

Supplementary Information

The fate of organic species upon sintering of thiol-stabilised gold nanoparticles under different atmospheric conditions

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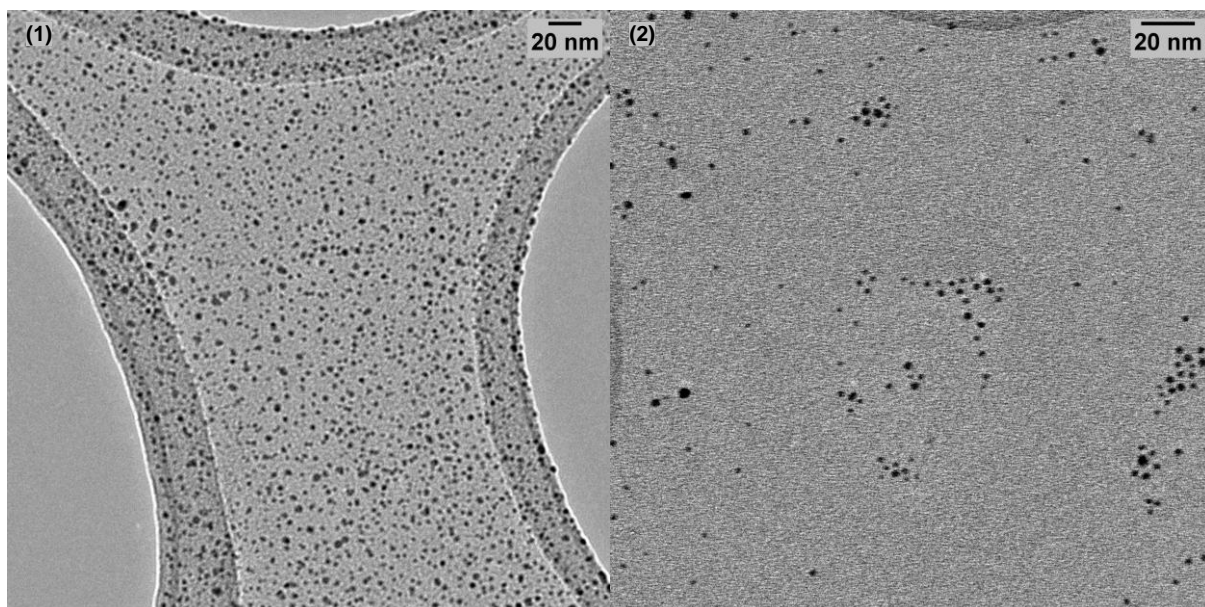


