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## Retraction: PEG-nanotube liquid crystals as templates for construction of surfactant-free gold nanorods

Naohiro Kameta<sup>\*a</sup> and Hidenobu Shiroishi<sup>b</sup>

Retraction of 'PEG-nanotube liquid crystals as templates for construction of surfactant-free gold nanorods' by Naohiro Kameta and Hidenobu Shiroishi, *Chem. Commun.*, 2018, **54**, 4665–4668, <https://doi.org/10.1039/C8CC02013B>.

We the named authors hereby wholly retract this *Chemical Communications* article due to the fact that the paper has wrong electron microscopy images in Fig. 3a, 4a and Fig. S1, S4, S9 on the part of the first author, who is affiliated with the National Institute of Advanced Industrial Science and Technology (AIST).

In the TEM image of Fig. 3a, the original TEM image before trimming and other processing is missing, so we cannot demonstrate whether the TEM image of Fig. 3a is of the actual sample.

Fig. 4a should have displayed the SEM image of thiol-functionalized gold nanorods (12-crown-4-GNRs) separated from the nanotube liquid crystal (NT-LC) template. However, the first author posted the SEM image of the 12-crown-4-GNRs adsorbed on the NT-LC template. The incorrect image in Fig. 4a is also found to include a serious error with the scale bar length, which was approximately 27 times longer than the actual.

The upper left, upper right, lower central and lower right TEM images of Fig S1 had incorrect scale bar lengths, which were approximately 2.0 shorter and 1.9, 2.9 and 3.3 times longer than the actual, respectively.

Fig. S4 should have displayed the TEM image of PEG-functionalized nanotubes. However, the first author posted a TEM image of irrelevant PEG-functionalized nanotubes that were developed by the authors in other studies. The incorrect image in Fig. S4 is also found to include a serious error with the scale bar length, which was approximately 1.7 times shorter than the actual. Fig. S9-left should have displayed the TEM image of 12-crown-4-GNRs prepared by using the NT-LC template composed of the glycolipid **1(6)** and the PEG derivative **2(6)**. However, the first author posted the TEM image of 12-crown-4-GNRs prepared by using the NT-LC template composed of the glycolipid **1(10)** and the PEG derivative **2(10)**. The incorrect image in Fig. S9-left and the correct image in Fig. S9-right are also found to include errors with the scale bar lengths, which were approximately 2.5 and 3.3 times shorter than the actual, respectively.

The authors respectfully retract this paper, because these events were determined to amount to scientific misconduct and the retraction of this paper was recommended by AIST. AIST verified that the first author was responsible for the misconduct and the other co-author was not engaged in the misconduct.

Signed: Hidenobu Shiroishi, Naohiro Kameta

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Retraction endorsed by Richard Kelly, Executive Editor, *Chemical Communications*

<sup>a</sup> Nanomaterials Research Institute, Department of Materials and Chemistry, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba Central 5, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8565, Japan. E-mail: n-kameta@aist.go.jp; Fax: +81-29-861-4545; Tel: +81-29-861-4478

<sup>b</sup> National Institute of Technology, Tokyo College, Kunugida 1220-2, Hachioji, Tokyo, 193-0997, Japan

