Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supplementary Information

Laser assisted self-assembly of diphenylalanine: Emergence of robust waveguiding properties and Fano resonances

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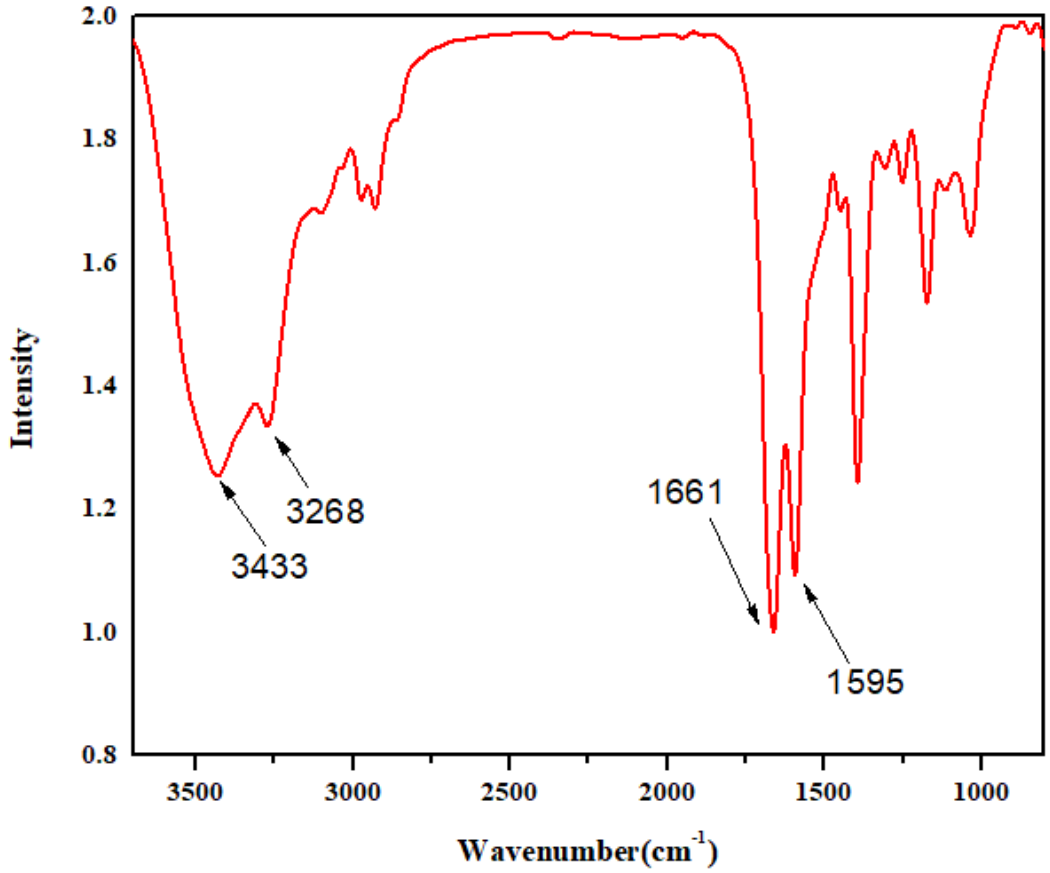
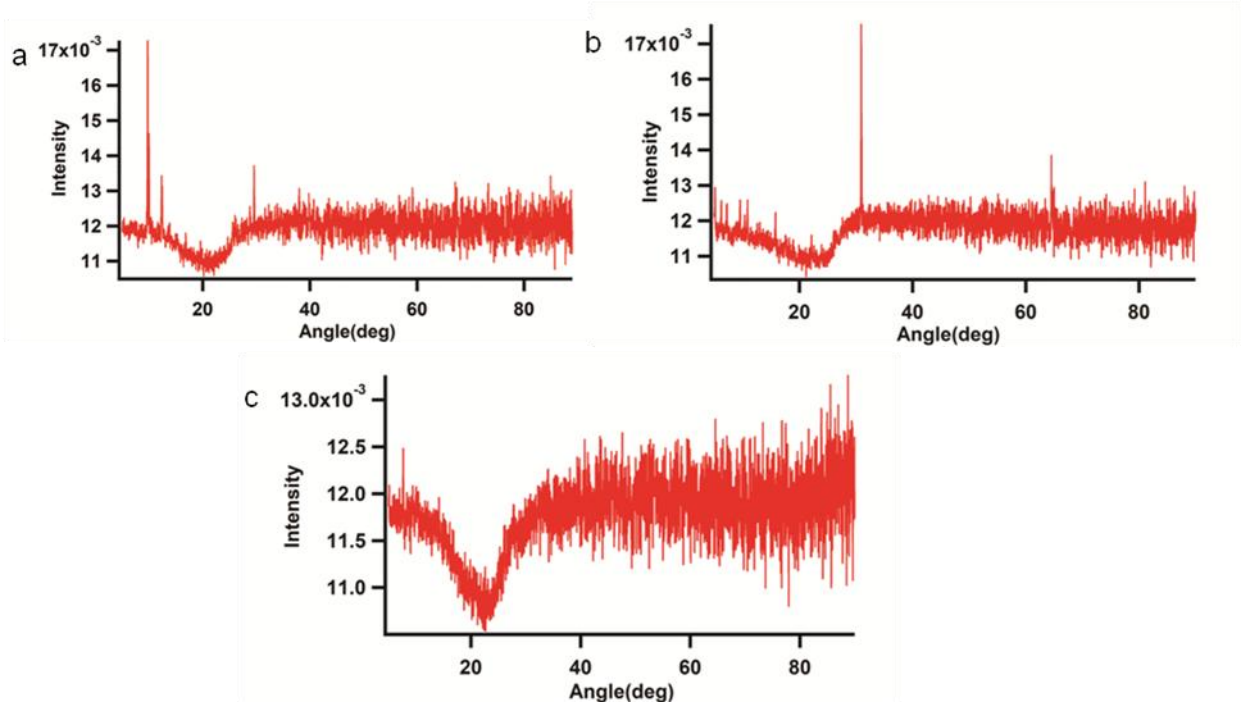
Table of contents