Fig. S1. TEM images of (1) BT@AuNP and (2) HDT@AuNP

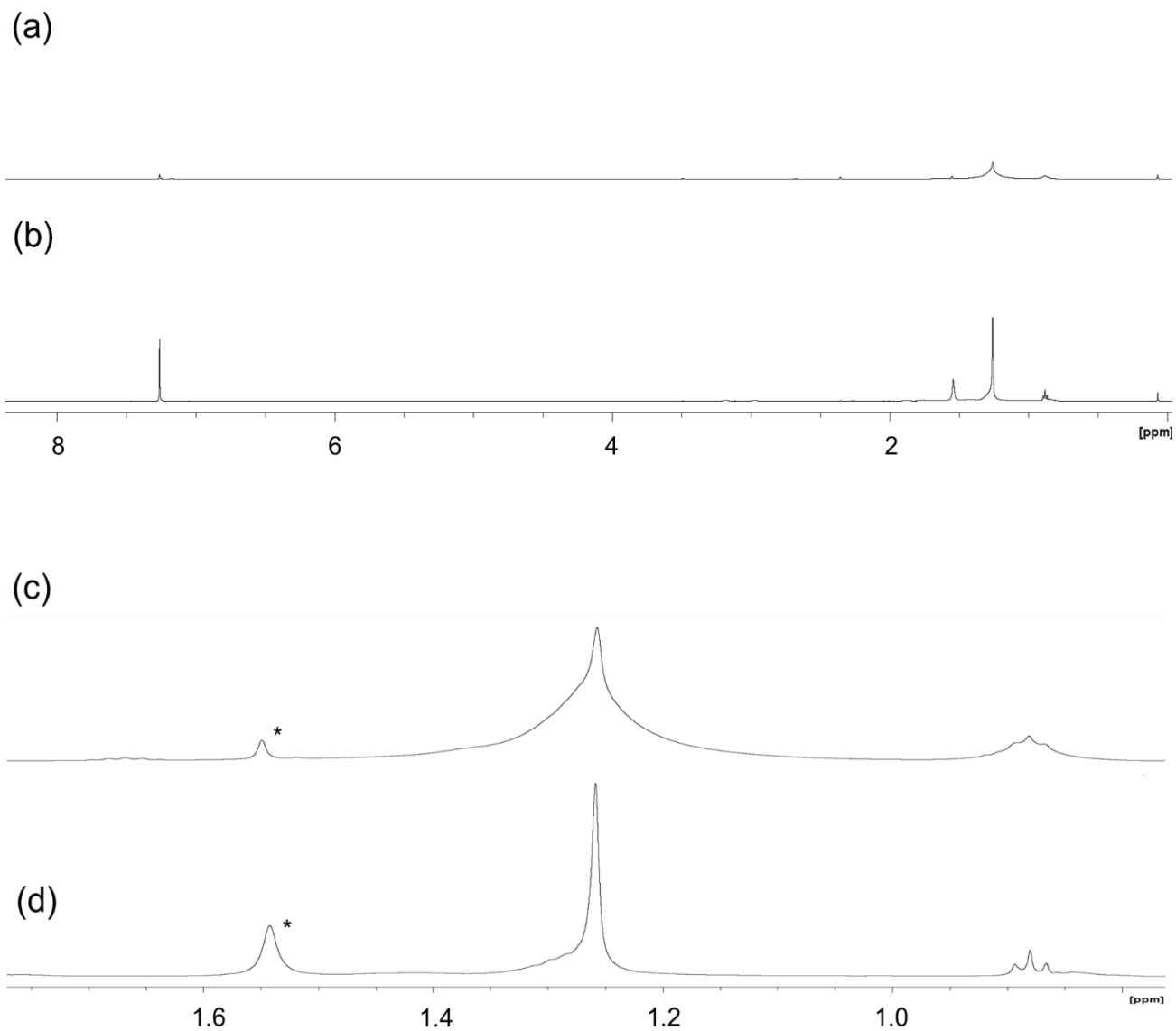


Fig. S2. ¹H NMR spectra of (a)/(c) BT@AuNP and (b)/(d) HDT@AuNP in CDCl₃.
* indicates water (1.58 ppm).

