Supporting information

1) **Chemicals:** A31 and A70 cation exchange resins were kindly provided by Rohm et Hass. Industrial grade glycerin was kindly provided by Valagro and was collected from an industrial process of ethanolysis of vegetable oils. Chemicals were purchased to Acros and Sigma-Aldrich.

2) **Apparatus:** $^1$H and $^{13}$C NMR spectra were recorded on a Bruker Avance 300 DPX. Chemical shift are expressed in ppm relative to Me$_4$Si. IR spectra were recorded on a FT-IR Perkin Elmer (spectrum one) using ATR technology. Mass spectrometry analyses were performed either on a GC/MS Varian 1200 Triple quadripole equipped with a column Factor Four VF5MS (30m x 0.25mm x 0.25 mm) or a HPLC Alliance (Waters) coupled to a quadripole 3100 (Waters) equipped with a ESI source. Specific areas of solid catalysts were determined on a TRISTAR 3000. Pore diameters were determined from the adsorption branch of the N$_2$ isotherm using the BJH method. XRD patterns were recorded on a Bruker diffractometer D5005. The microstructures were analyzed by transmission electron microscopy (HRTEM) with a 300 eV Hitachi H9000-NA instrument. Thermogravimetric analysis (TGA) was carried out on a Shimadzu TGA-50 instrument with a program rate of 5 °C min$^{-1}$ in air. $^{29}$Si and $^{13}$C solid-state NMR spectra were recorded at 79.49 and 100.62 MHz, respectively, on a (9.4T) Bruker Avance 400P spectrometer. $^{29}$Si CP MAS NMR spectra were recorded with 4 µs $^1$H 90° pulses, 8 ms contact time, a spinning rate of 5 kHz and 4 s recycle delays. $^{13}$C CP MAS NMR spectra were recorded with 4.5 µs $^1$H 90° pulses, 2 ms contact time, a spinning rate of 7 kHz and 4 s recycle delays. Chemical shifts are quoted in ppm from TMS.
3) **General procedure for the synthesis of HMS$_{15}$-SO$_3$H (inspired from ref 13 of the manuscript)**

Typically, 3.2g (0.013mol) of $n$-hexadecylamine was dissolved at room temperature in aqueous ethanol (ethanol/water: 21/27). Then 8.3 g of tetraethoxysilane (TEOS, 0.039mol) and 1.97g of 3-mercaptopropyltrimethoxysilane (MPTMS, 0.01 mol) was simultaneously but separately added to the template mixture. The resulting solution was stirred for 20 h at room temperature and the white solid was recovered by filtration. Removal of the $n$-hexadecylamine was carried out by soxhlet extraction over boiling ethanol for 18h affording the hybrid organic-inorganic HMS-SH. Thiol groups were oxidized with 35% aqueous H$_2$O$_2$ (2g/g of solid) in a methanol/water mixture. The suspension was stirred for 24 hours at room temperature and then washed with ethanol and water. Finally, the resulting solid was suspended in 0.1M H$_2$SO$_4$ (1g of solid per 100mL of solution) and stirred for an additional 4h before filtration and extensive washing with H$_2$O. The recovered HMS-SO$_3$H was dried in an oven at 50°C ($10^{-1}$ mmHg) for 18h. The XRD patterns of HMS-SO$_3$H was similar than those reported in the literature and was typical of a worm-like structure.

4) **General procedure for the synthesis of SBA-15-SO$_3$H (inspired from ref 13 of the manuscript)**

Pluronic 123 (4g) was dissolved in 125g of aqueous HCl (1.9M) and stirred at room temperature. The solution was then heated at 40°C before addition of 7.7 g (0.0369 mol) of TEOS. After stirring for 45mn, MPTMS (0.8 g, 0.0018 mol) and 0.0369 mol of 35% H$_2$O$_2$ was added. The solution was then stirred for 24h at 40°C and aged into a teflon autoclave for an additional 24h at 100°C. The resulting solid was finally collected by filtration and thoroughly washed with water. The recovered SBA-15-SO$_3$H was dried in an oven at 50°C ($10^{-1}$ mmHg) for 18h. Then, thiol groups were oxidized with 35% aqueous H$_2$O$_2$ (2g/g of solid) in a methanol/water mixture. The suspension was stirred for 24 hours at room temperature and then washed with ethanol and water. Finally, the resulting solid was suspended in 0.1M H$_2$SO$_4$ (1g of solid per 100mL of solution) and stirred for an additional 4h before filtration and extensive washing with H$_2$O. The recovered SBA-SO$_3$H was dried in an oven at 50°C ($10^{-1}$ mmHg) for 18h. The XRD patterns of SBA-SO$_3$H was similar than those previously reported in the literature.
5) General procedure for the synthesis of Ph-PMO-SO$_3$H

