Electronic Supplementary Material (ESI) for Nanoscale.
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Supporting Information to

Selective fluorescence functionalization of dye-doped polymerized structures fabricated by Direct Laser Writing (DLW) Lithography

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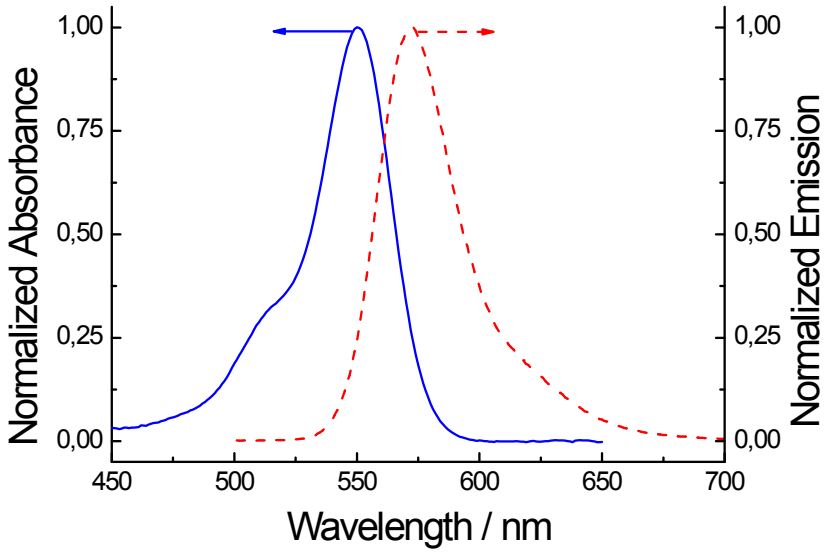

Figure S1. Normalized absorption (solid line) and emission spectra (dashed line) of ATTO 565 dissolved in PETA. λ_{exc}= 488 nm.

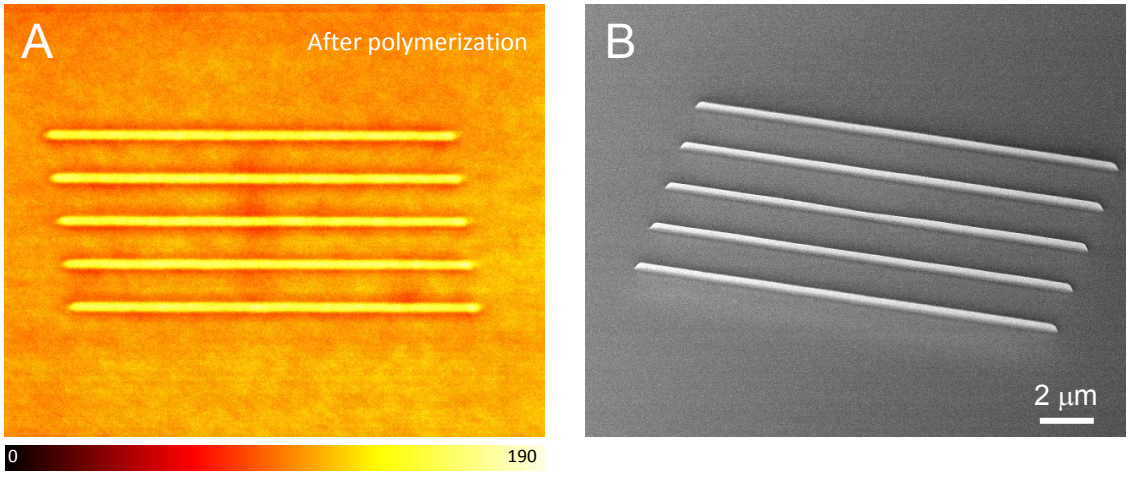

Figure S2. A) Confocal fluorescence image of five photopolymerized lines fabricated with regular DLW lithography with an ATTO 565 doped resin. B) Scanning Electron Microscopy (SEM) image of the same photopolymerized lines as in A). λ_{exc}= 532 nm

