

Supplementary Materials: An Optical Power Limiting and Ultrafast Photophysics Investigation of a Series of Multi-Branched Heavy Atom Substituted Fluorene Molecules

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Wavelength Scanned Optical Power Limiting (OPL) Measurement, Underlying Data

Table S1. $1/M1$ is the calibration factor of the reference detector from when placing the signal detector at the sample position and doing a linear fit to M1. $M1/M2$ is the calibration factor of the signal detector from when placing the signal detector at its ordinary position and doing a linear fit to M2. The beam width is the 10%–90% horizontal beam diameter in micrometers.

| Wavelength | M1 | M2 | Beam Width [μm] |
|------------|---------|---------|------------------------------|
| 450 | 1, 11 | 1, 009 | 7, 70 |
| 475 | 0, 76 | 0, 6809 | 8, 10 |
| 490 | 1, 341 | 1, 218 | 8, 68 |
| 525 | 0, 6417 | 0, 5864 | 8, 67 |
| 560 | 1, 552 | 1, 475 | 9, 98 |
| 575 | 0, 6421 | 0, 59 | 8, 95 |
| 590 | 1, 091 | 0, 9378 | 9, 29 |
| 625 | 1, 394 | 1, 312 | 10, 40 |
| 650 | 0, 9002 | 0, 8413 | 9, 82 |
| 660 | 1, 527 | 1, 459 | 9, 94 |
| 700 | 3, 619 | 3, 324 | 9, 24 |

