Supporting Information for:

Synthesis of star-shaped monodisperse oligo(9,9-di-n-octylfluorene-2,7-vinylene)s functionalized truxenes with two-photon absorption properties

Huipeng Zhou, Xin Zhao, Tianhao, Huang, Ran Lu, Hanzhuang Zhang, Xiaohui Qi, Pengchong Xue, Xingliang Liu, and Xiaofei Zhang

\textit{a} State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, P. R. China.

\textit{b} College of Physics, Jilin University, Changchun 130012, P. R. China

Fax: +86-431-88923907; Tel: +86-431-88499179

E-Mail: luran@mail.jlu.edu.cn
**Fig. S1** Cyclic voltammetry diagrams of **Tr-OFVn** in anhydrous CH$_2$Cl$_2$ with 0.1 M Bu$_4$NBF$_4$ as electrolyte at a scan rate of 100 mV·s$^{-1}$.

**Fig. S2** Normalized UV-vis absorption (a) and fluorescence (b, $\lambda_{ex} = 390$ nm) spectra of **Tr-OFV3** in THF ($2.0 \times 10^{-6}$ M), in spin-coated film and in the thermally annealed film; UV-vis absorption (c) and fluorescence spectra (d, $\lambda_{ex} = 365$ nm) of **Tr-OFVn** in the thermally annealed films.
Fig. S3 Two-photon-induced fluorescence spectra ($\lambda_{ex} = 710$ nm) of Tr-OFVn in toluene ($5.0 \times 10^{-5}$ M).

Fig. S4 Normalized one-photon absorption (black), single-photon excitation fluorescence spectra (blue, $\lambda_{ex} = 365$ nm) and two-photon excitation spectra (red) for Tr-OFV1 (a), Tr-OFV2 (b) and Tr-OFV4 (c) in toluene ($5.0 \times 10^{-5}$ M). The two-photon spectra are plotted against $\lambda/2$ (twice the photon energy).
Fig. S5 (a) The two-photon excitation spectra of E-OFVn (n = 2, 3, 4) in toluene (1.5 \times 10^{-4} \text{ M}); (b) The two-photon excitation spectra of E-OFV4 (1.5 \times 10^{-4} \text{ M}) and Tr-OFV4 (5.0 \times 10^{-5} \text{ M}) in toluene. The max two-photon cross sections were 260 GM, 215 GM and 597 GM for E-OFV2, E-OFV3 and E-OFV4, respectively.
Fig. S6 $^1$H-NMR (500 MHz) spectrum of compound E-OFV1.

Fig. S7 MALDI/TOF MS spectrum of E-OPV1.
Fig. S8 $^1$H-NMR (500 MHz) spectrum of compound 4.

Fig. S9 MALDI/TOF MS spectrum of compound 4.
**Fig. S10** $^1$H-NMR (500 MHz) spectrum of compound E-OFV2.

**Fig. S11** MALDI/TOF MS spectrum of E-OFV2.
**Fig. S12** $^1$H-NMR (500 MHz) spectrum of compound 5.

**Fig. S13** MALDI/TOF MS spectrum of 5.
Fig. S14 $^1$H-NMR (500 MHz) spectrum of compound E-OFV3.

Fig. S15 MALDI/TOF MS spectrum of E-OFV3.
Fig. S16 $^1$H-NMR (500 MHz) spectrum of compound 6.

Fig. S17 MALDI/TOF MS spectrum of 6.
Fig. S18 $^1$H-NMR (500 MHz) spectrum of compound E-OFV4.

Fig. S19 MALDI/TOF MS spectrum of E-OFV4.
Fig. S20 $^1$H-NMR (500 MHz) spectra of compound 8.
Fig. S21 MALDI/TOF MS spectrum of compound 8.
Fig. S22 $^1$H-NMR (500 MHz) spectrum of compound 9.
Fig. S23 $^1$H-NMR (500 MHz) spectra of Tr-OFV1.
Fig. S24 $^{13}$C NMR (125 MHz) spectrum of Tr-OFV1.

Fig. S25 MALDI/TOF MS spectrum of Tr-OFV1.
Fig. S26 $^1$H-NMR (500 MHz) spectrum of Tr-OFV2.
Fig. S27 $^{13}$C-NMR (125 MHz) spectrum of Tr-OFV2.

Fig. S28 MALDI/TOF MS spectrum of Tr-OFV2.
Fig. S29 $^1$H-NMR (500 MHz) spectra of Tr-OFV3.
Fig. S30 $^{13}$C-NMR (125 MHz) spectrum of Tr-OFV3.

Fig. S31 MALDI/TOF MS spectrum of Tr-OFV3.
Fig. S32 $^1$H-NMR (500 MHz) spectra of Tr-OFV4.
**Fig. S33** $^{13}$C-NMR (125 MHz) spectrum of compound Tr-OFV4.

**Fig. S34** MALDI/TOF MS spectrum of Tr-OFV4.