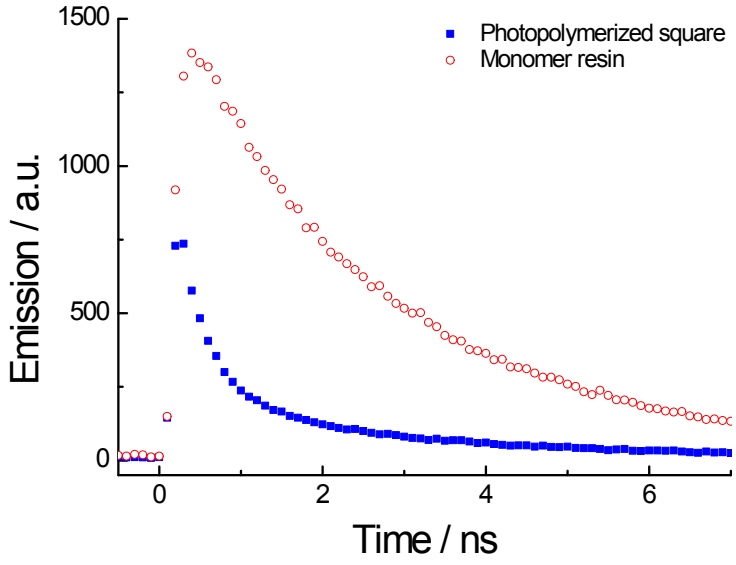

Figure S3. Nanosecond fluorescence decays (540-640 nm) measured at the monomer resin (red empty circles) or the photopolymerized square (blue filled squares) from Figure 1A. λ_{exc}= 488 nm.

The fluorescence quantum yield (Φ_{fl}) is related to the rate constants of the radiative (k_{fl}) and non-radiative (k_{nr}) deactivation pathways of the emissive state through equation (1).

$$\Phi_{fl} = \frac{k_{fl}}{k_{fl} + k_{nr}} \qquad \text{equation 1}$$

The lifetime calculated with the decay of the fluorescence signal can be expressed as a function of the radiative (k_{fl}) and non-radiative (k_{nr}) rate constants with the equation (2).

$$\tau_{S1} = \frac{1}{k_{fl} + k_{nr}} \qquad \text{equation 2}$$

Substituting equation (2) in (1) gives $\Phi_{fl} = \tau_{S1} k_{fl}$.

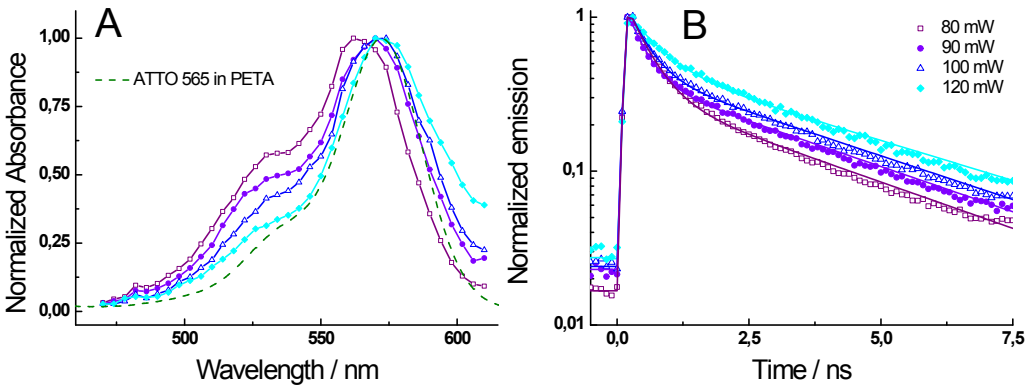

Figure S4. Normalized excitation spectra (A) and time profiles of the fluorescence signal (B) of ATTO 565 embedded in polymerized squares with different relative ratio of H-aggregate/monomer. An increasing power of the fabricating beam was used: 80 (empty squares), 90 (filled circles), 100 (empty triangles) and 120 (filled diamond) mW. The steady-state absorption spectrum of ATTO 565 dissolved in PETA is shown in (A) for comparison (green dashed line). The solid lines in (B) correspond to the best bi-exponential fits of the experimental data. λ_{exc} = 488 nm.