

Figure S1. Emission and transmission spectra of components in our project. (A) Emission spectrum of the cool white LED used for lighting the containers with field-caught *P. aquatica*. Cosine corrector of spectrometer was placed at the place of the containers. Total photon flux (area under curve) was 1.47×10^{14} photons \cdot cm⁻² \cdot s⁻¹. (B) Transmission spectrum of one pair of Lee 210 and Lee 211 neutral density filters (black line), the 3 mm sandblasted glass (dotted line) and the 1 mm quartz glass (grey line).

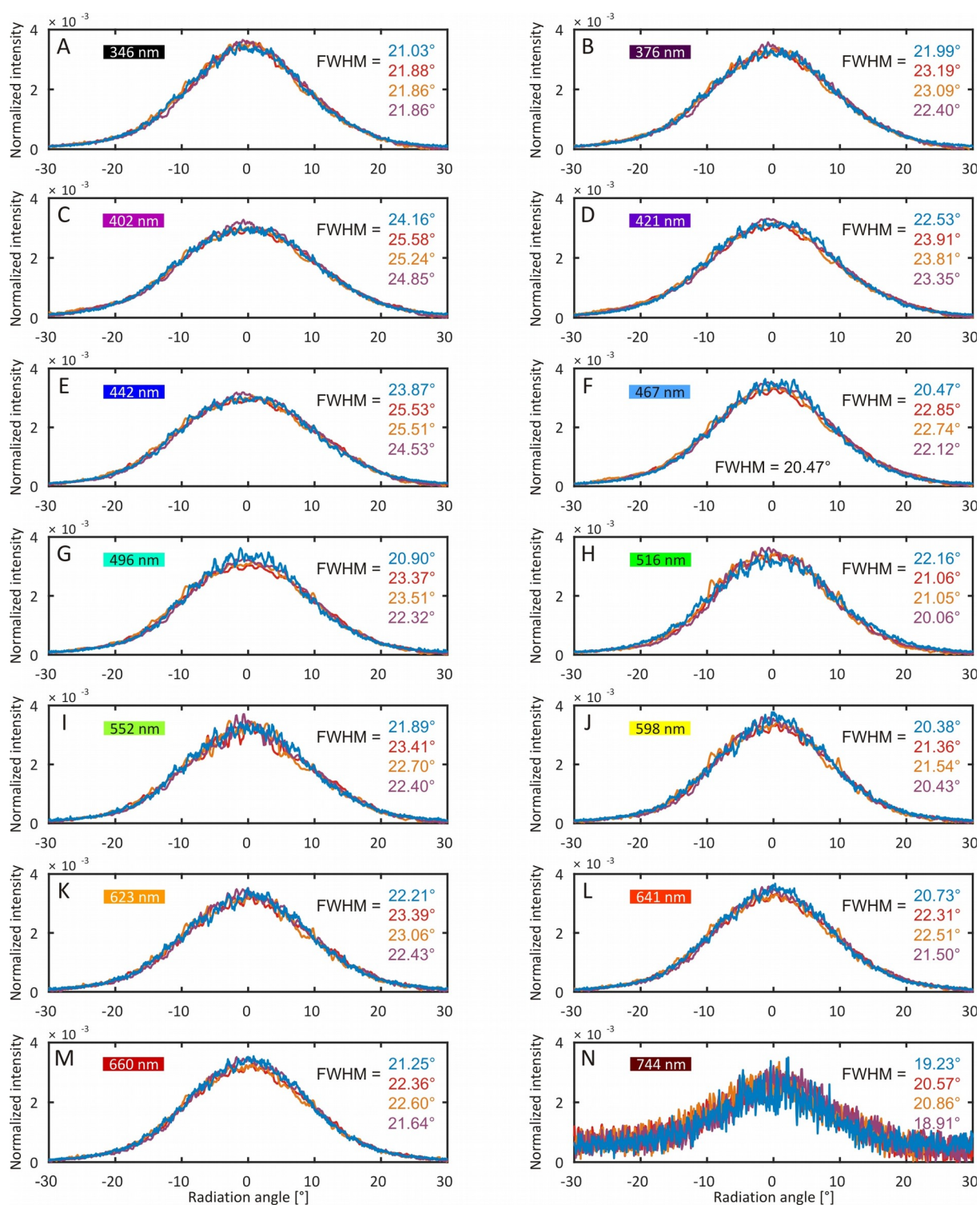
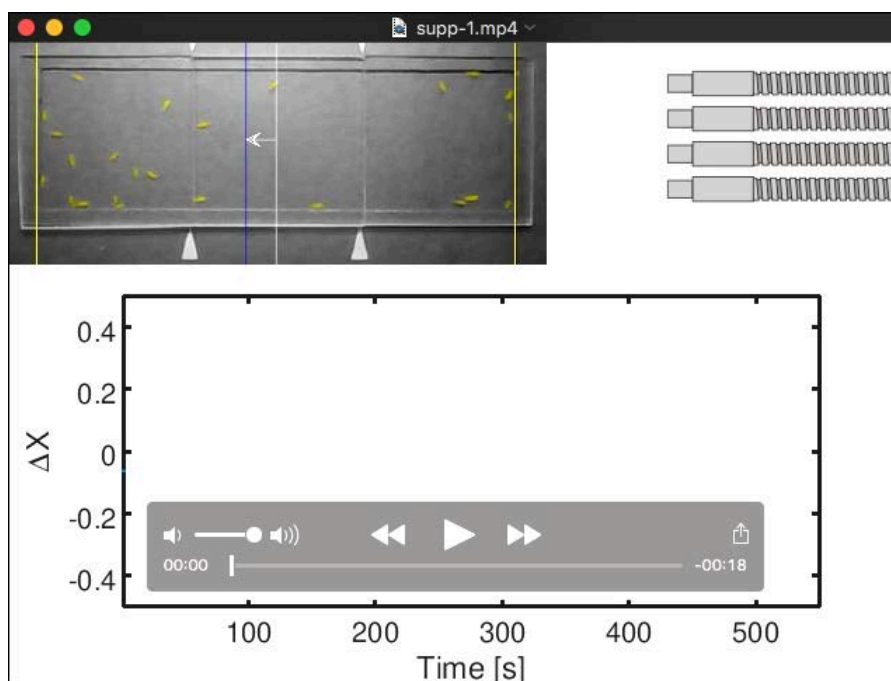