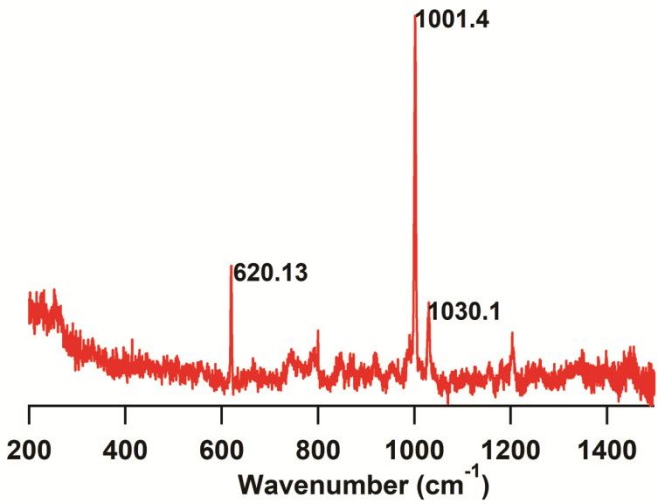
ESI Figure S1	2	Scheme 1	5
ESI Figure S2	3	Figure S3	6
ESI Figure S3	3	Figure S4	6
ESI Figure S4	4	Figure S5	7



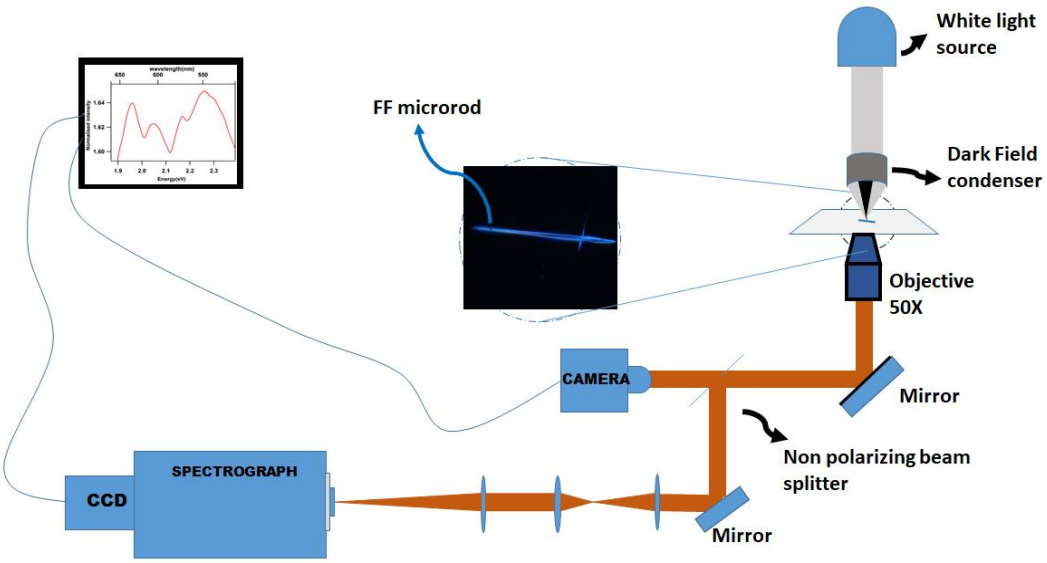
ESI **Figure S1:** FT-IR spectra of **Boc-Phe-Phe-OH (FF) 1.**



ESI **Figure S2:** PXRD pattern of (a) **SOM trail** (peaks at 9.76º, 12.36º, 29.6º), (b) **FF** micro-rods (peaks at 30.94º, 64.54º) and (c) **FF** micro-ring (peaks at 7.66º).



