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

Supporting Information

Passive optical wave guiding organic rectangular tubes: Tube cutting, controlling light propagation distance and multiple optical out-puts

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EXPERIMENTAL METHODS

Electron Microscopy Studies: Size and morphology of the submicrotubes were examined by using a Philips XL30 ESEM Scanning Electron Microscope (SEM) using a beam voltage of 20 kV.

Solid State Absorbance Studies: The solid state absorbance spectrum was recorded on a Shimadzu UV-3600 using Diffuse reflectance UV-visible (DR-UV-vis) mode. The reflectance spectrum was converted to a absorbance spectrum using Kubelka-Munk function.

Atomic Force Microscopy Studies: Atomic Force Microscopy (AFM) imaging was carried out on Witec Alpha 300 AR microscope. All calculations and image processing was carried out by a software Witec 2.06 provided by the manufacturer. The images were recorded in a AFM AC/tapping mode using noncontact silicon cantilever (NSG 10) tip purchased from NT-MDT, Moscow. The dimension of the tip is as follows: Cantilever length = 95 (±5) µm, Cantilever width 30 (±5) µm, Cantilever thickness = 1.5-2.5 µm, Resonate frequency = 140-390 kHz, Force constant = 5.5-22.5 N/m, Chip size = 3.4×1.6×0.3 mm, Reflective side = Au, Tip height = 14-16 µm, Tip curvature radius = 10 nm, and Aspect ratio 3:1-5:1.

Waveguide Guide Studies Using Confocal Raman Microscope: These studies were performed by WI-Tec alpha 300 confocal microscope coupled with 488 nm Argon laser (LASOS® Ar-Ion laser 77 series, Maximum output 400 mW). The images of tubes were captured by color eyepiece video camera in bright-field and dark field mode respectively.

Waveguide Guide Studies Using Scanning Near-field Optical Microscope: Quantification of light propagation has been carried by WiTec alpha 200 SNOM appartus equipped with PMT and

a Peltier-cooled CCD detector. SNOM has bottom fix illumination stage, in which laser light is focused on to a particular feature of sample by 5× objective with 5 μm spot size. The scattered light is collected through 100× objective (N.A=0.95). All measurements were collected in air. Images are processed by using WI-TEC 2.0 software. The experiments were performed by bottom fix illumination stage of SNOM apparatus. In bottom fix stage, the illuminating source (Laser) is fixed at the bottom of the piezo scanner. During scanning a particular feature of the sample, the scanner moves along with the illumination source. Light is focused at one end of the tube by careful manual movement of the sample and fine screw adjustment of illuminating source. The quantification of the light guided through the tube is determined by scanning the entire area of a selected tube with top microscope of the SNOM apparatus. The scattered light of selected region is collected through 100× objective (NA=0.95) and then the signal is send to the PMT counters through optical fiber. For PMT scanning 250×250 points, each point of collection time as 0.005 sec was selected. Nd:YAG laser operating at 532 nm (maximum output power is 40 mW) was used as an excitation source. The peak integration intensity profile is presented as three dimensional image.

Preparation of (Parallepipedic organic nanotubes) for SEM, and TEM and optical waveguiding studies: 0.5 mg of compound 1 was taken in a test tube and dissolved in 2 ml of THF. Then 1 mL millipore water was rapidly injected to the above solution and the test tube was left for 4 h without disturbing. Two drops of the solution was dispersed on a clean glass slide by a capillary for SEM and FESEM studies. Two drops of the solution was drop casted on a carbon coated copper grid (200 Mesh) for TEM studies. For the preparation of bend and isolated tubes, two drops of the solution was first drop casted on a clean glass slide and a PDMS mould of a commercially available compact disk (reported by Basak et al. elsewhere) was pressed on the top of the solution. After the solvent evaporation the mould was gently lifted off from the glass slide and the sample is used for waveguiding studies.

Laser Cutting of parallelepipedic nanotubes: The tapered end of a selected tube was focused with a 100× or 50× objective. The tubes were ablated with a power of > 30 mW in dark field Raman active mode by using either a 488 nm Ar^+ laser or a 532 nm Nd:YAG laser.