

Erratum

Owing to unfortunate figure reproduction issues, the figures for the printed and on-line editions of the article “*In-situ* Measurements of Temperature Distributions in a Microwave-Heated Cavity” by Finegan et al. (Volume 52, No. 8, August 2006, pp. 2727–2735, DOI: 10.1002/aic.10897) did not reflect the quality of the originally-submitted artwork, and many of the features crucial to the interpretation and discussion of the results were not discernable. These figures are reproduced here in their original quality to enable correct visualization of the experimental and predicted temperature distributions in a microwave heated cavity.

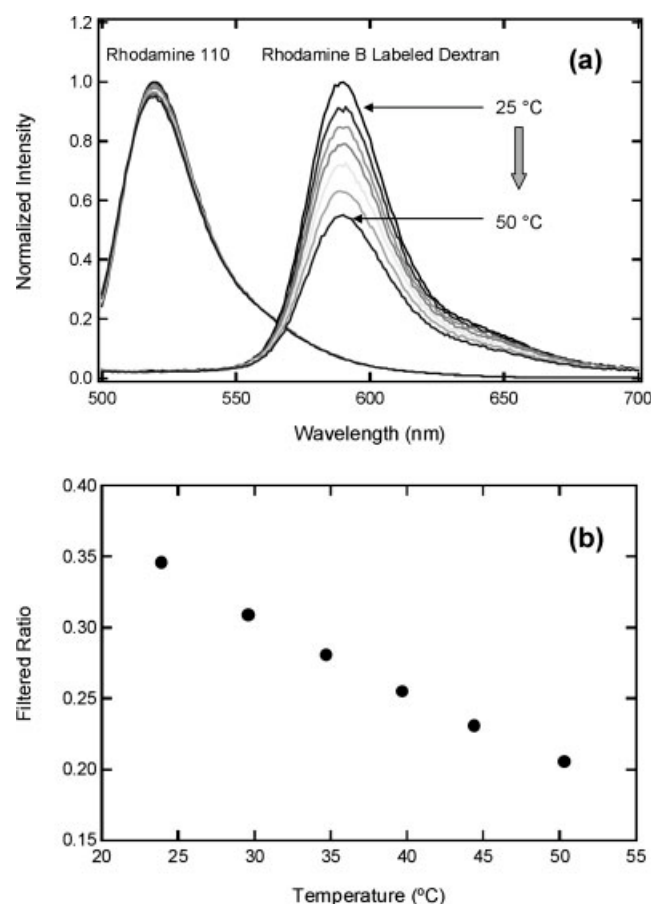


Figure 1. Temperature dependent fluorescence of Rhodamine B-labeled Dextran and Rhodamine 110.

(a) Fluorescence spectra; (b) temperature response of the ratio of Rhodamine B and Rhodamine 110 integrated fluorescent intensities.

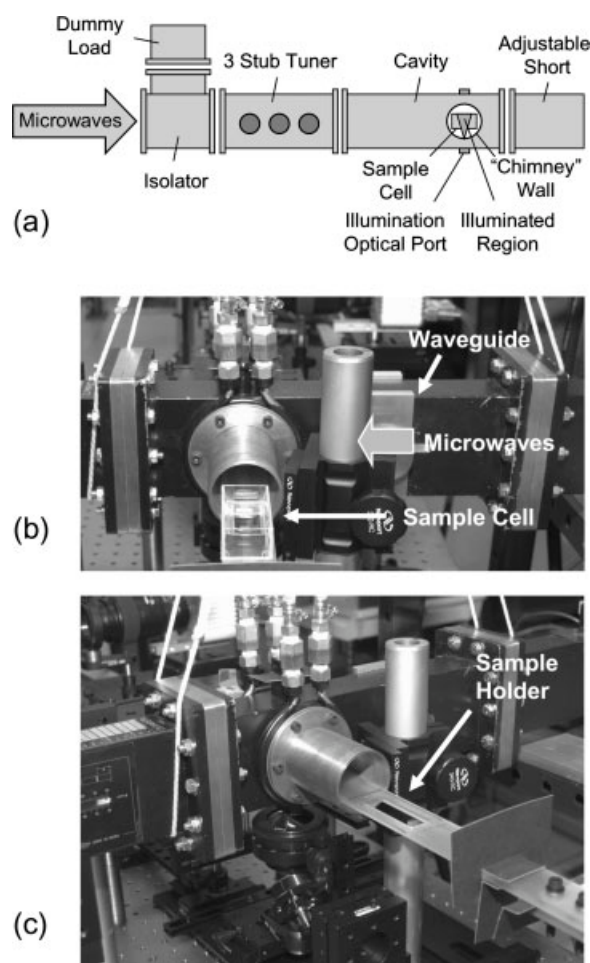


Figure 2. (a) Experimental microwave applicator showing location of the isolator, dummy load, tuner, cavity and short circuit. Optical ports for the introduction of the excitation beam and the observation of the emitted fluorescence signals are shown; (b) microwave cavity with sample cell prior to insertion; and (c) a view of the sample cell holder with opening for access by the laser.