Sulfonic functionalized crystal-like mesoporous benzene-silica was synthesized as follows: 1.12 g of octadecyltrimethylammonium bromide was dissolved in 30 ml of water in the presence of 0.8 ml of a 6 M NaOH solution. The mixture was stirred at 50 °C until a clear solution was obtained. After cooling to ambient temperature, a mixture of 1,4-bis(triethoxysilyl)benzene (BTEB) (0.4 g) and 3-mercaptopropyltrimethoxysilane (0.2 g MPTMS) in 50:50 molar ratio was slowly added. The resulting solution was stirred for 24 h at room temperature after which the mixture was aged under reflux at 90 °C for another 24 h. Finally, the white precipitate was filtered, washed with deionized water and dried at 60 °C overnight. The surfactant was removed by solvent extraction method using a HCl-ethanol solution. Typically 1g of as-synthesized material was suspended in a 200 ml ethanol - 3 g HCl (Panreac, 36%) solution mixture. After extraction of the surfactant, conversion to a sulfonic acid-derivatized mesoporous material was accomplished as follows: first 0.5 g of the extracted sample was wetted with 1 ml deionized water and after that with 20 wt% aqueous HNO$_3$ solution. Then, 10 g of concentrated HNO$_3$ (Panreac, 67 wt%) was carefully introduced very slowly. The resulting mixture was then stirred at ambient temperature for 24 h. Before centrifugation 10 ml deionized water was added. The obtained white powder was again washed with water and dried overnight at 60 °C.

6) Ph-PMO-SO$_3$H characterization

Mesostructure and porosity

*Figure S1. High-resolution TEM image of Ph-PMO-SO$_3$H sample.*
In agreement with the existing literature, the image reported in figure S1 shows that Ph-PMO-SO$_3$H has an ordered region with a distinctly hexagonal arrangement of uniform channels.

**Materials structure**

![Figure S2](image_url)

*Figure S2* $^{13}$C CP-MAS NMR spectra of Ph-PMO-SO$_3$H sample. (* refers to spinning sideband)

In the $^{13}$C CP-MAS NMR spectrum of Ph-PMO-SO$_3$H sample (Figure S2), the signal at 132.9 ppm was assigned to the carbon of the phenyl groups. The bands in the domain 60-0 ppm were characteristic of the three carbons of the propylsulfonic groups. In this range of chemical shifts, some bands due to remaining surfactant and a spinning sideband are also visible.

![Figure S3](image_url)

*Figure S3* $^{29}$Si CP-MAS NMR spectra of Ph-PMO-SO$_3$H sample
The $^{29}$Si CP MAS NMR spectrum of Ph-PMO-SO$_3$H sample showed three signals at -80.8, -70.1, and -58.9 ppm (Figure S3). They could be assigned as $T^2$/$T^3$ for Si attached with benzene (-70.1 and -80.8 ppm) and $T^{2'}$/$T^{3'}$ for Si attached with propylsulfonic (-58.9 and -70.1 ppm). The broad signal at 70.1 ppm was a mixture of $T^2$ and $T^{3'}$ for silica connected with benzene and propylsulfonic groups, respectively. No resonances for $Q_n$ sites were observed. This clearly indicates that the integrity of the Si-C bonds of the material remain under oxidation conditions.

**Thermal properties and stability**

![Thermogravimetric weight loss curve for Ph-PMO-SO$_3$H sample under air atmosphere](image)

Figure S4 Thermogravimetric weight loss curve for Ph-PMO-SO$_3$H sample under air atmosphere

The TGA curve was performed from 25 °C to 900 °C under air atmosphere. The weight loss in the TGA curve below 100 °C was due to the removal of physisorbed water. A weight loss around 360°C was assigned to the decomposition of propylsulfonic acid functionality. The last weight loss in the range from 550 to 800 °C is due to the decomposition of bridged benzene moiety.