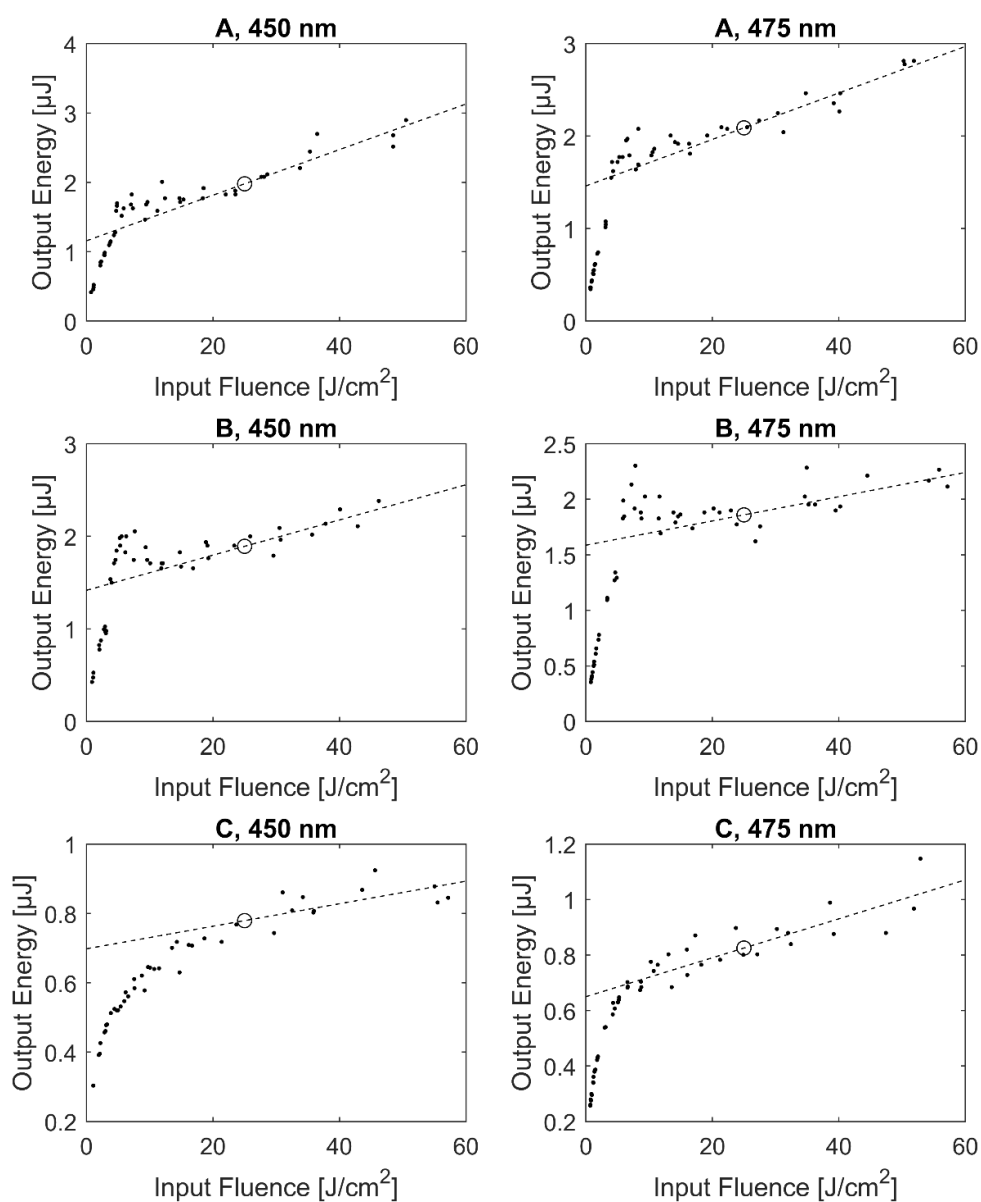


Figure S1. OPL curves for molecule "A", "B" and "C" at 450 and 475 nm. The dashed lines are linear fits for the data points above 20 J/cm^2 . The circles the values used in Figure 4.