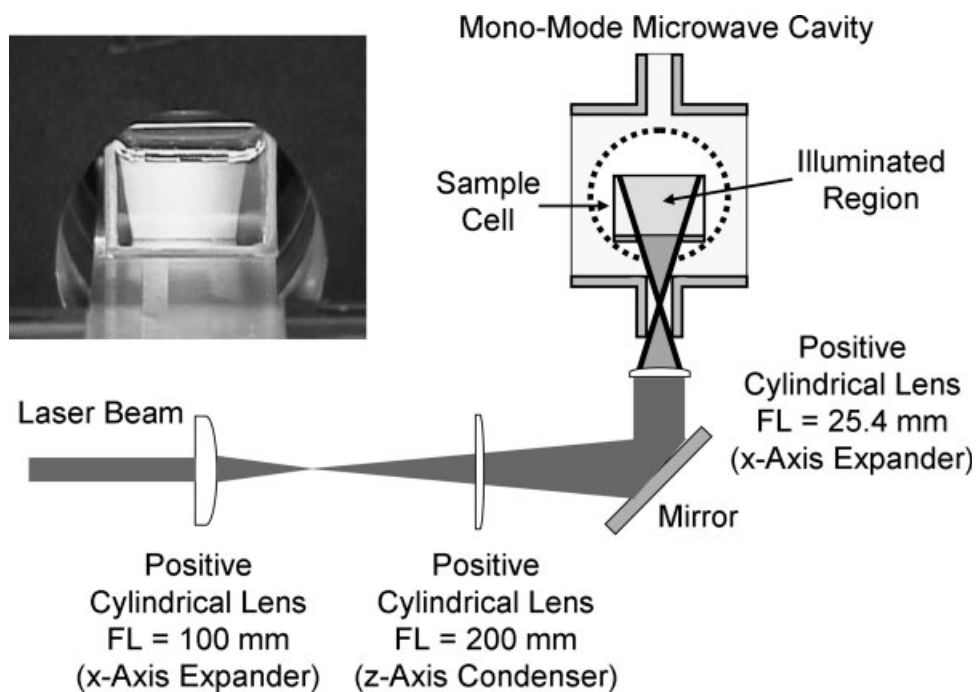


Figure 3. Laser optics design for PLIF illumination inside the microwave cavity.

Inset image shows actual illumination of a sample by the laser.