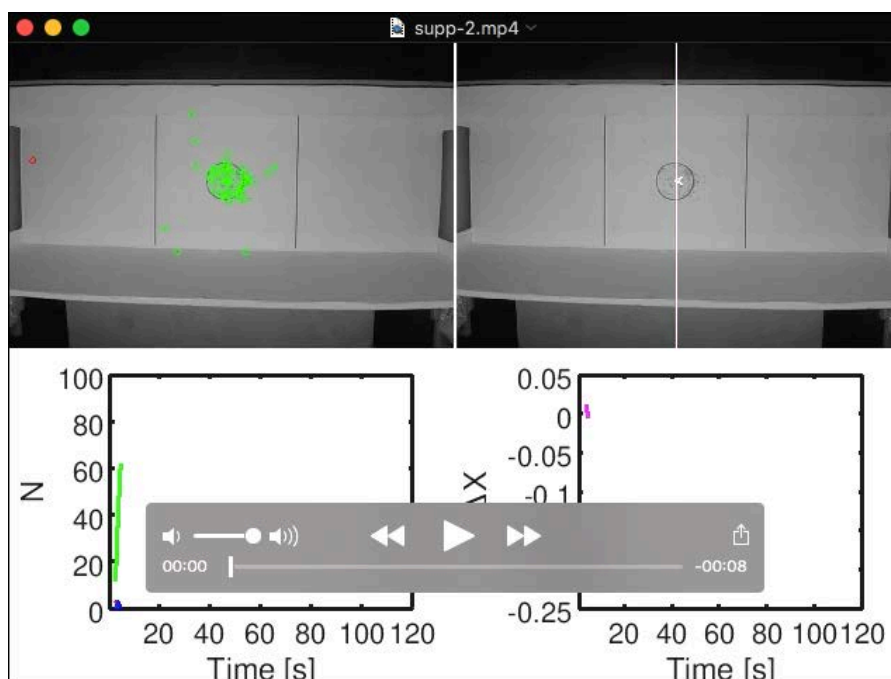


Figure S2. Normalized intensity of light exiting the light-guide outputs measured as a function of angle for all 14 wavelengths. Full-width half-maximum of fitted Gaussian curves are also displayed.



Movie 1. A short demonstration of the trials and data evaluation of experiment 1 for a $\lambda_{\text{stimulus}} = 442 \text{ nm}$ stimulus.



Movie 2. Evaluation method for the trials of experiments 2 and 3. This example shows a trial when a 100% horizontally (left) and 100% vertically (right) polarized stimulus pair was applied.