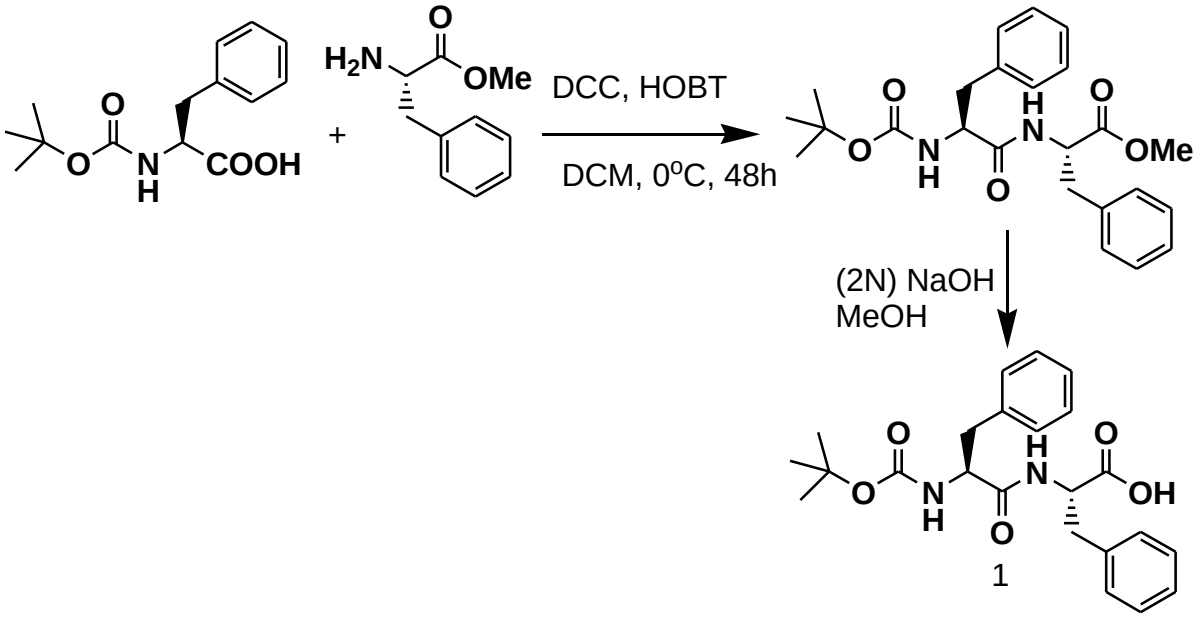
ESI **Figure S3:** Raman spectra of FF micro-rod.



