Journal of Materials Chemistry A



CORRECTION

View Article Online
View Journal | View Issue



Cite this: J. Mater. Chem. A, 2019, 7, 18159

Correction: Bottom-up synthesis of fully sp² hybridized three-dimensional microporous graphitic frameworks as metal-free catalysts

Siddulu Naidu Talapaneni,^a Jaehoon Kim,^a Sang Hyun Je,^a Onur Buyukcakir,^a Jihun Oh^{*a} and Ali Coskun[†]*

DOI: 10.1039/c9ta90156f

www.rsc.org/MaterialsA

Correction for 'Bottom-up synthesis of fully sp² hybridized three-dimensional microporous graphitic frameworks as metal-free catalysts' by S. N. Talapaneni *et al., J. Mater. Chem. A,* 2017, **5**, 12080–12085.

The authors regret that the ¹H NMR and ¹³C NMR spectra of octaketotetraphenylene and hexaketotriphenylene shown in the Fig. S6, S7, S11 and S12 of the original manuscript were inconsistent with the purported ketones. It was determined that the NMR spectra were obtained from an old batch of samples, thus leading to this inconsistency in the spectra. To avoid possible misunderstanding, the octaketotetraphenylene and hexaketotriphenylene molecules have been freshly prepared and characterized once again by NMR and also by FTIR spectroscopic analysis. Moreover, in the published version, the authors have not provided any characterization data for the octahydroxytetraphenylene, whereas, in the current Correction, they are also reporting ¹H NMR and ¹³C NMR spectra for octahydroxytetraphenylene. The authors would like to update the Fig. S6, S7, S11 and S12 with the corrected versions containing new ¹H NMR and ¹³C NMR spectra of octahydroxytetraphenylene, octaketotetraphenylene and hexaketotriphenylene and also add the corresponding FTIR data. The authors would like to stress that the ketones must be used in the next step immediately after their synthesis due to their high sensitivity towards ambient conditions and also apologize from the community for this unintentional mistake.

[&]quot;Graduate School of EEWS, KAIST Institute NanoCentury, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea. E-mail: iihun.oh@kaist.ac.kr: coskun@kaist.ac.kr

Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea

[†] Present address: Department of Chemistry, University of Fribourg, Chemin de Musee 9, Fribourg 1700, Switzerland.

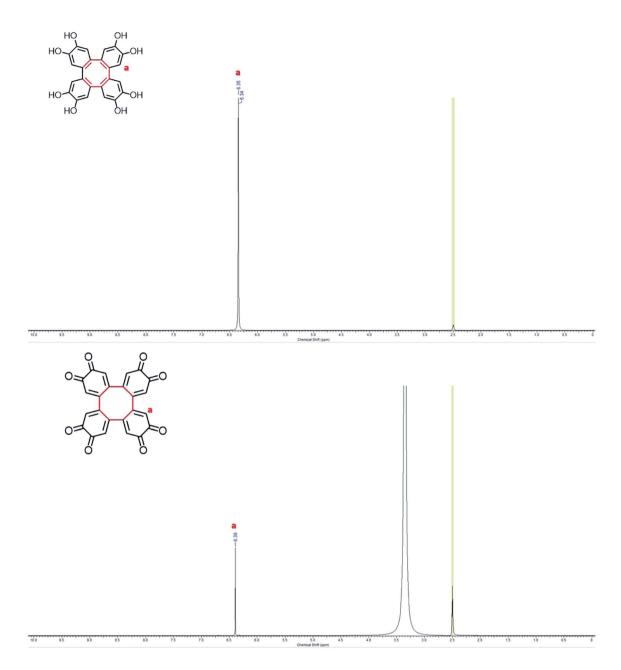


Fig. S6 1 H NMR (400 MHz, DMSO-d₆, 298 K) spectra of octahydroxytetraphenylene (6.35 (s, 8H) ppm) and octaketotetraphenylene (6.39 (s, 8H) ppm).

