Electronic Supporting Information ESI) for

Third-order Nonlinear Optical Properties of Highly Electron Deficient, Nonplanar Push-Pull Porphyrins: *β*-Nitro-Hexa-Substituted Porphyrins Bearing Bromo, Phenyl, and Phenylethynyl groups

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Table of contents

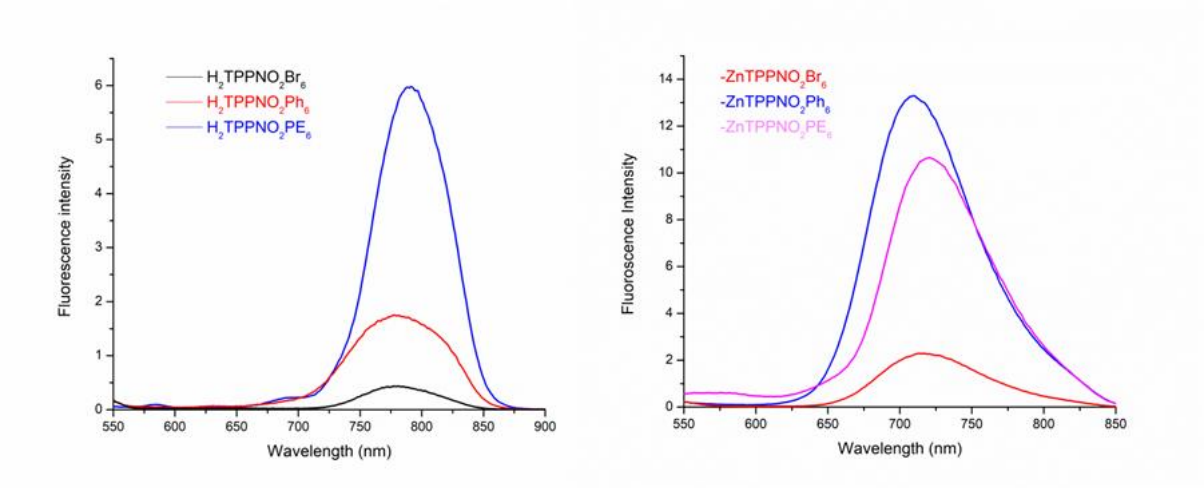

Figure S1. The emission profile of $H_2TPP(NO_2)X_6$ [X = Br, Ph, PE] (right) and $ZnTPP(NO_2)X_6$ [X = Br, Ph, PE] (left) in toluene at 298 K**.**

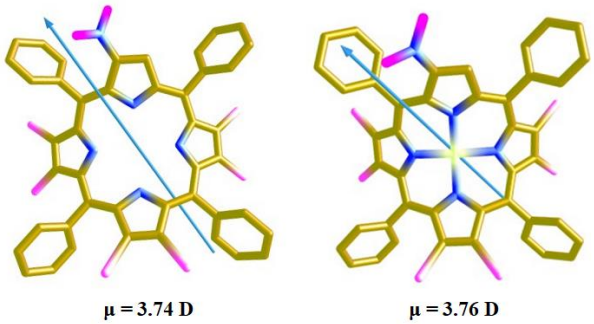

Figure S2. The dipole moment of $H_2TPP(NO_2)Br_6$ (right) and $CuTPP(NO_2)Br_6$ (left) procured from DFT calculations**.**

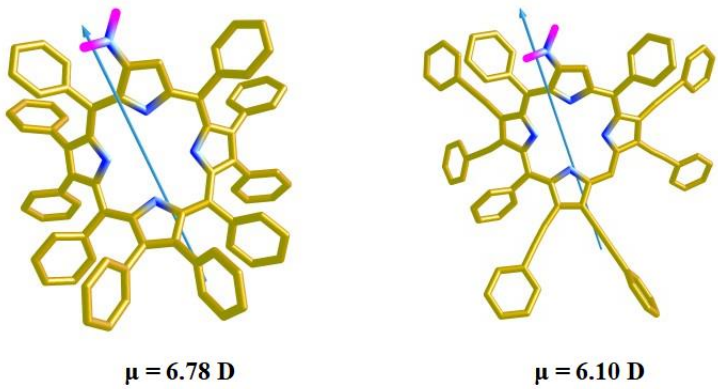

Figure S3. The dipole moment of $H_2TPP(NO_2)Ph_6$ (right) and $H_2TPP(NO_2)PE_6$ (left) procured from DFT calculations**.**