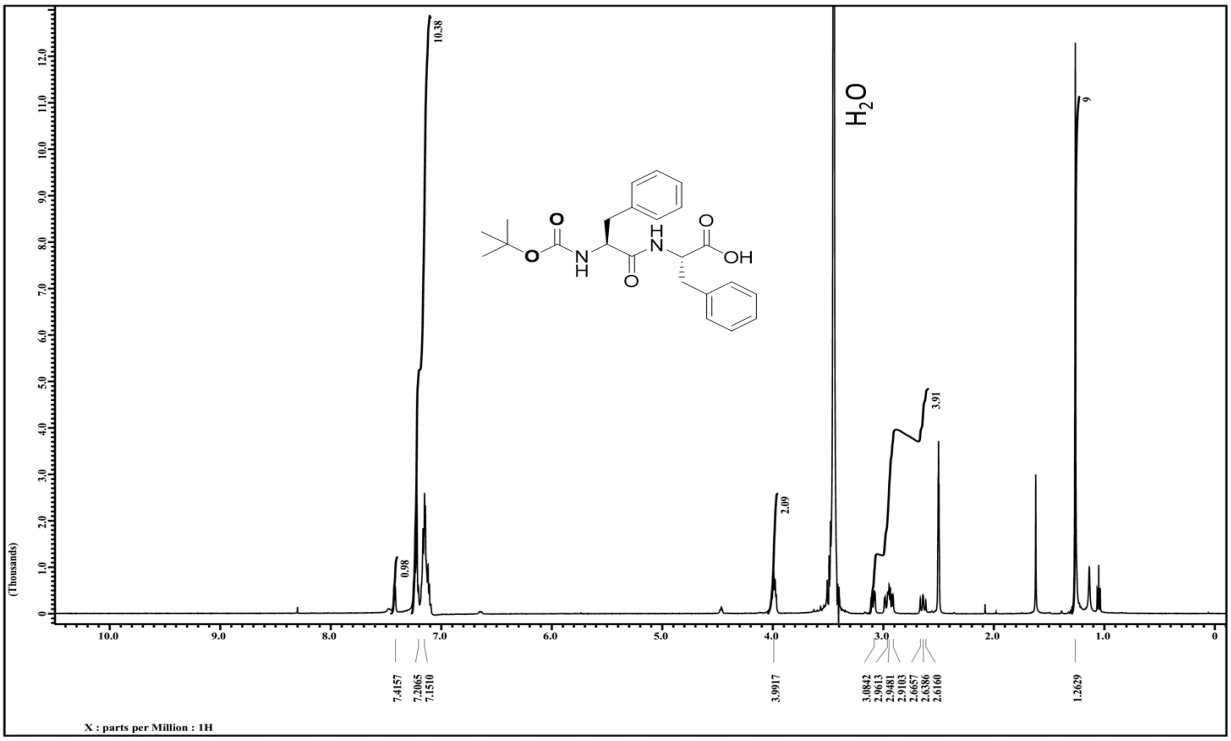
ESI **Figure S4:** Dark-field spectroscopic microscopy system: White light from the mercury lamp is focused to an annular shape at the sample (FF rod) site using a dark-field (DF) condenser. The sample-scattered light is collected by an objective (magnification 50 X) and passed through spectrally resolved signal detection system, performed by a spectrometer.

The spectral information of the FF rod can be obtained by recording the scattered light from the sample using a spectroscopic system integrated with an inverted microscope operating in the dark-field mode as shown in Figure S2. The system essentially comprises of: (i) a conventional inverted microscope (IX71, Olympus) operating in the dark-field imaging mode, and (ii) a spectrally resolved signal detection spectroscopy unit. Collimated white light from a halogen lamp (JC12 V100WHAL-L, Olympus) is used as an excitation source. The light is then focused

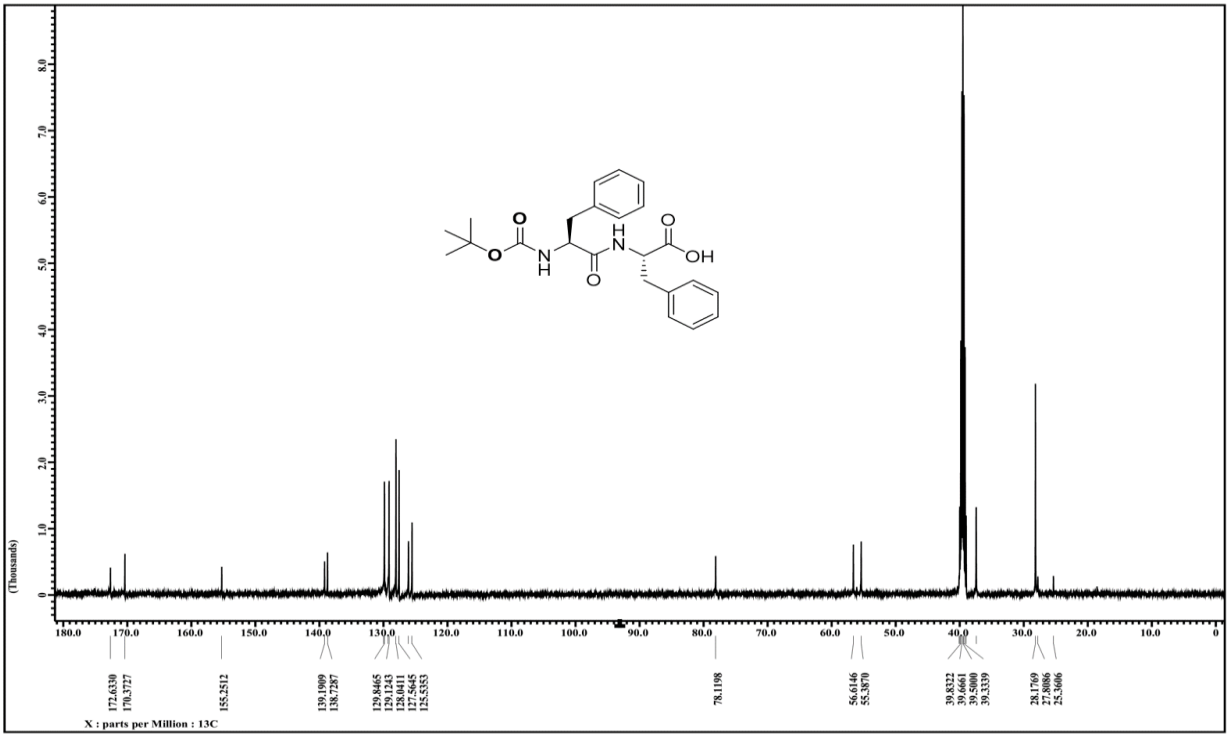
to an annular shape at the sample site using a dark-field condenser (Olympus U-DCD, NA = 0.8 - 0.92). The sample scattered light is collected by the microscope objective 50X (MPlanFL N, NA = 0.8), and then relayed to spectrometer (HR 2000, Ocean Optics,USA). The dark field arrangement facilitates detection of the sample scattered light (scattering spectra) exclusively.



