Electronic Supplementary Information (ESI)

Spectral imaging of chemical reactions using a computer display and a digital camera

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ADDITIONAL FIGURES

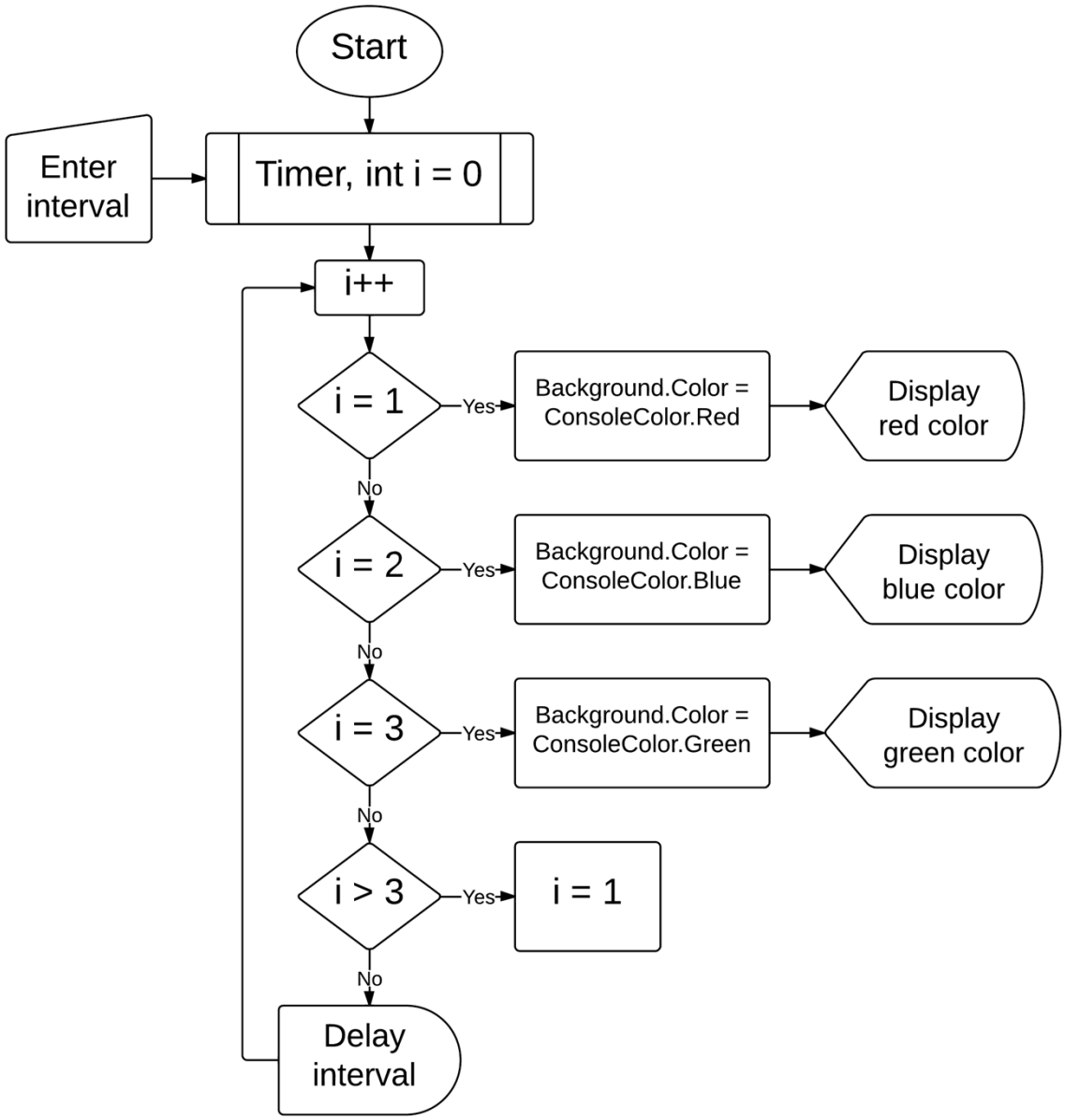

Figure S1. Flow chart of the program designed to change colour of the computer screen in order to illuminate the reaction chamber with light of different wavelength. The interval between two adjacent colours is 200-300 ms (in different experiments).

