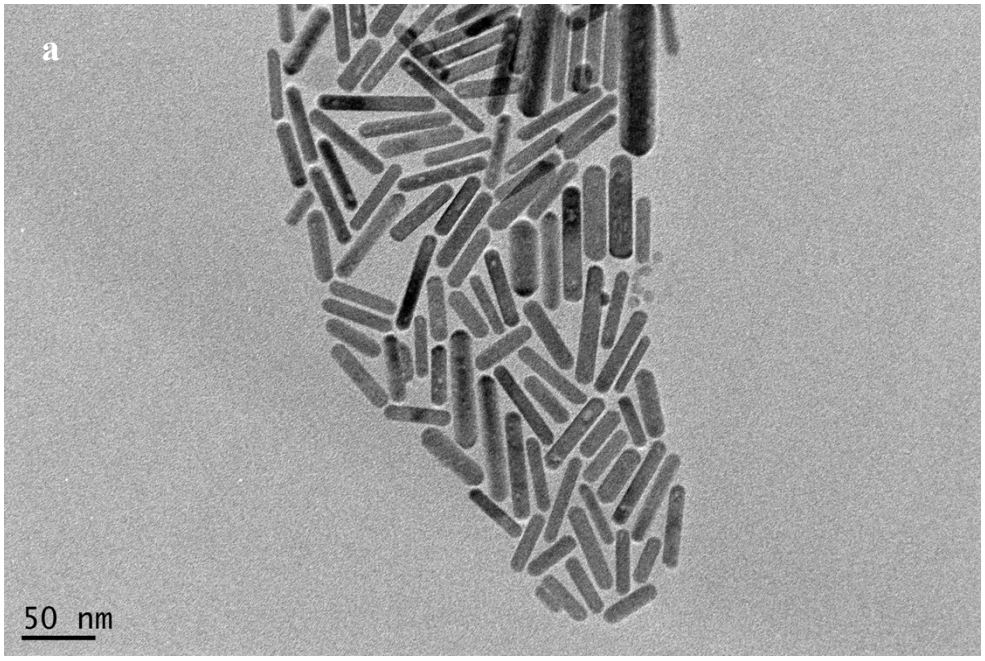
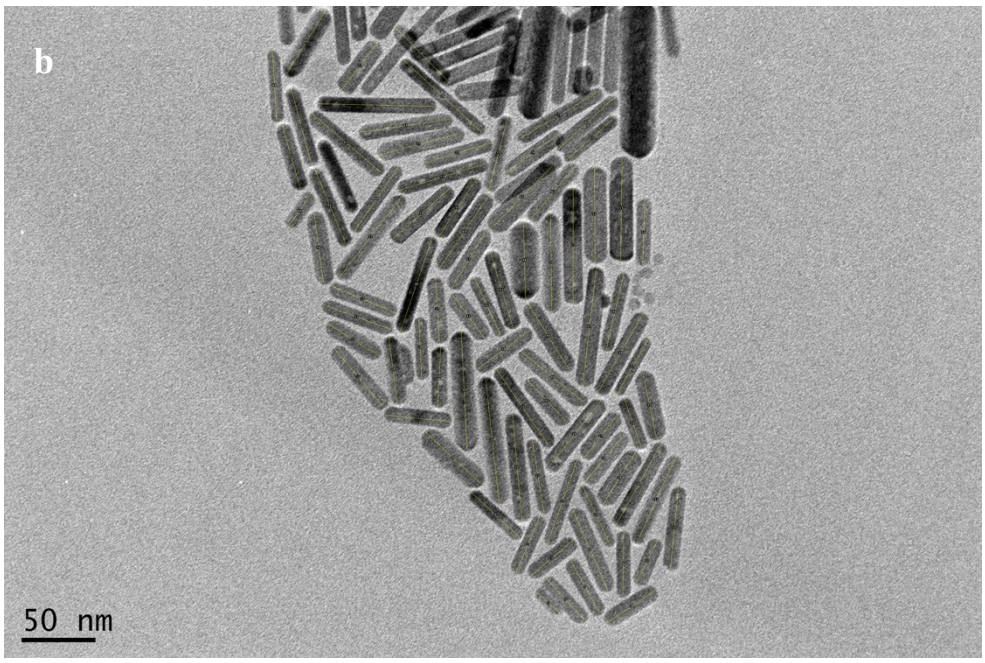
Supplementary Information (SI) for Journal of Materials Chemistry B.