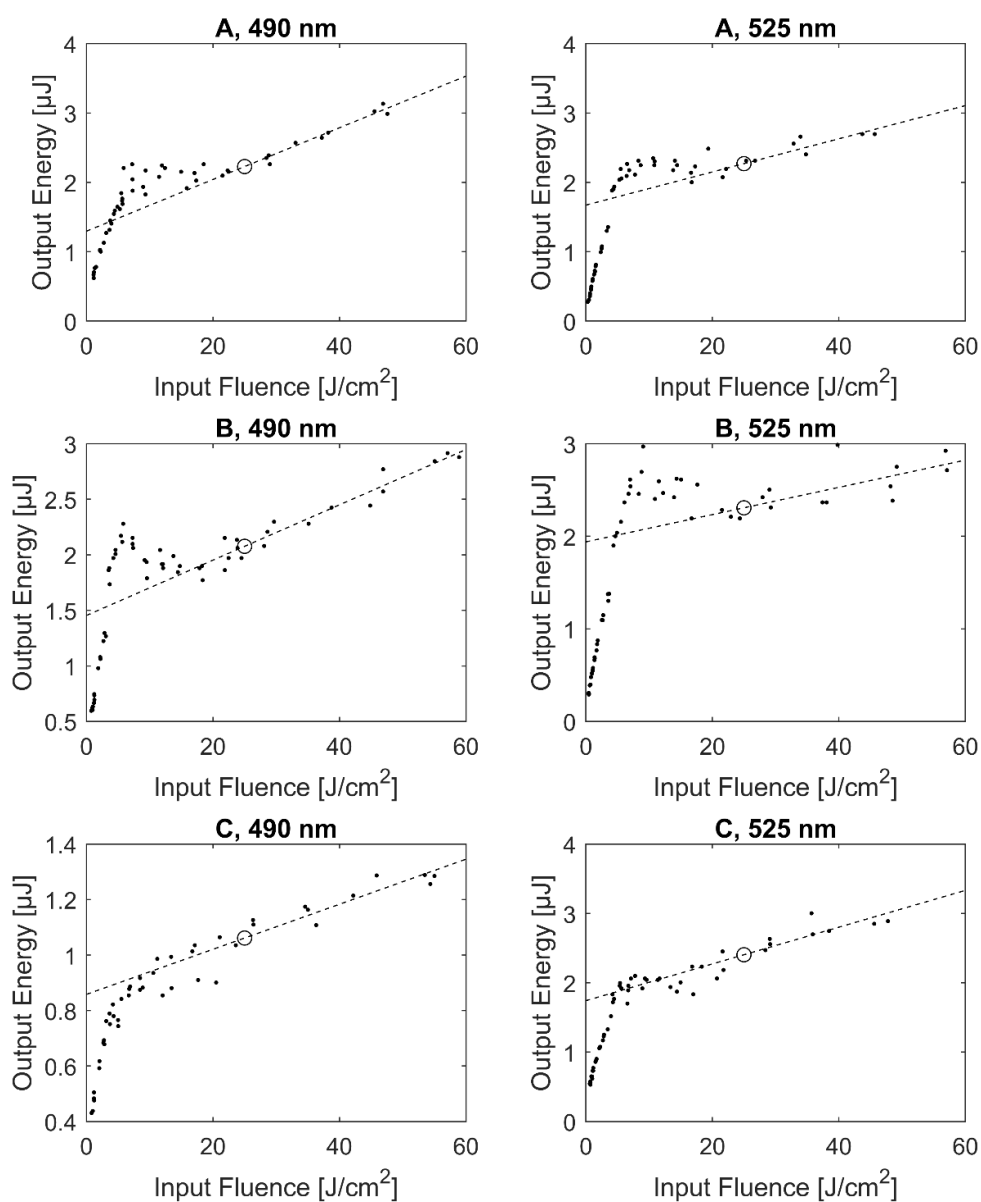


Figure S2. OPL curves for molecule “A”, “B” and “C” at 490 and 525 nm. The dashed lines are linear fits for the data points above 20 J/cm². The circles the values used in Figure 4.

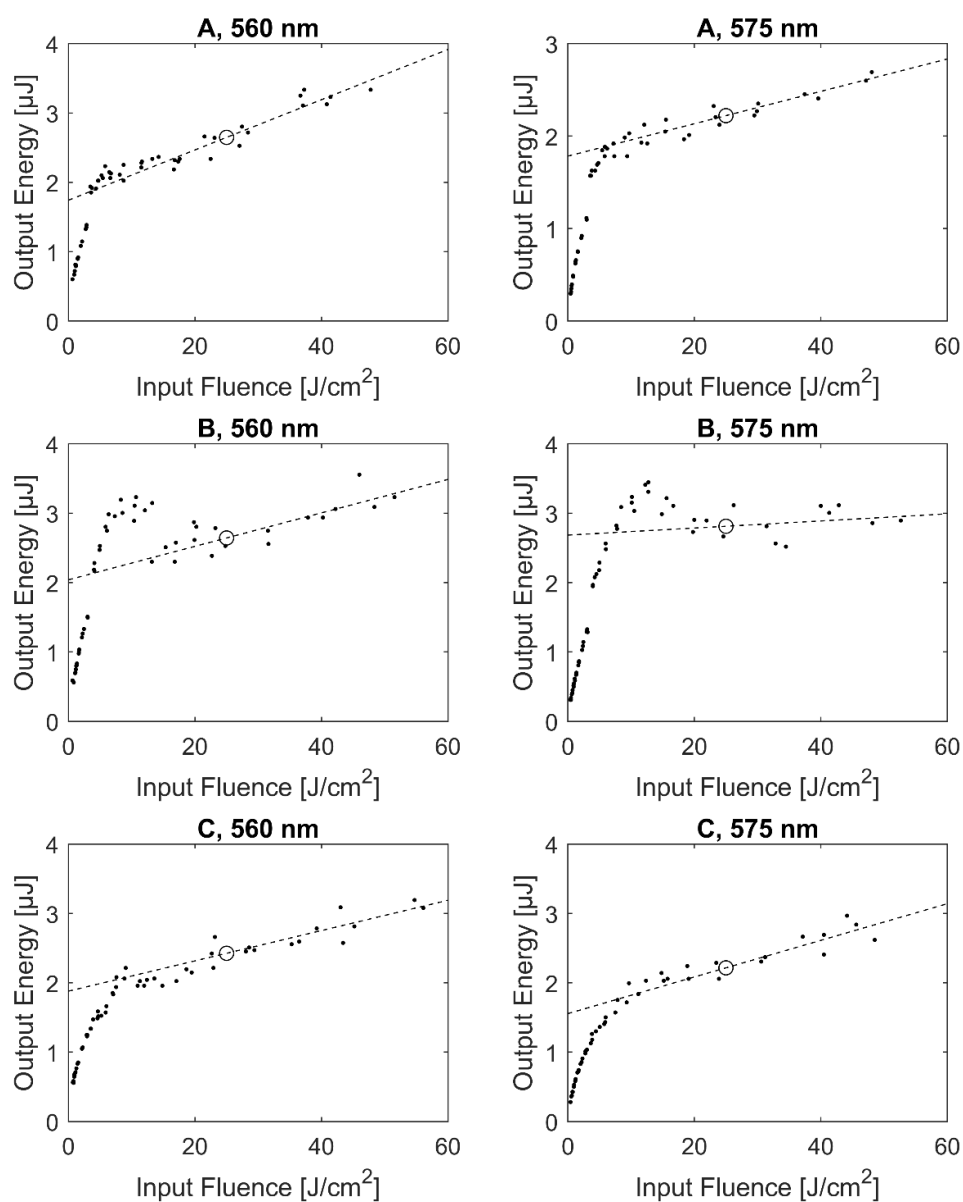


Figure S3. OPL curves for molecule "A", "B" and "C" at 560 and 575 nm. The dashed lines are linear fits for the data points above 20 J/cm². The circles the values used in Figure 4.