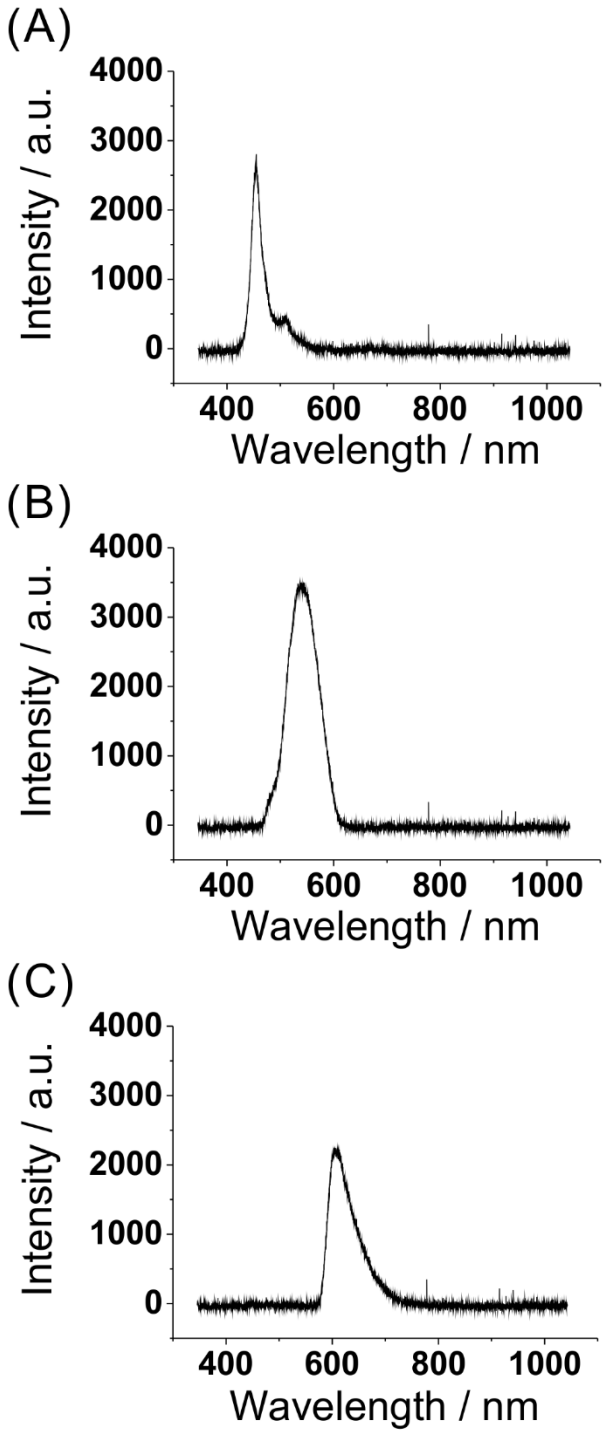

Figure S2. Emission spectra of the LCD/LED screen used in this study, recorded while displaying (A) blue (448-460 nm), (B) green (522-548 nm), or (C) red (600-624 nm) background (properties: *Console.BackgroundColor* = *ConsoleColor.Blue*; *Console.BackgroundColor* = *ConsoleColor.Green*; *Console.BackgroundColor* = *ConsoleColor.Red*, respectively).