# Cation Exchange Reaction in $Bi_2S_3$ Nanorods Enables the One-Step Fabrication of Copper-64 Nanoparticulate Molecular PET Imaging Agents with Ultrahigh Radiolabel stability

## Supplementary Information

Original TEM image and ImageJ processed images are provided below. 8 different images at two different magnifications were processed to acquire the mean nanorod size by length and width



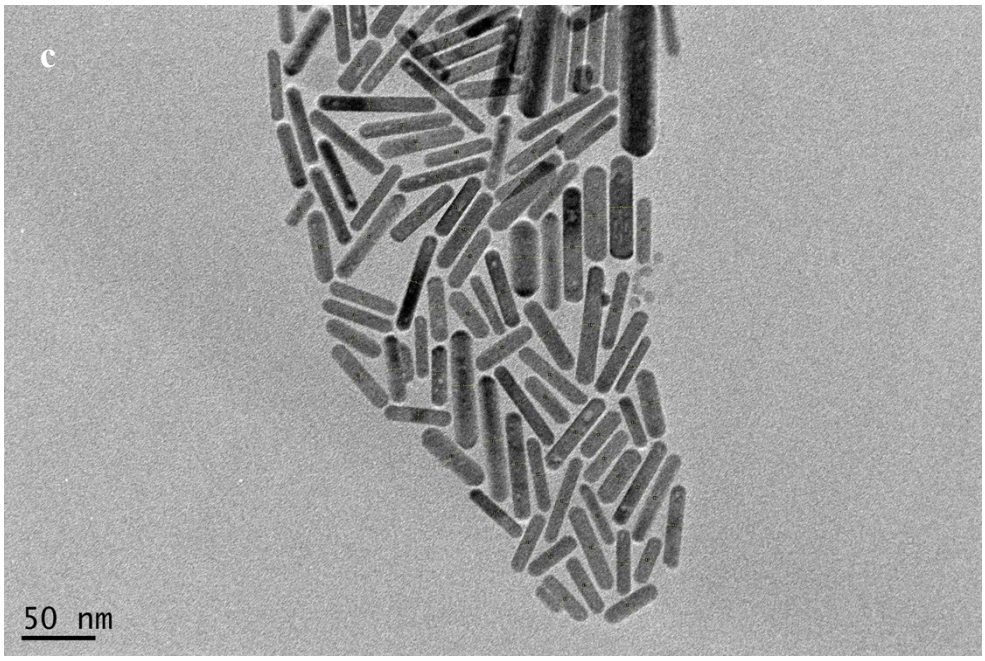



**Figure 1. Size distribution of $Bi_2S_3$ nanorods by TEM.** a) Original TEM image; b) ImageJ processed image - length measurements; ; c) ImageJ processed image - width measurements.

Uncropped image of dot blot experiment. The experiment was performed using a serial dilution of Ab1 and Ab2. We used 1μg/mL, 0.1μg/mL, and 0.01 μg/mL.

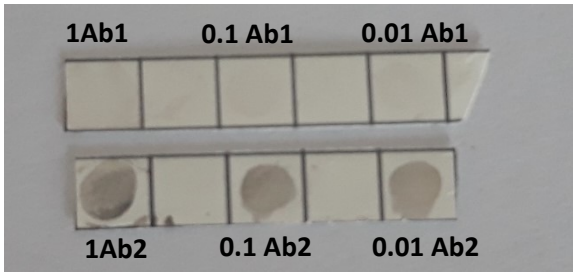



**Figure 2.** Uncropped image of dot blot experiment.

Uncropped imaging flow cytometry images used in the manuscript are provided. Object number is included. This enables referencing back to the original data file.