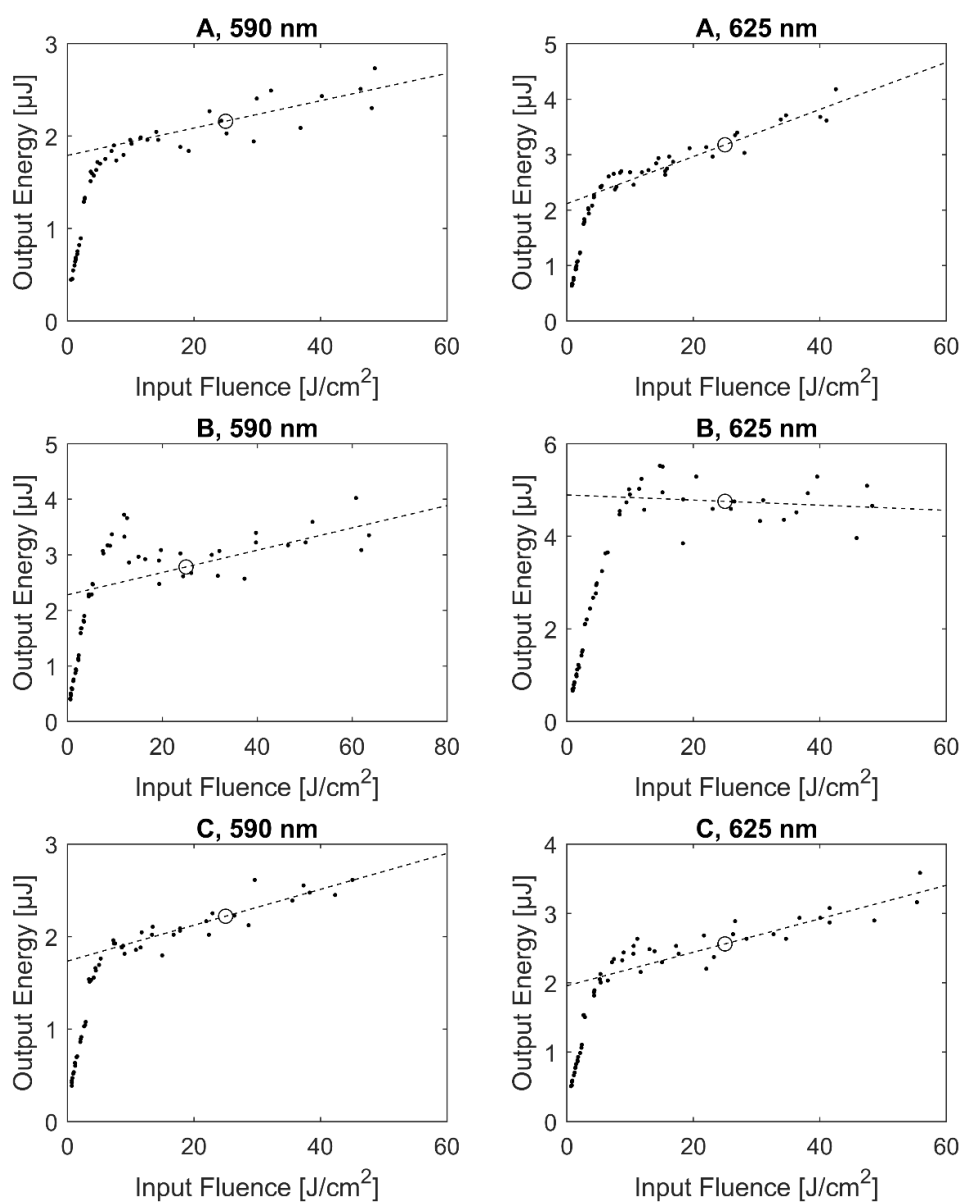


Figure S4. OPL curves for molecule “A”, “B” and “C” at 590 and 625 nm. The dashed lines are linear fits for the data points above 20 J/cm². The circles the values used in Figure 4.