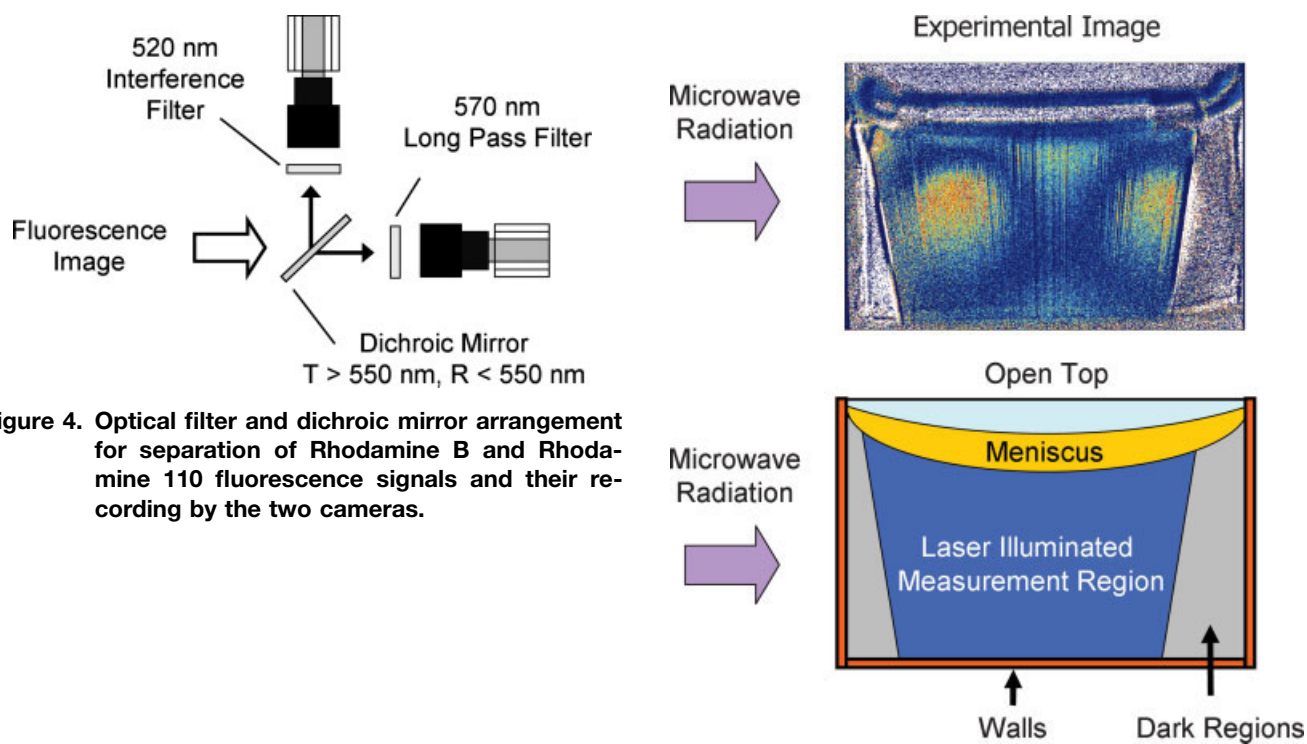


Figure 4. Optical filter and dichroic mirror arrangement for separation of Rhodamine B and Rhodamine 110 fluorescence signals and their recording by the two cameras.

Figure 5. Illuminated sample cell (lower) with representative experimental image obtained using PLIF (upper).

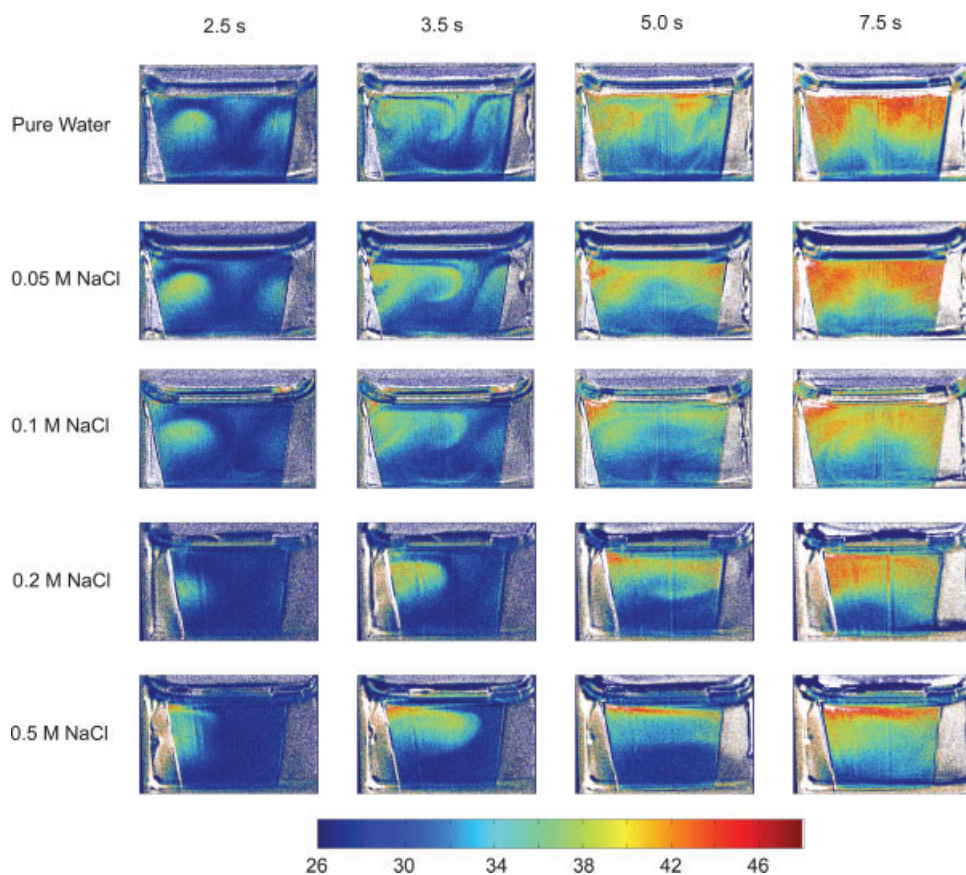


Figure 6. Experimental results showing measured temperature profiles produced by microwave heating of different concentrations of NaCl in water during the first 7.5 s of heating.