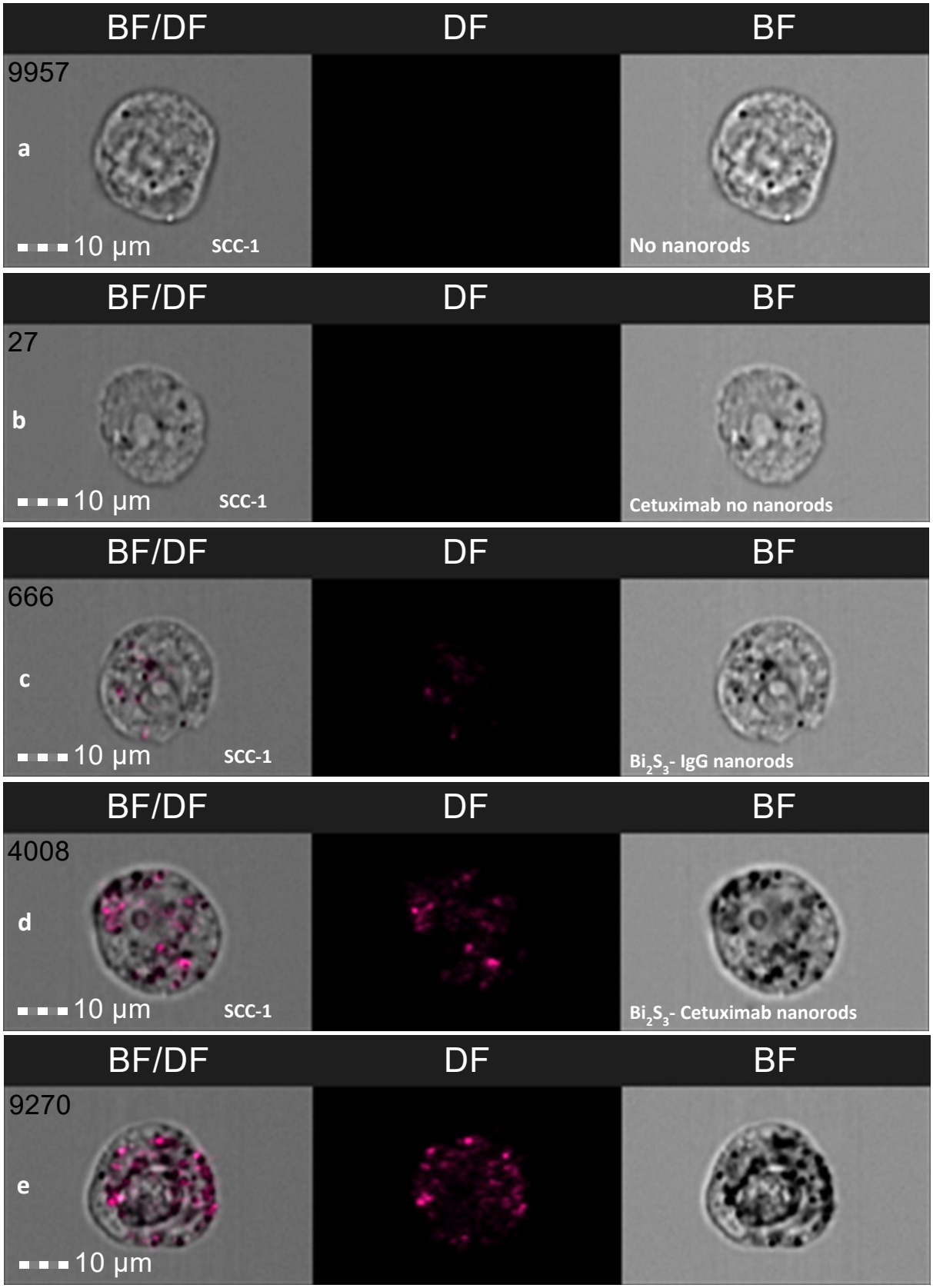

BF/DF
DF
BF
9957
a
10 µm
SCC-1
No nanorods
BF/DF
DF
BF
27
b
10 µm
SCC-1
Cetuximab no nanorods
BF/DF
DF
BF
666
c
10 µm
SCC-1
Bi2S3- IgG nanorods
BF/DF
DF
BF
4008
d
10 µm
SCC-1
Bi2S3- Cetuximab nanorods
BF/DF
DF
BF
9270
e
10 µm

**Figure 3.** Uncropped ICF images.a) SCC-1 cells with no nanorods; b) SCC-1 cells with cetuximab; c) SCC-1 cells with $Bi_2S_3$-IgG nanorods; d) SCC-1 cells with $Bi_2S_3$-cetuximab nanorods; e) SCC-1 cells with Cu:$Bi_2S_3$-cetuximab nanorods