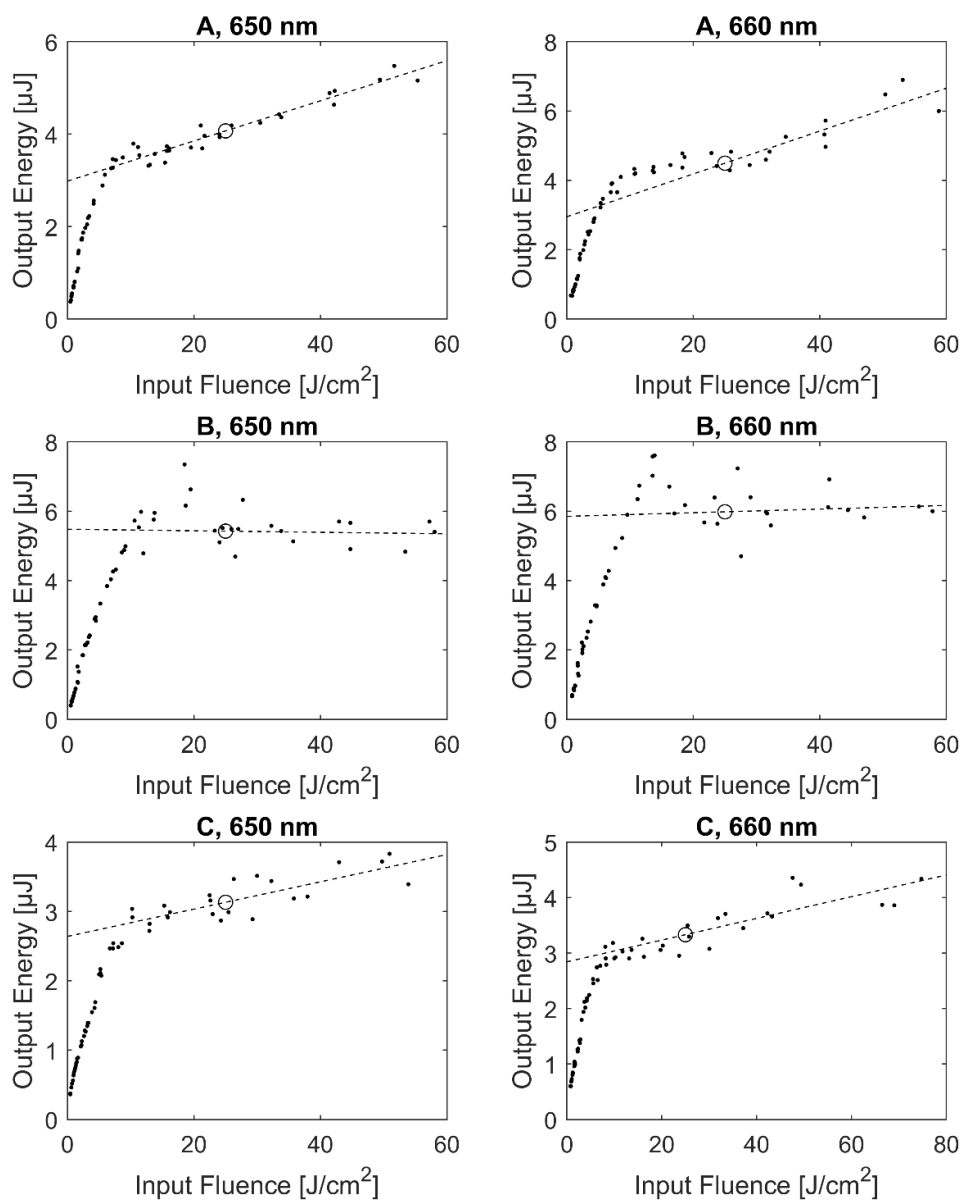


Figure S5. OPL curves for molecule "A", "B" and "C" at 650 and 660 nm. The dashed lines are linear fits for the data points above 20 J/cm². The circles the values used in Figure 4.

