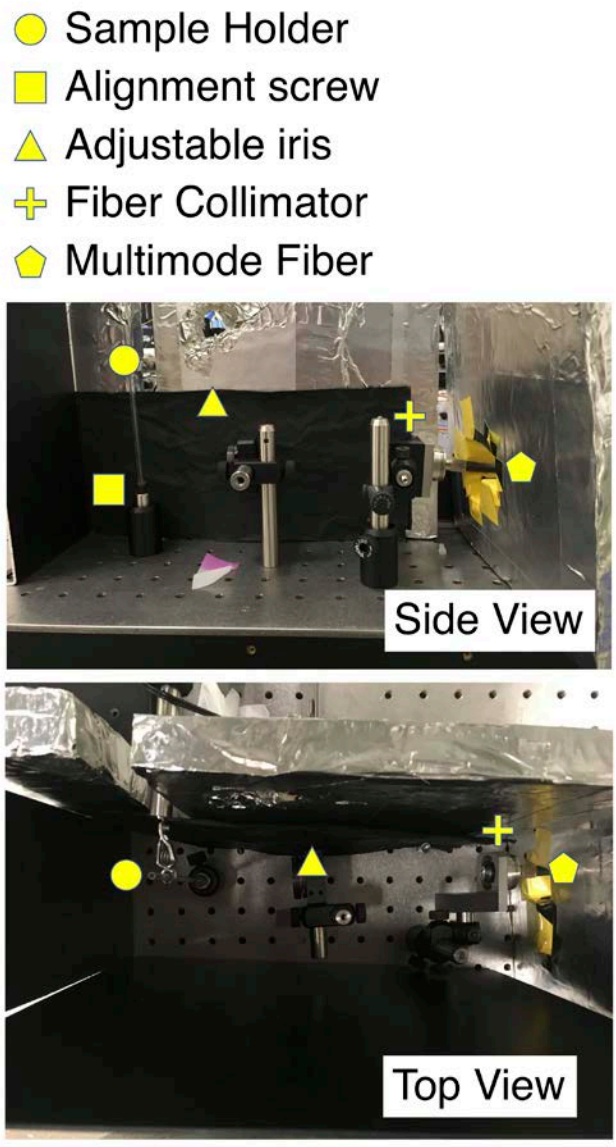

Figure S1. Experimental setup for observation of heat release upon absorption of red or green light by a pH sensitive chromophore in solution. Excitation light from a multimode fiber passes through a collimator and then an iris before entering the sample holder. A solution containing a pH sensitive chromophore and the fiber Bragg grating sensor (FBG) are contained within the glass sample holder. The height of the sample is adjusted to maximize the overlap between the FBG and the excitation light.

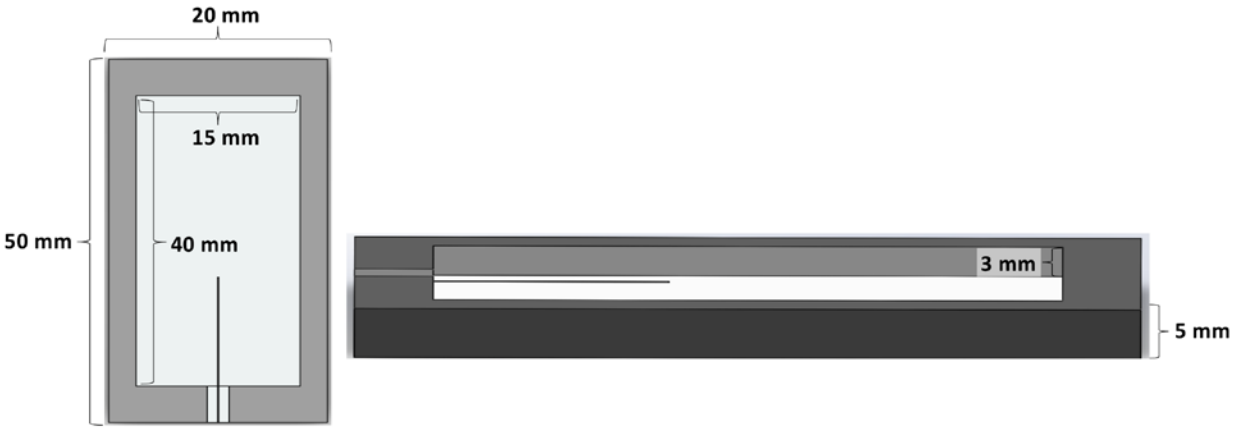

Figure S2. Schematic of 3D printed mold for coating fiber. Left: top view of the mold. Right: side view of the mold.