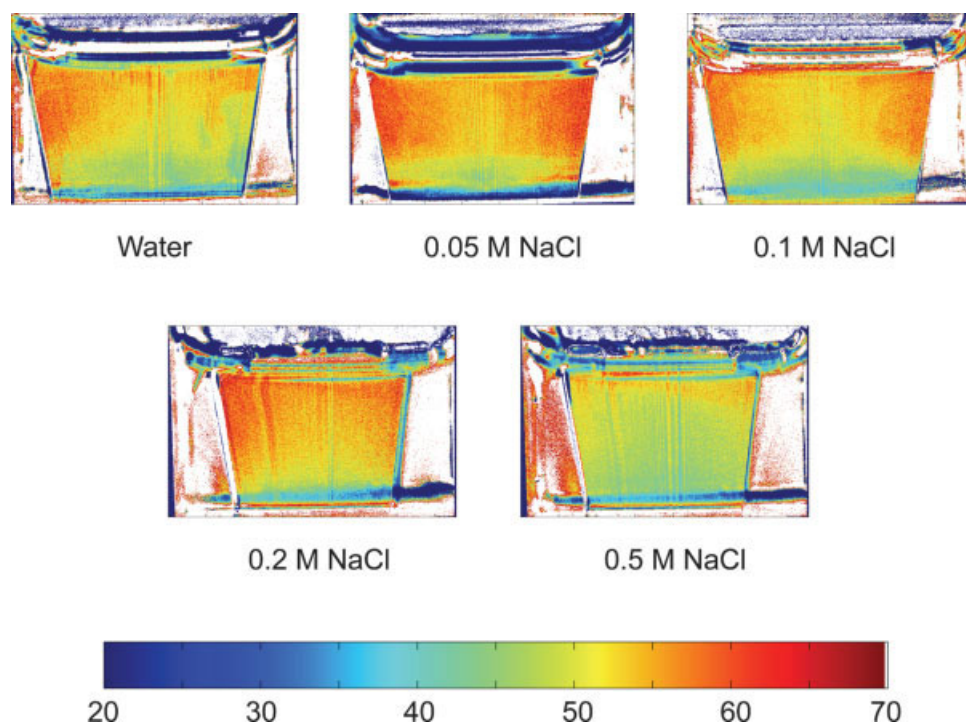


Figure 7. Final temperature distributions in the sample cell for different concentrations of NaCl in water after 30 s of microwave heating.

(Note: The temperature color scale is different from Figure 6.)

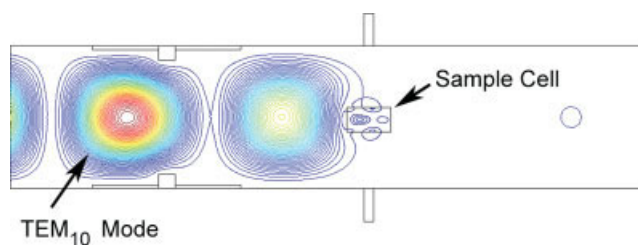


Figure 8. Calculated electric field distribution in the microwave waveguide, in which the incident microwave radiation is applied from the left.

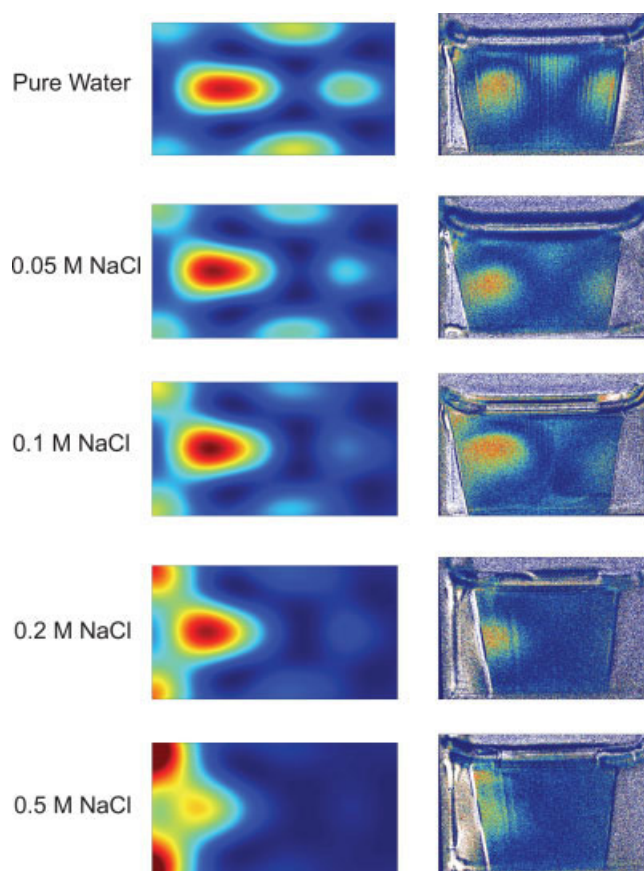


Figure 9. Simulation (left column) and experimental results (right column) for early time temperature profiles within microwave-heated aqueous solutions of different concentrations of NaCl.