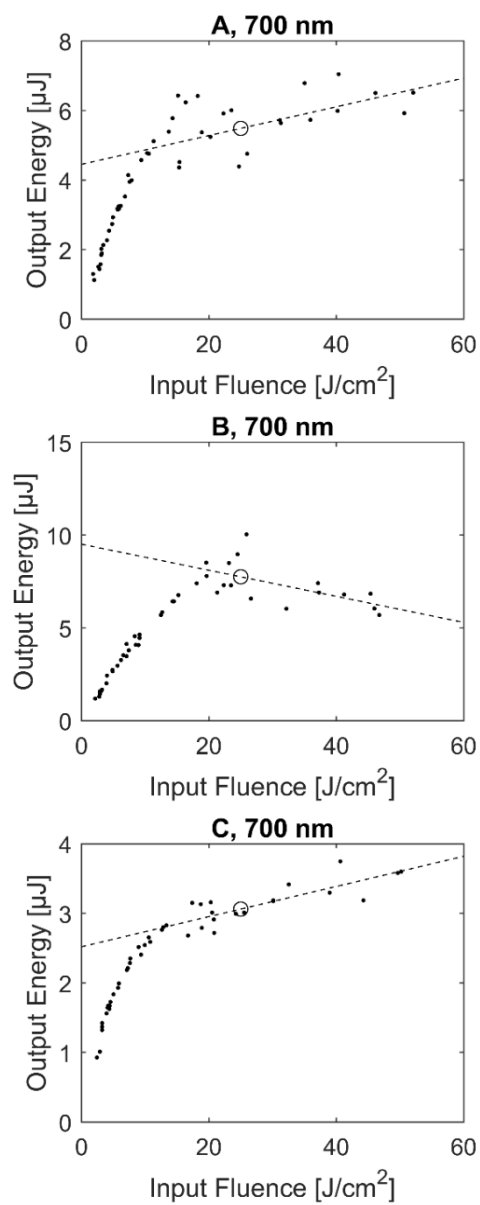


Figure S6. OPL curves for molecule “A”, “B” and “C” at 700 nm. The dashed lines are linear fits for the data points above 20 J/cm^2 . The circles the values used in Figure 4.

