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Correction: PEGylated gold nanoparticles: polymer quantification as a function of PEG lengths and nanoparticle dimensions

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Correction for 'PEGylated gold nanoparticles: polymer quantification as a function of PEG lengths and nanoparticle dimensions' by Kamil Rahme *et al.*, *RSC Adv.*, 2013, 3, 6085–6094.

The authors regret that the surface area calculation of the grafting density was originally calculated using πr^2 instead of $4\pi r^2$. This error does not affect the overall conclusions of this paper. Furthermore, the correct surface area was used in the calculation of the polymer conformation. The corrected grafting densities and foot prints have been included below.

In the abstract, the decrease in grafting density of the mPEG-SH ligands should read "0.983 to 0.07 PEG per nm^2 " and the decrease in grafting density of the mPEG_{10 000}-SH should read "0.393 to 0.2 PEG per nm^2 ".

The data in Table 2 should read:

Table 2. Surface coverage (from TGA) and mPEG-SH layer thickness (from DLS size distribution by volume) on 15 nm gold nanoparticles

| mPEG-SH (M_w) | Number of EO | DLS (ν)/PEG layer (nm) | Weight loss (%) $T > 320$ °C | N_{PEG} per 15 nm AuNP | Foot print (nm^2) | Grafting density per nm^2 |
|-------------------|--------------|------------------------------|------------------------------|---------------------------------|------------------------------|------------------------------------|
| 2100 | 47 | 2.83 ± 0.66 | 6.7 | 695 ± 87 | 1.02 | 0.983 |
| 5400 | 122 | 7.79 ± 1.0 | 9.9 | 424 ± 53 | 1.67 | 0.6 |
| 10 800 | 245 | 12.77 ± 1.5 | 12 | 278 ± 42 | 2.54 | 0.393 |
| 19 500 | 443 | 21.61 ± 2.5 | 10.82 | 132 ± 16.5 | 5.35 | 0.187 |
| 29 500 | 670 | 25.6 ± 3.0 | 10 | 81 ± 10 | 8.77 | 0.114 |
| 51 400 | 1168 | 37.15 ± 4.0 | 10.85 | 50 ± 6 | 14.2 | 0.07 |

The data in Table 3 should read:

Table 3. Surface coverage (from TGA) of different AuNPs diameter (EM/DLS) coated with mPEG_{10 000}-SH

| Diameter (nm)/EM | Diameter (nm)/DLS (\bar{I}) | Weight loss (%) $T > 320$ °C | N_{PEG} /AuNP | Foot print (nm^2) | Grafting density per nm^2 |
|------------------|---------------------------------|------------------------------|------------------------|------------------------------|------------------------------------|
| 15 ± 1.8 | 59 ± 3.5 | 14.25 | 278 ± 42 | 2.54 | 0.393 |
| 30 ± 3.5 | 72 ± 5 | 5.7 | 916 ± 106 | 3.12 | 0.323 |
| 62.5 ± 6 | 102 ± 9 | 1.64 | 2572 ± 402 | 5 | 0.2 |
| 93 ± 12 | 138 ± 10 | 1.41 | 6778 ± 814 | 4.2 | 0.24 |
| 115 ± 10 | 165 ± 14 | 1.449 | $12\ 960 \pm 1227$ | 3.2 | 0.312 |

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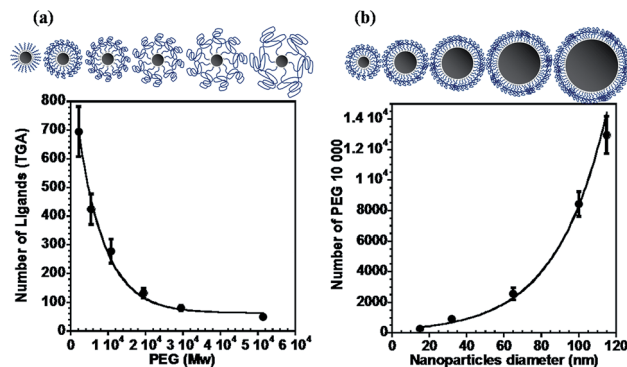
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Fig. 5 should be replaced by the following figure:



The text also affects the discussion of Fig. 5 on page 6091 which should read:

“Specifically, the number of PEG molecules grafted to the Au nanoparticles decreased by ~ 12 fold from 695 ± 87 for mPEG₂₀₀₀-SH (0.983 PEG per nm^2) to 50 ± 6 for mPEG_{48 500}-SH (0.07 PEG per nm^2). The solid line is an exponential fit to the data. Increased conformational entropy of the PEG molecules with polymer chain length leads to an increase in the footprint of the PEG molecules at the Au nanoparticle surface from 1.02 nm^2 for mPEG₂₀₀₀-SH to 14.2 nm^2 for mPEG_{48 500}-SH (see Table 2)

The text discussing mPEG_{10 000}-SH on the same page also requires amendment:

Finally, some similar behaviour has been observed in this work where the grafting density of mPEG_{10 000}-SH was higher on 15 nm diameter Au nanoparticles and decreased slightly from 0.393 to 0.2 PEG per nm^2 when the particle size increased to 65 nm in diameter (Table 3).”

The last three lines on page 3 of the ESI should read:

“So from this experiment we estimate that 15 nm AuNPs contain 278 PEG_{10 000}-SH. The grafting density correspond to $278/706.84 \sim 0.393$ PEG_{10 000} per nm^2 and finally the foot print of the PEG_{10 000} correspond to $1/0.393 \sim 2.54$ nm^2 .”

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