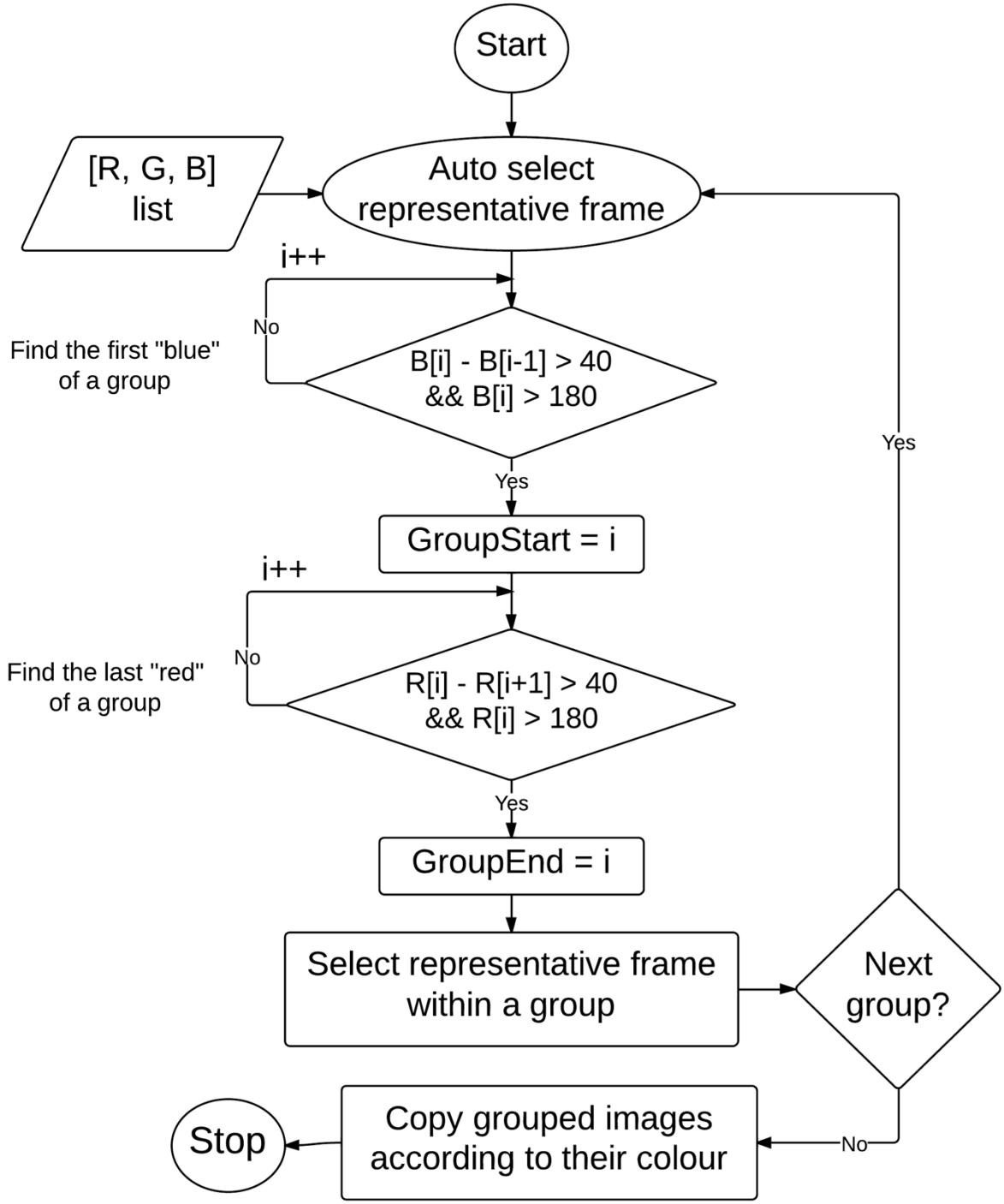

Figure S3. Flow chart of the algorithm used for data processing (part 1): grouping images from the same time points and selecting representative frames. This algorithm was executed after executing the algorithm illustrated in **Fig. S1**, and before executing the algorithm illustrated in **Fig. S4**.