Ultra-Fast Transient Absorption Measurements

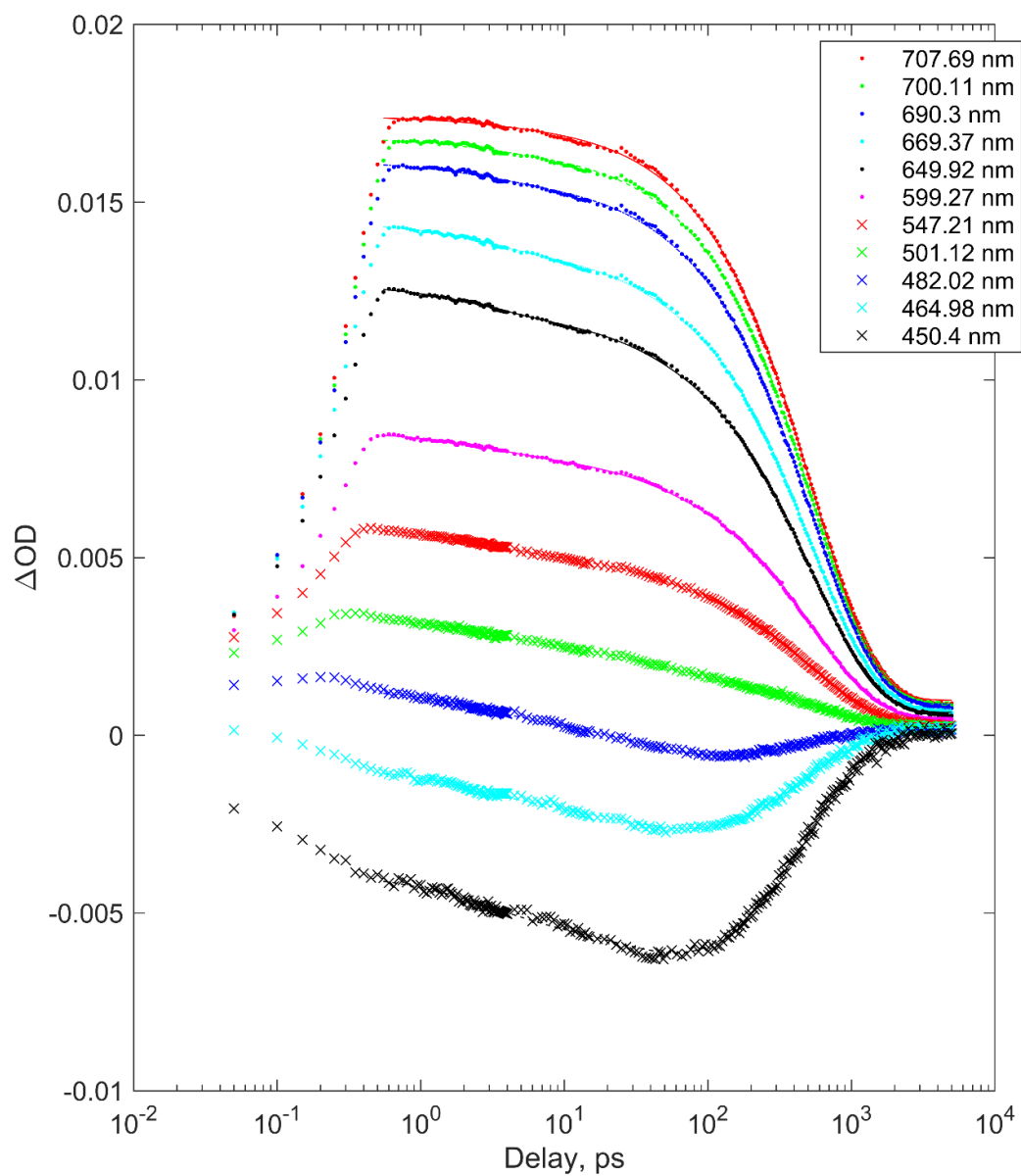


Figure S7. Transient absorption spectrum and fits for molecule "A" at selected wavelengths.

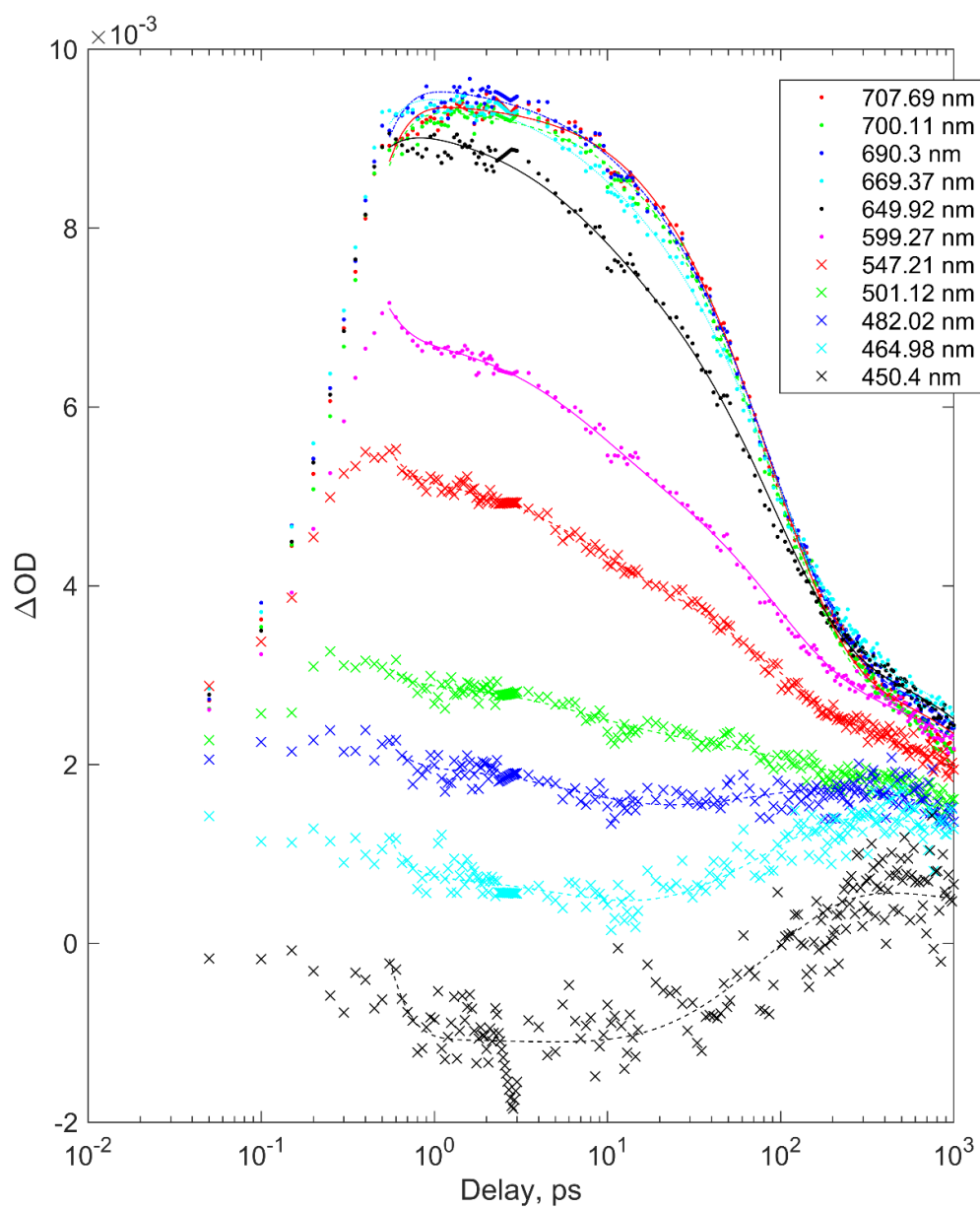


Figure S8. Transient absorption spectrum and fits for molecule "B" at selected wavelengths.