SEM pictures were recorded to observe the morphology of the Ph-PMO-SO$_3$H sample. The image in the figure S5 shows randomly shaped particles of 1-3 µm. Similar shape and size of particles were observed with the recycled Ph-PMO-SO$_3$H sample.
7) **Determination of the H⁺ exchange capacity of the tested solid acid catalysts**

0.2 g of acid solid was suspended in 20mL of an aqueous solution of KCl (0.1mol/L) and stirred for 30 min. Titration of the resulting solution was then carried out with a solution of KOH (0.02mol/L) and the pH evolution was monitored by a Metrohm pH meter. Note that for A31 and A70 cation exchange resins, H⁺ exchange capacity was kindly provided by Rohm et Hass.

8) **General procedure for the synthesis of 3a-j (Table 2 of the manuscript)**

In a typical procedure, indole (2 mmol), aldehyde (1 mmol) and 0.7 mol% of supported sulfonic sites were mixed in 2mL of H₂O and magnetically stirred at 60°C. After completion of the reaction, the reaction products were selectively extracted from water with ethyl acetate (3 x 2mL). Then, ethyl acetate was removed under reduced pressure and the products were purified by flash chromatography over silica gel (60Å, 40-63 μm, surface area: 550 m²/g). For all products a mixture ethyl acetate/heptane 30/70 was used as eluting solvent. Full characterization of 3a-j and copies of their ¹H and ¹³C NMR spectra are provided below.

Note that no leaching of catalytic sites occurred. Indeed, when the acid solid catalyst was removed after 40% conversion, the reaction immediately stops.

9) **Recycling experiments (Figure 1 of the manuscript)**

Recycling experiments were performed starting from indole (2mmol), benzaldehyde (1mmol) and 0.7 mol% of -SO₃H supported over either Ph-PMO or SBA-15 or HMS.
reaction was carried out in 2mL of H₂O and heated at 60°C for 20 min. After this period of time, 3a was selectively extracted from the water phase with ethyl acetate. The solid catalyst remained in suspension in water and was not reactivated or purified. Then indole (2mmol) and benzaldehyde (1mmol) were directly reloaded to the suspension of solid catalyst in H₂O. This procedure was then repeated 5 times in the case of PMS-SO₃H and 6 times in the case of Ph-PMO-SO₃H.

10) Etherification of glycerol with 1-phenyl-1-propanol (scheme 1 of the manuscript)

In a typical experiment, 4 mmol of glycerin (glycerol/H₂O: 80/20), 1 mmol of 1-phenyl-1-propanol were mixed and magnetically stirred at 100°C in the presence of 2 mol% of -SO₃H supported over either Ph-PMO or SBA-15. After 1h of reaction, the glycerol benzylethers were extracted from the glycerol phase with ethyl acetate (3 x 5 mL). After concentration of the organic phase, crude compounds were then purified by flash chromatography over silica gel (60Å, 40-63 µm, surface area: 550 m²/g) using a mixture of ethyl acetate and heptane (E/Hᵥ/v = 5/1) as eluting solvent. The collected product was a mixture of two regioisomers: 1-phenyl-1-propyl α-glyceryl ether (4a) and 1-phenyl-1-propyl β-glyceryl ether (4b). The 4a/4b molar ratio was determined by ¹H NMR and GC and was found to be equal to 9/1).

11) Recycling experiments (scheme 1 of the manuscript)

In a similar procedure than that described above, after extraction of the reaction products with ethyl acetate, the solid catalysts SBA-SO₃H and Ph-PMO-SO₃H remained in
suspension in glycerin. SBA-SO$_3$H and Ph-PMO-SO$_3$H were not reactivated or purified. Then, glycerin (1 mmol) and 1-phenyl-1-propanol (1mmol) were directly reloaded. This procedure was then repeated 5 times.

12) Full characterization of the reaction products

3a: 3,3’-(phenylmethylene)bis-1H-indole

$^{1}$$H$-NMR (400MHz, CDCl$_3$) $\delta$: 5.88 (s, 1H, -CH), 6.63 (d, 2H, $J = 2.4$ Hz, -NH-CH=), 7.00 (dd, 2H, $J = 7.9$ Hz, -CH=), 7.17 (dd, 2H, $J = 7.9$ Hz, -CH=), 7.21 (m, 1H, -CH=), 7.27 (m, 2H, -CH=), 7.33 (d, 4H, $J = 8.0$ Hz, -CH=), 7.38 (d, 2H, $J = 8.0$ Hz, -CH=), 7.87 (br s, 2H, -NH).