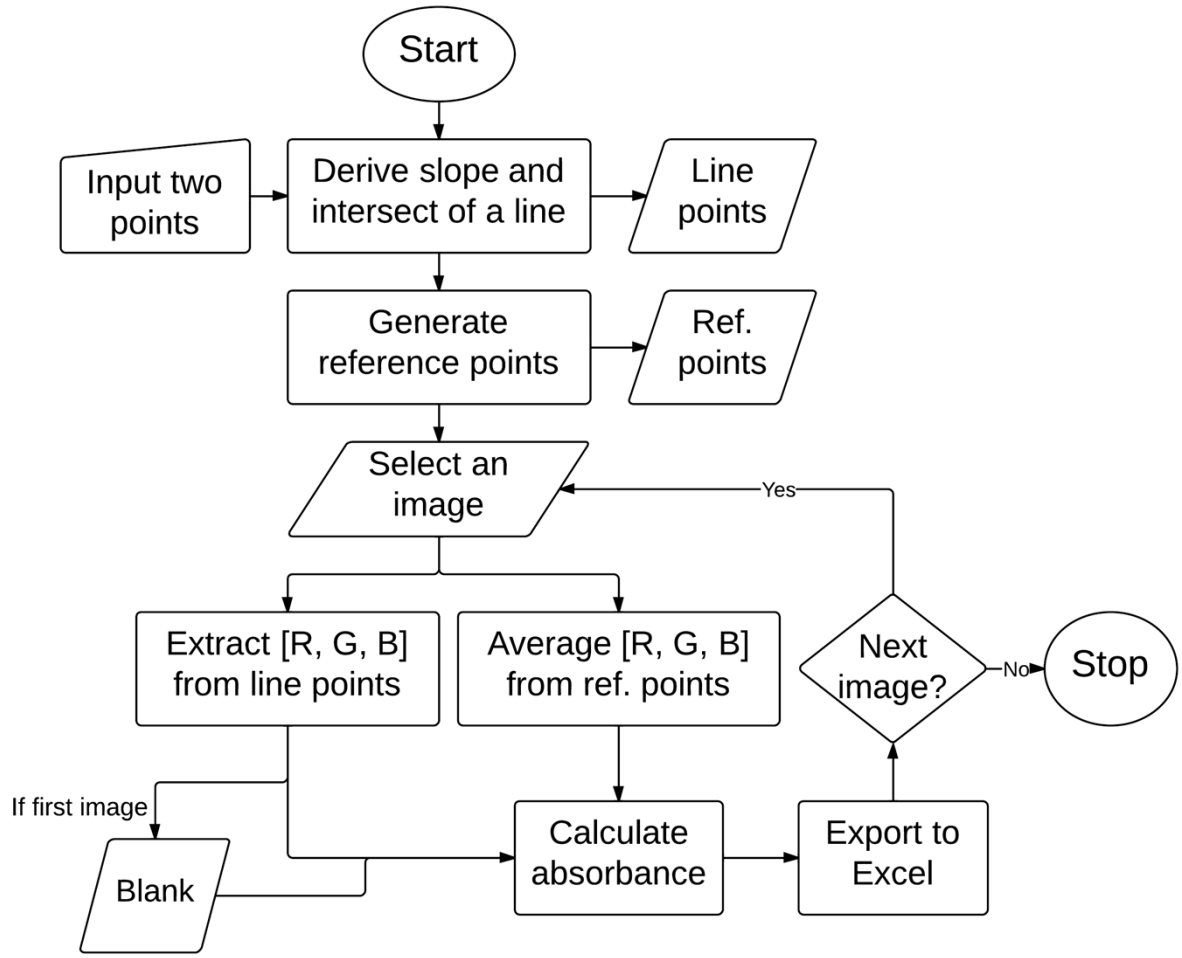

Figure S4. Flow chart of the algorithm used for data processing (part 2): calculation of absorbances. The execution of this algorithm was preceded by the execution of the algorithm illustrated in **Fig. S3**.