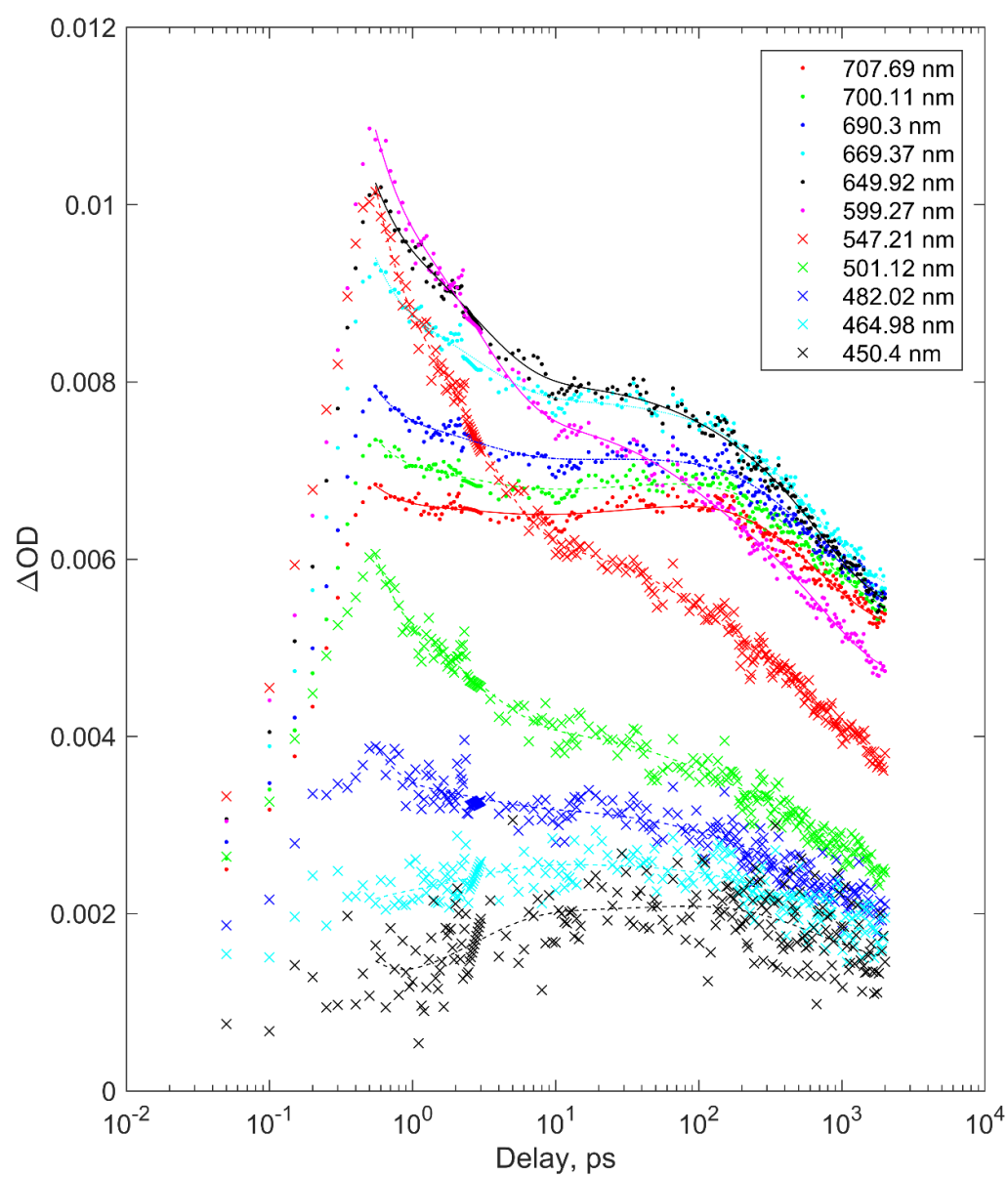


Figure S9. Transient absorption spectrum and fits for molecule "C" at selected wavelengths.