$^{13}$$C$-NMR (CDCl$_3$) $\delta$: 40.2 (-CH), 111.0 (-CH), 119.3 (-CH), 119.7 (-C), 119.9 (-CH), 121.9 (-CH), 123.6 (-CH), 126.2 (-C), 127.1 (-CH), 128.2 (-CH), 128.7 (-CH), 136.9 (-C), 144.0 (-C).

IR (neat) $\nu$: 740, 1011, 1092, 1224, 1330, 1599, 2852 (-CH), 2928 (-CH), 3022 (Ar-H), 3055 (Ar-H), 3410 (-NH) cm$^{-1}$

MS (EI): m/z = 322 [M$^+$. 246 [M-Ph].

3b: 3,3’-(phenylmethylene)bis(1-methyl-1H-indole)

$^{1}$$H$-NMR (400MHz, CDCl$_3$) $\delta$: 3.66 (s, 6H, -CH$_{3}$), 5.87 (s, 1H, -CH), 6.52 (s, 2H, -N-CH=), 6.98 (dd, 2H, $J = 7.9$ Hz, -CH=), 7.19 (dd, 3H, $J = 7.9$ Hz, -CH=), 7.29 (m, 4H, -CH=), 7.33 (d, 2H, $J = 7.9$ Hz, -CH=), 7.35 (d, 2H, $J = 7.9$ Hz, -CH=).
13C-NMR (CDCl₃) δ: 32.7 (-CH₃), 40.1 (-CH-), 109.1 (-CH=), 118.3 (-C=), 118.7 (-CH=), 120.1 (-CH=), 121.4 (-CH=), 126.0 (-CH=), 127.5 (-C=), 128.2 (-CH=), 128.3 (-CH=), 128.7 (-CH=), 137.4 (-C=), 144.5 (-C=).

IR (neat) ν 739, 801, 1011, 1225, 1328, 1369, 1472, 1598, 2853 (-CH-), 2927 (-CH-), 3021 (Ar-H), 3054 cm⁻¹

MS (EI): m/z = 350 [M]+, 274 [M-Ph]+

3c: 3,3’-(phenylmethylen)bis(2-methyl-1H-indole)

1H-NMR (400MHz, CDCl₃) δ: 2.11 (s, 6H, -CH₃), 6.05 (s, 1H, -CH-), 6.71 (dd, 2H, J = 7.9 Hz, -CH=), 6.92 (m, 4H, -CH=), 7.26 (m 7H, -CH=), 9.85 (br s, 2H, -NH=).

13C-NMR (CDCl₃) δ: 12.3 (-CH₃), 40.2 (-CH-), 111.1 (-CH=), 113.7 (-C=), 119.1 (-CH=), 119.8 (-CH=), 120.8 (-CH=), 126.6 (-C=), 128.8 (-CH=), 129.9 (-CH=), 132.8 (-C=), 136.4 (-C=), 145.6 (-C=).

IR (neat) ν 719, 808, 833, 924, 1022, 1039, 1127, 1171, 1206, 1291, 1439, 1453, 1484, 1584, 1623, 2925 (-CH=), 2960 (-CH=), 3314, 3391 (-NH-) cm⁻¹

MS (EI): m/z = 350 [M]+, 274 [M-Ph]+

3d: 3,3’-(phenylmethylen)bis(1-methyl-2-phenyl-1H-indole)

1H-NMR (400MHz, CDCl₃) δ: 3.42 (s, 6H, -CH₃), 5.68 (s, 1H, -CH-CH=), 6.82 (dd, 6H, J= 6.9 Hz, -CH=), 6.89 (d, 2H, J = 7.6 Hz, -CH=), 7.11-7.25 (m, 15H, -CH=).
13C-NMR (CDCl3) δ: 30.7 (-NCH3), 40.3 (-CH-), 109.0 (-CH=), 115.3 (-C=), 119.0 (-CH=), 120.9 (-CH=), 121.4 (-C=), 125.7-128.3 (-CH=), 127.8 (-CH=), 130.5 (-CH=), 132.0 (-C=), 137.1 (-C=), 138.6 (-C=), 145.2 (-C=).

IR (neat) ν 731, 761, 798, 882, 1006, 1091, 1196, 1314, 1333, 1411, 1442, 1562, 2923 (-CH-), 3108 (Ar-H) cm⁻¹

MS (EI): m/z = 502 [M]+

3e: 3,3’-(phenylmethylene)bis(5-methoxy-1H-indole)

1H-NMR (400MHz, CDCl3) δ: 3.66 (s, 6H, -OC6H3), 5.76 (s, 1H, -CH-CH=), 6.66 (d, 2H, J = 1.7 Hz, -N-CH=), 6.65-6.85 (m, 4H, -CH=), 7.21-7.35 (m, 7H, -CH=), 7.81 (br s, 2H, NH).