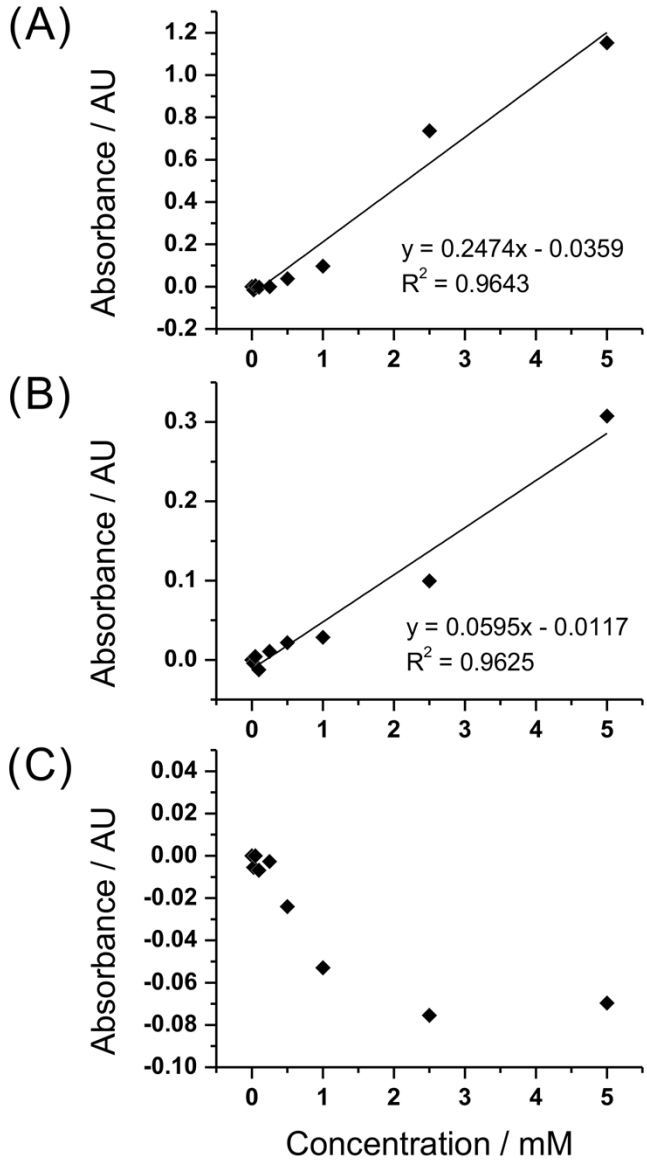

Figure S5. Calibration plots obtained using ferroin solution as standard solution. (A) Blue light (448-460 nm), (B) green light (522-548 nm), (C) red light (600-624 nm). Points refer to absorbance values calculated from summation of R, G, and B channels.

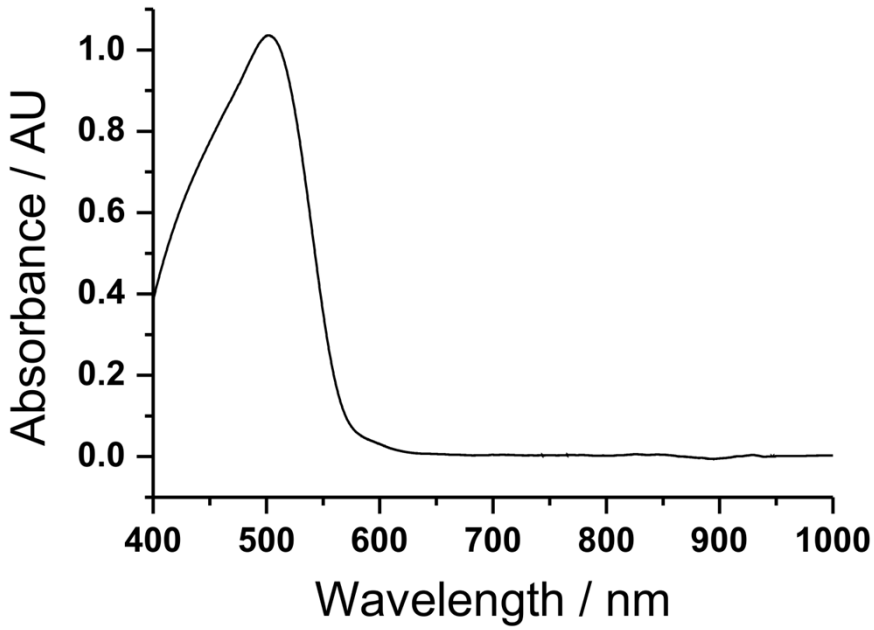

Figure S6. Visible light absorption spectrum of ferroin solution ([ferroin] = 0.33 mM) in water. The spectrum was acquired using the miniature fibre optic spectrometer (Ocean Optics, Dunedin, FL, USA). Smoothing was applied.