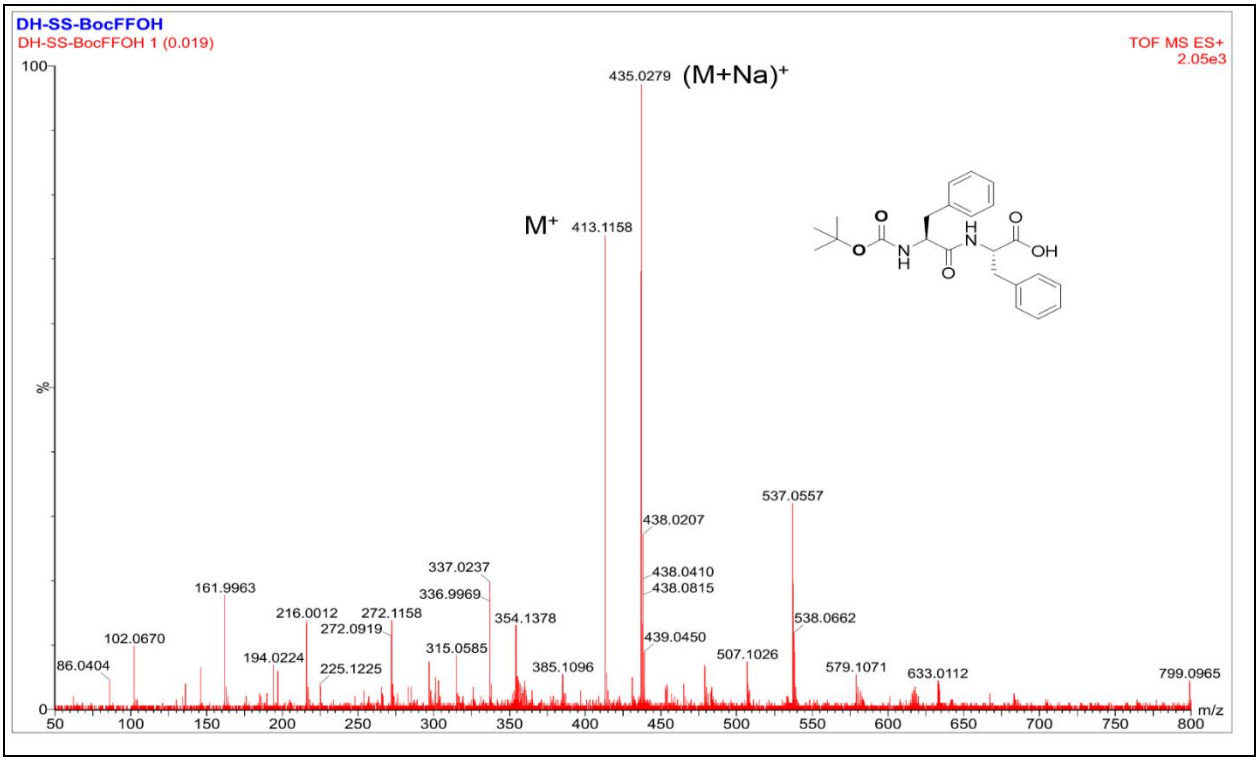
Supplementary Scheme: Schematic presentation of Synthesis of **FF.**



Supplementary Figure S3: ^{1}H NMR (400 MHz, DMSO-d_6) spectra of **FF.**



Supplementary Figure S4: ^{13}C NMR (100 MHz, DMSO-d_6) spectra of **FF.**



Supplementary Figure S5: Mass Spectra of **FF.**