13C-NMR (CDCl3) δ: 40.3 (-CH-), 55.9 (-OCH3), 102.0 (-CH=), 111.7 (-CH=), 111.9 (-CH=), 119.3 (-C=), 124.4 (-CH=), 126.1 (-CH=), 127.5 (-C=), 128.2 (-CH=), 128.7 (-CH=), 131.8 (-C=), 143.9 (-C=), 153.7 (-O-C=).

IR (neat) ν 719, 808, 924, 1022, 1171, 1206, 1291, 1439, 1453, 1484, 1584, 1623, 2925 (-CH-), 2960 (-CH-), 3004 (Ar-H), 3314, 3391 (-NH-) cm⁻¹

MS (ESI): m/z = 383 [MH]+

3f: 3,3’-(phenylmethylene)bis(5-bromo-1H-indole)

1H-NMR (400MHz, CD3COCD3) δ: 5.96 (s, 1H, -CH-CH=), 6.90 (d, 2H, J = 2.4 Hz, -N-CH=), 7.22 (dd, 2H, J = 8.4 Hz, -CH=); 7.32 (m, 3H, -CH=), 7.41 (m, 4H, -CH=), 7.55 (d, 2H, J = 1.6 Hz, -CH=); 10.32 (br s, 2H, -NH-).
$^{13}$C-NMR (CDCl$_3$) δ: 40.6 (-CH$_2$), 112.5 (-C=), 114.2 (-CH=), 119.4 (-C=), 122.7 (-CH=), 124.9 (-CH=); 126.3 (-C=), 127.1 (-CH=), 129.1 (-CH=), 129.4 (-CH=), 129.8 (-C=), 136.8 (-C=), 145.4 (-C=).

IR (neat) ν 700, 790, 882, 1094, 1211, 1318, 1416, 1451, 1565, 2851 (-CH$_2$), 2924 (-CH$_2$), 3025 (Ar-H), 3419 (-NH-) cm$^{-1}$

MS (ESI): m/z = 481 [MH]$^+$

3g: 3,3’-[(1E)-1-phenylbut-1-ene-4,4’-diyl]bis-1H-indole

$^1$H-NMR (400MHz, CDCl$_3$) δ: 5.23 (d, 1H, $J = 7.2$ Hz, -CH$_2$), 6.45 (d, 1H, $J_{trans} = 15.6$ Hz, Ph-CH$=$CH$_2$), 6.78 (d, 2H, $J = 7.6$ Hz, -CH$_2$), 6.81 (d, 2H, $J = 7.6$ Hz, -CH$_2$), 6.93 (dd, 2H, $J = 7.2$ Hz, -CH$_2$), 7.00 (d, 2H, $J = 2.0$ Hz, -N-CH$_2$), 7.04 (dd, 1H, $J_{cis} = 7.2$ Hz, $J_{trans} = 15.6$ Hz Ph-CH$_2$CH$_2$), 7.13 (dd, 2H, $J = 7.6$ Hz, -CH$_2$), 7.28 (m, 3H, -CH$_2$), 7.43 (d, 2H, $J = 8.0$ Hz, -CH$_2$), 9.96 (br s, 2H, -NH$_2$)

$^{13}$C-NMR (CDCl$_3$) δ: 38.7 (-CH$_2$), 112.2 (-CH$_2$), 118.7 (-C=), 119.3 (-CH$_2$), 120.4 (-CH$_2$), 122.0 (-CH$_2$), 123.6 (-CH$_2$), 127.0 (-CH$_2$), 127.7 (-C=), 128.0 (-CH$_2$), 128.4 (-CH$_2$), 130.0 (-CH$_2$), 134.1 (-CH$_2$), 138.1 (-C=), 138.9 (-C=).