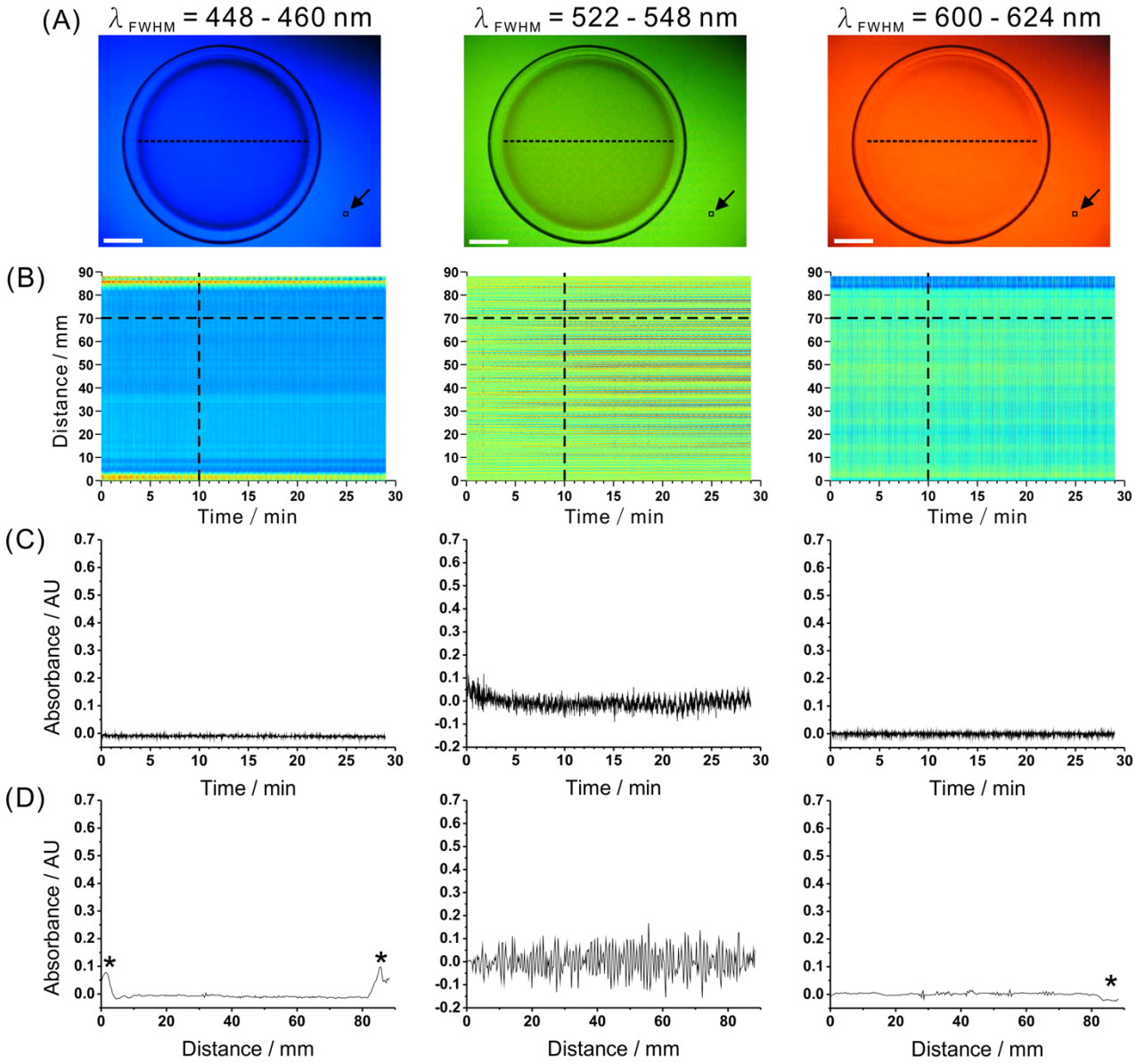

Figure S7. Blank measurement for the Belousov-Zhabotinsky reaction. (A) Real images obtained at three wavelength bands. Glass Petri dish contains the BZ reaction mixture (6 mL) without the B solution added. Scale bars: 2 cm. (B) Spatiotemporal data for a selected intersect (*cf.* dashed line in (A)). (C) Dependence of absorbance on time for a selected pixel (*cf.* horizontal dashed line in (B)). (D) Dependence of absorbance on distance for a selected time point (*cf.* vertical dashed line in (B)). Black arrow in (A) points to the reference zone (10 × 10 pixels). Asterisks (*) indicate artefacts due to the proximity of the edge.