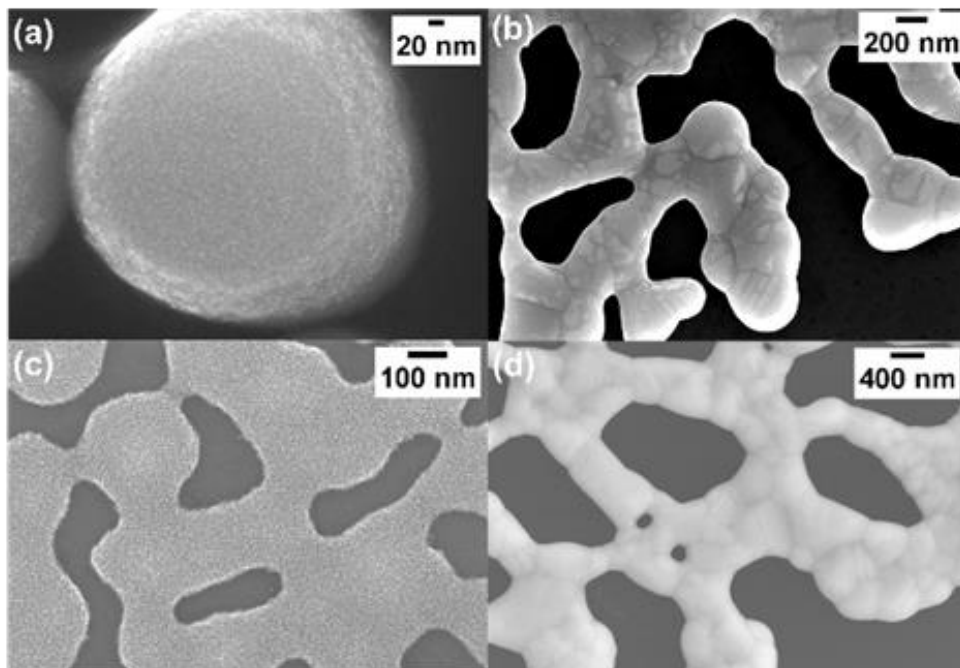


Fig. S3. SEM images of BT@AuNPs (a) and HDT@AuNPs (c) deposited using chloroform before heating and (b/d) after heating $10\text{ }^{\circ}\text{C min}^{-1}$ in air to $350\text{ }^{\circ}\text{C}$.

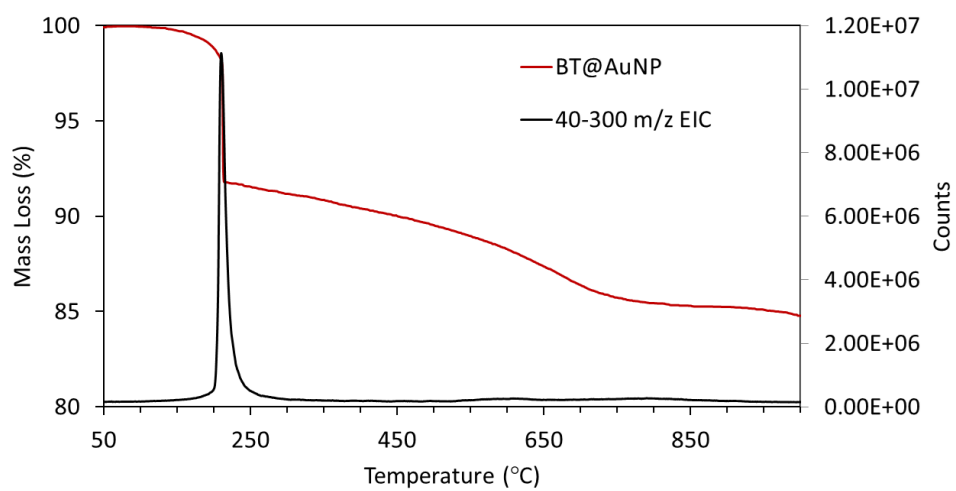


Fig. S4. TGA-MS data for BT@AuNP under a helium atmosphere.