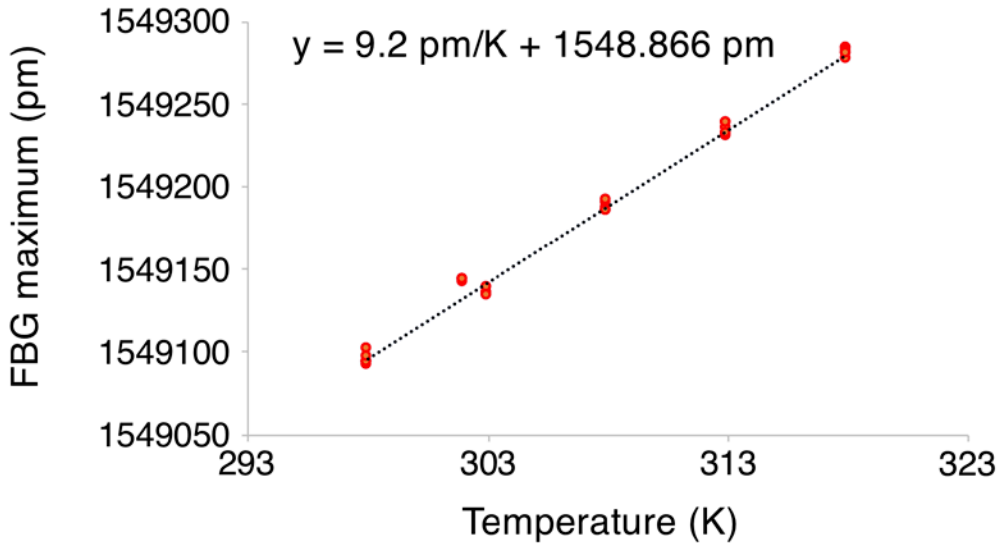

Figure S3. Temperature response of the hydrogel coated fiber. The coating slightly changes the fiber response to temperature. The coated fiber shifts 9.2 pm for every 1 K change in temperature. For the bare fiber, this change is 10.9 pm per K (as shown in reference 22 from the main text).

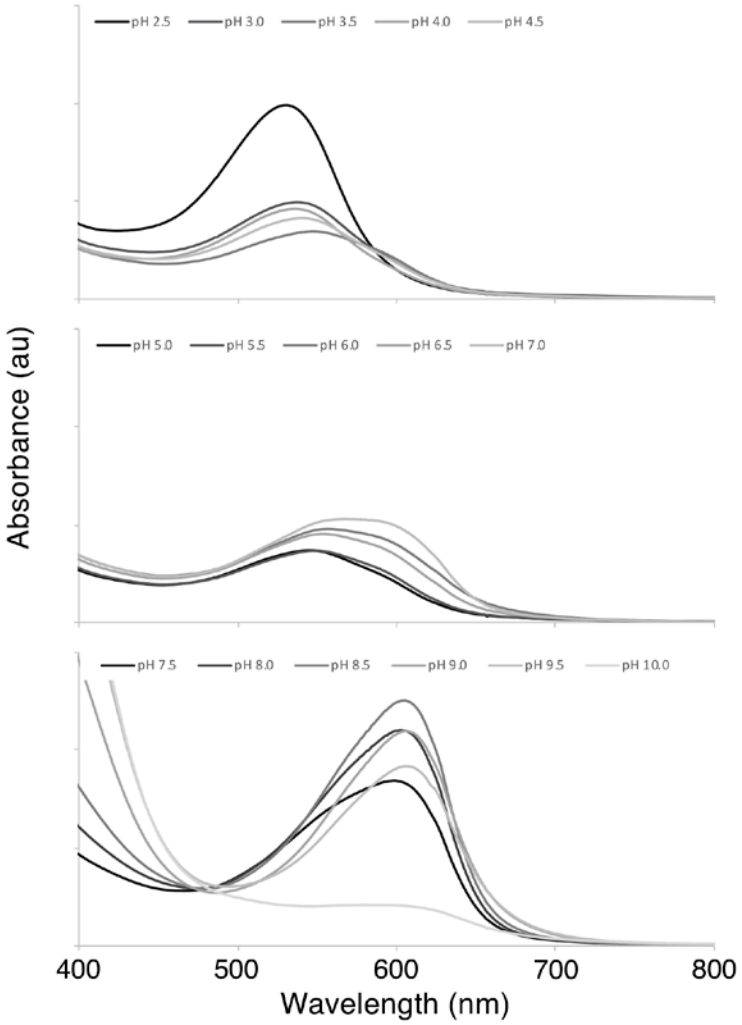

Figure S4. UV-Vis spectra of red cabbage powder in buffers with various pH values.