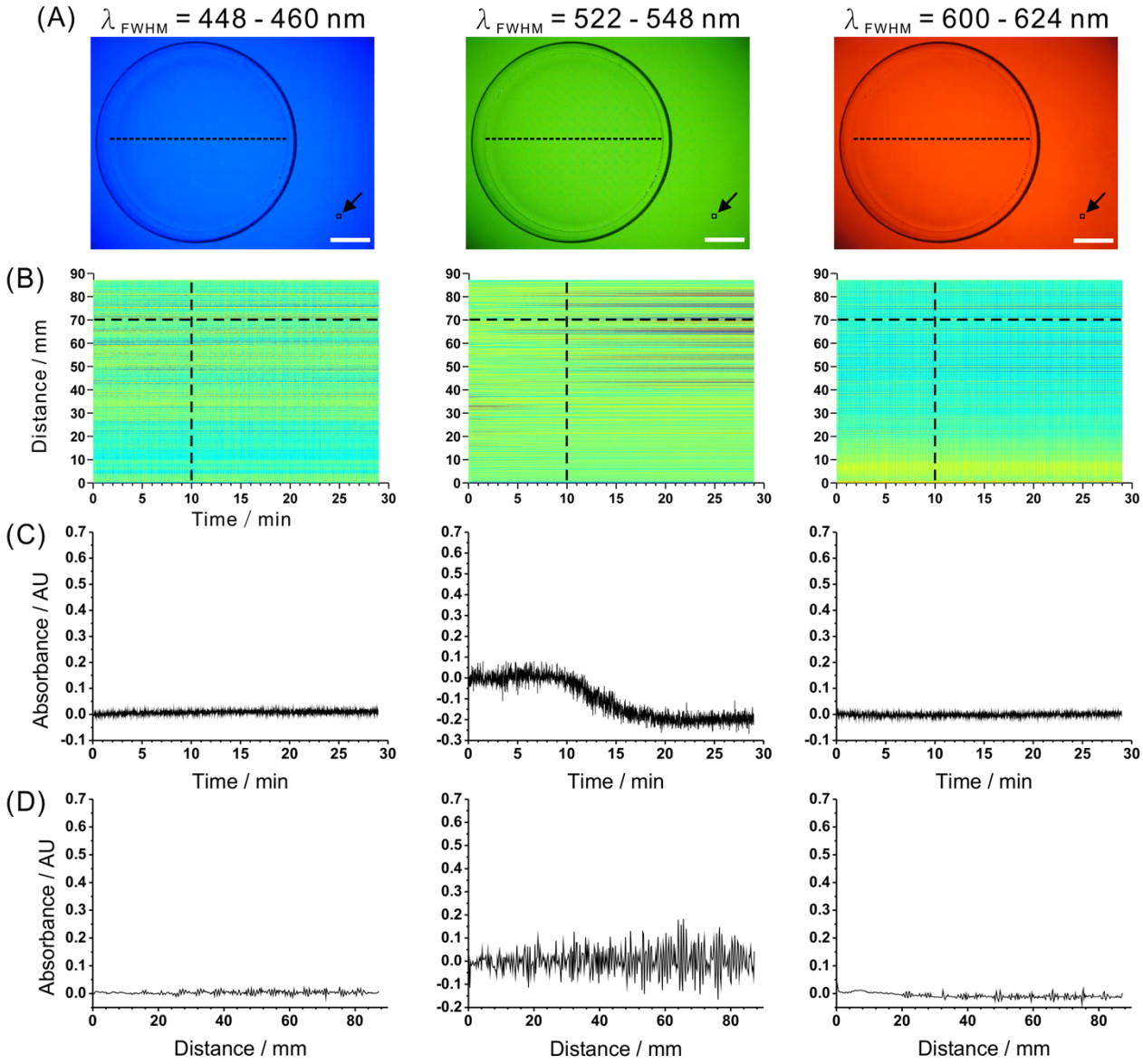

Figure S8. Blank measurement for the Old Nassau reaction. (A) Real images obtained at three wavelength bands. Glass Petri dish contains the Old Nassau reaction mixture (6 mL). Scale bars: 2 cm. (B) Spatiotemporal data for a selected intersect (*cf.* dashed line in (A)). (C) Dependence of absorbance on time for a selected pixel (*cf.* horizontal dashed line in (B)). (D) Dependence of absorbance on distance for a selected time point (*cf.* vertical dashed line in (B)). Black arrow in (A) points to the reference zone (10 × 10 pixels).