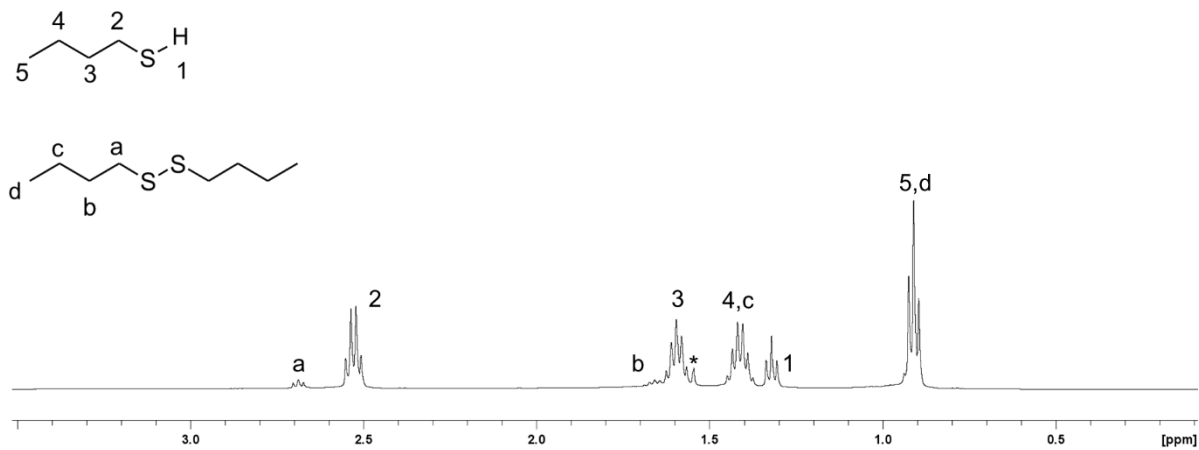


Fig. S5. ^1H NMR spectra of 1-butanethiol spiked with dibutyl disulfide.

* denotes water (1.58 ppm).

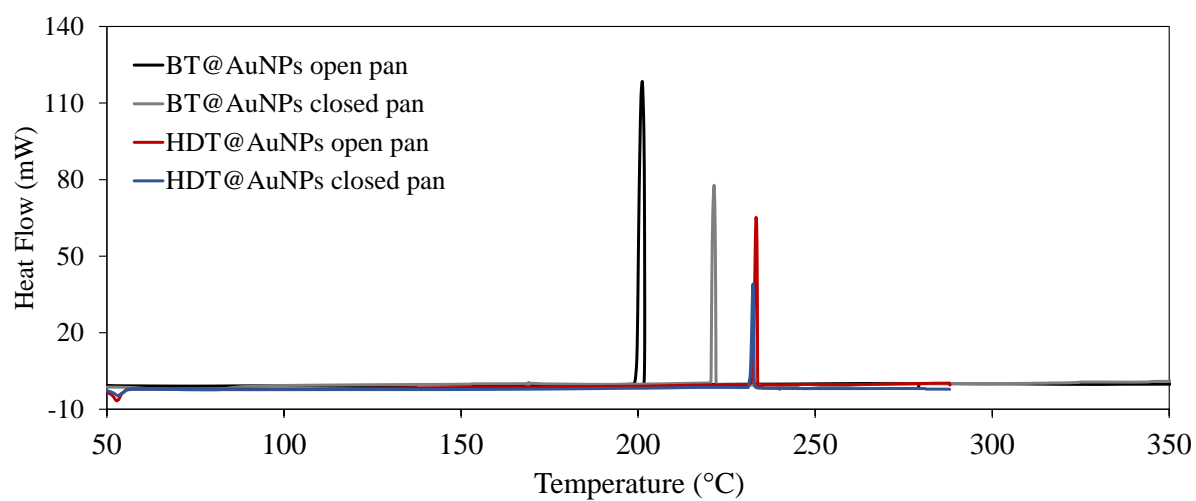


Fig. S6. Heat flow peaks (exothermic) under sealed and open environments for BT@AuNP and HDT@AuNP.

Table S1. Kruskal-Wallis test data comparing T_{SE} values of HDT@AuNPs sintered under different gaseous environments argon, hydrogen and air (gases), and a comparison of the gas T_{SE} data compared with high vacuum sintering data (atmospheres).

	χ^2	df	p
Gases	0.651	3	0.885
Atmospheres	2.34	1	0.126

Table S2. Kruskal-Wallis test data comparing T_{SE} values of BT@AuNPs sintered under different gaseous environments argon, hydrogen and air (gases), and a comparison of the gas T_{SE} data compared with high vacuum sintering data (atmospheres).

	χ^2	df	p
Gases	3.14	3	0.371
Atmospheres	10	1	0.002