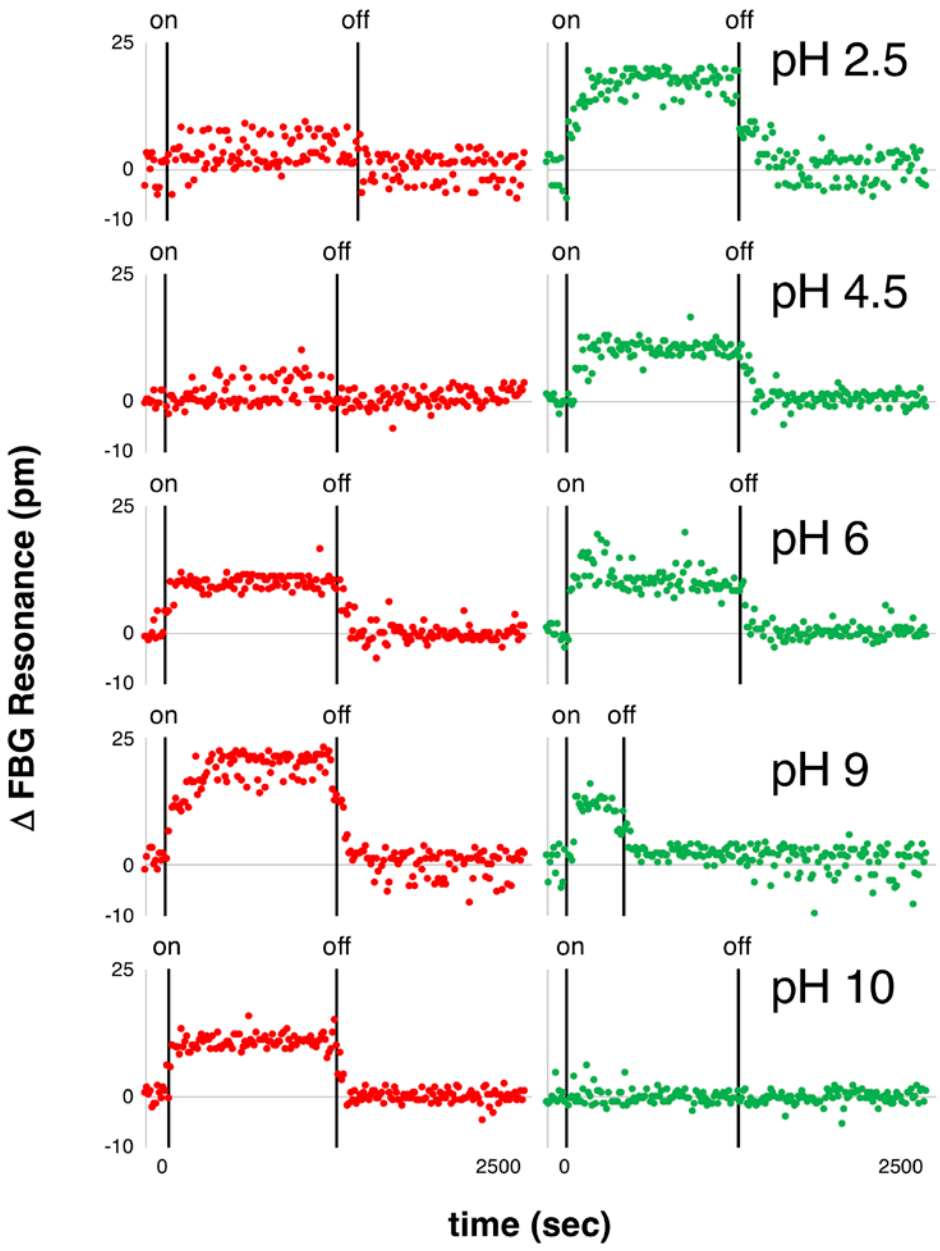

Figure S5. Representative changes in FBG response as a function of time upon excitation with red or green light.

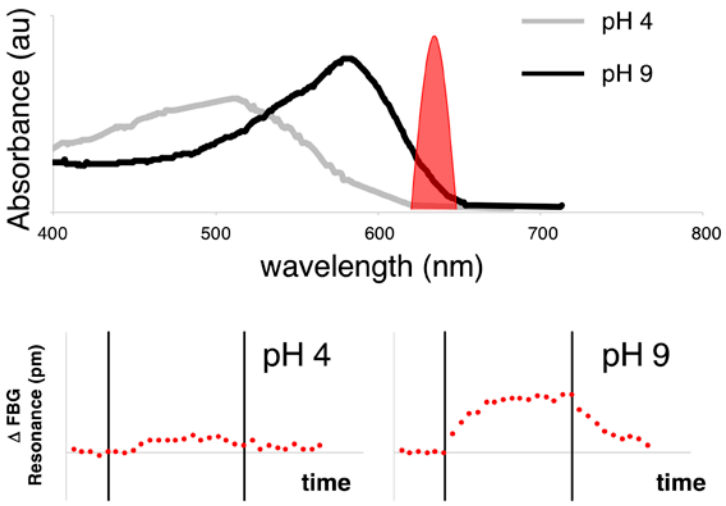

Figure S6. Top: Absorbance spectrum of litmus at pH 4 (gray) and pH 9 (black). Bottom: FBG response (over time) due to light absorption by chromophores. Left: Response at pH 4. Right: Response at pH 9.