IR (neat) ν 738, 964, 1093, 1218, 1245, 1337, 1417, 1455, 1490, 1530, 1599, 2855 (-CH$_2$), 2925 (-CH$_2$), 3055 (Ar-H), 3407 (-NH$_2$) cm$^{-1}$

MS (EI): m/z = 322 [M-C$_2$H$_4$]$^+$

3h: 3,3’-nonane-1,1-diylbis-1H-indole
$^1$H-NMR (400MHz, CDCl$_3$) δ: 0.83 (t, 3H, $J = 6.8$ Hz, -CH$_3$), 1.22-1.37 (s, 12H, -CH$_2$), 2.18 (m, 2H, -CH$_2$-), 4.44 (t, 1H, $J = 7.2$ Hz, -CH=CH=), 6.89 (d, 2H, $J = 2.0$ Hz, -N-CH=), 7.02 (dd, 2H, $J = 6.9$ Hz, -CH=), 7.13 (dd, 2H, $J = 7.0$, CH=), 7.26 (d, 2H, $J = 8.0$ Hz, -CH=), 7.58 (d, 2H, $J = 8.0$ Hz, -CH=), 7.73 (br s, 2H, NH).

$^{13}$C-NMR (CDCl$_3$) δ: 14.2 (-CH$_3$), 22.7 (-CH$_2$), 28.4-29.9 (-CH$_2$), 31.9 (-CH$_2$), 34.1 (-CH$_2$), 35.9 (-CH), 111.1 (-CH=), 119.0-121.7 (-CH=), 127.2 (-C=), 136.6 (-C=).

IR (neat) ν 738, 1011, 1095, 1334, 1455, 1485, 1618, 2853 (-CH-), 2924 (-CH-), 2953 (-CH-), 3057 (Ar-H), 3386 (-NH-) cm$^{-1}$

MS (ESI): m/z = 359 [MH]$^+$, 397 [M+K]$^+$

3i: 3,3’-(furylmethylene)bis-1H-indole

![Chemical Structure of 3i]

$^1$H-NMR (400MHz, CD$_3$COCD$_3$) δ: 5.97 (s, 1H, -CH-CH=), 6.07 (d, 1H, $J = 3.2$ Hz, -O-CH=), 6.31 (d, 2H, $J = 1.9$ Hz, -N-CH=), 6.92 (dd, 2H, $J = 7.2$ Hz, -CH=), 7.06 (m, 3H, -CH=), 7.38 (d, 2H, $J = 8.0$ Hz, -CH=), 7.42 (m, 1H, -CH=), 7.47 (d, 2H, $J = 8.0$ Hz, -CH=), 10.03 (br s, 2H, -NH-).

$^{13}$C-NMR (400MHz, CD$_3$COCD$_3$) δ: 35.0 (-CH), 106.9 (-CH=), 110.9 (-CH=), 112.2 (-CH=), 112.3 (-CH=), 117.5 (-CH=), 117.6 (-C=), 119.5 (-CH=), 120.2 (-CH=), 122.1 (-CH=), 124.1 (-CH=), 124.2 (-CH=), 127.9 (-C=), 137.8 (-CH=), 137.9 (-C=), 141.9 (O-CH=), 158.9 (-O-C=).

IR (neat) ν 741, 927, 1009, 1239, 1416, 1456, 1615, 1693, 2920 (-CH=), 3055 (Ar-H), 3406 (-NH-) cm$^{-1}$

MS (ESI): m/z = 313 [MH]$^+$

4a/4b: 1-Phenyl-1-propyl $\alpha$-glyceryl ether and 1-phenyl-1-propyl $\beta$-glyceryl ether ($\alpha/\beta = 90/10$)
$^1$H NMR $\delta$ 0.85 (t, $J = 7.4$ Hz, 3H), 1.59-1.73 (m, 1H), 1.76-1.91 (m, 1H), 3.25-3.35 (m, 2H), 3.46-3.75 (m, 4H), 3.77-3.82 (m, 1H), 4.12 (t, $J = 6.7$ Hz, 0.9 H), 4.30 (t, $J = 6.8$ Hz, 0.1 H), 7.21-7.34 (m, 5H).

$^{13}$C NMR $\delta$ 10.2, 10.4, 30.8, 31.0, 61.1, 62.4, 64.0, 64.2, 70.1, 70.2, 70.9, 71.1, 82.8, 84.5, 84.6, 126.7, 126.8, 127.6, 127.8, 128.4, 128.5, 141.9, 142.4.

IR (neat) 3381, 2965, 2933, 2876, 1452, 1103, 1042, 727, 755, 700 cm$^{-1}$.

Anal. Calcd for C$_{12}$H$_{18}$O$_3$: C, 68.54; H, 8.63. Found: C, 68.35; H, 8.91.