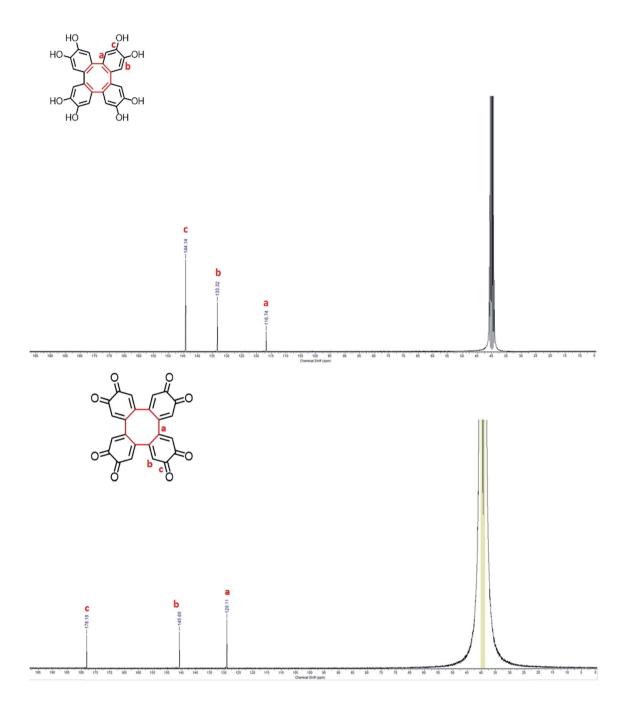


Fig. S7 13 C NMR (100 MHz, DMSO-d₆, 298 K) spectra of octahydroxytetraphenylene (top) (δ 144.1, 133.3, 116.5 ppm) and octaketotetraphenylene (δ 178.2, 145.7, 129.1 ppm).

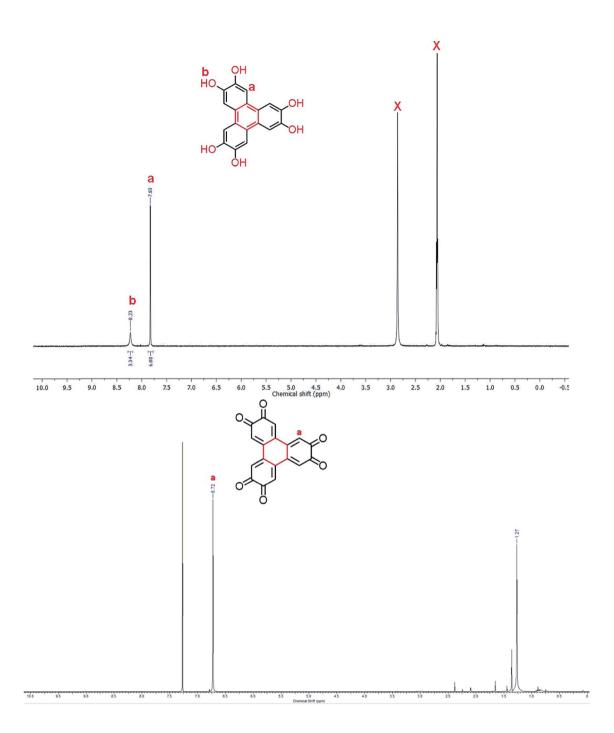


Fig. S11 1 H NMR (300 MHz, Acetone-d₆, 298 K) spectrum of hexahydroxytetraphenylene (7.83 (s, 8H), 8.23 (b, 4H) ppm) and 1 H NMR (400 MHz, CDCl₃, 298 K) spectrum of hexaketotriphenylene (6.72 (s, 6H) ppm). Unable to obtain 13 C NMR spectrum of hexaketotriphenylene possibly due to its low stability. The small peaks below 2.5 ppm are attributed to the solvent impurities.

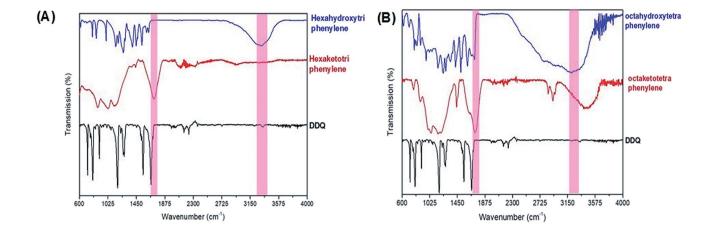


Fig. S12 (A) FTIR spectra of hexahydroxytriphenylene (blue), hexaketotriphenylene (red) and DDQ (black); (B) FTIR spectra of octahydroxytetraphenylene (blue), octoketotetraphenylene (red) and DDQ (black). As it can be seen in the FTIR spectra, both hexaketotriphenylene and octoketotetraphenylene exhibited a strong peak at $\sim 1750 \text{ cm}^{-1}$ attributed to the formation of ketone functional groups accompanied by the disappearance of the -OH stretching band of hexahydroxytriphenylene and octahydroxytetraphenylene at \sim 3200 cm⁻¹. While the C-H stretching band is clearly visible for octaketophenylene at \sim 3000 cm⁻¹, the one for hexaketotriphenylene is found to be relatively weak and broad.

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

Notes and references

1 M. Nomura, Japanese Patent No. JP 2016008227 A, (2016), Jpn. Kokai Tokkyo Koho.