Femtosecond Z-scan experimental details:

A Ti: sapphire amplifier (Libra, M/s Coherent) with a repetition rate of 1 kHz was used by us to produce ~50 fs pulses at a wavelength of 800 nm, which was used for Z-scan measurements. The amplifier uses a nanosecond Nd: YAG laser operating at 532 nm as the pump. The output from the laser system was ~50 fs pulses delivered with ~4 mJ energy, centered at 800 nm and a bandwidth of ~28 nm with a repetition rate of 1 kHz. A broadband oscillator (a repetition rate of 80 MHz, ~30 fs at 800 nm with a bandwidth of ~35 nm) is placed to seed for the amplifier. The samples were put on a linear translation stage, and a photodiode (Silicon PD) was used to capture the transmission. A lock-in amplifier received the photodiode's output. One LabVIEW programme that was particularly built was used to control every instrument. Figure 4 below shows the experimental design for the Z-scan.

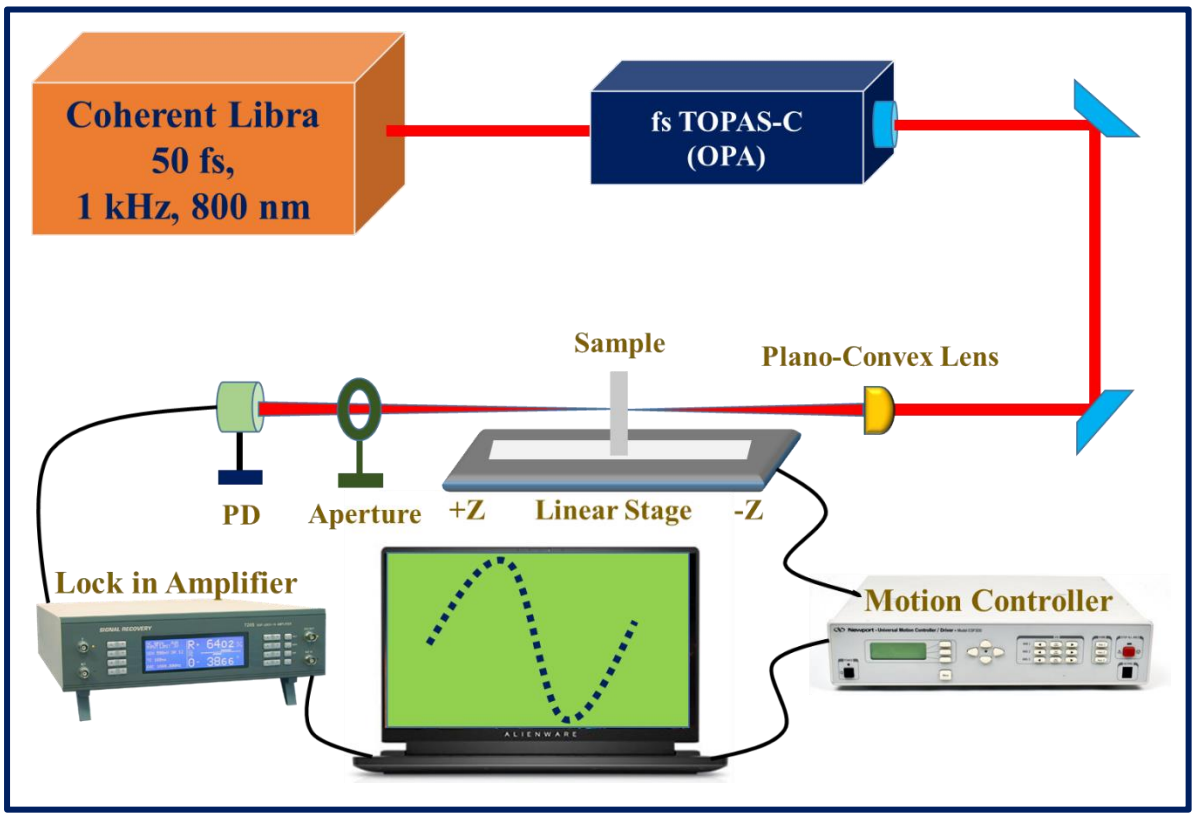

Figure S4. Schematic of the fs Z-scan experimental setup.