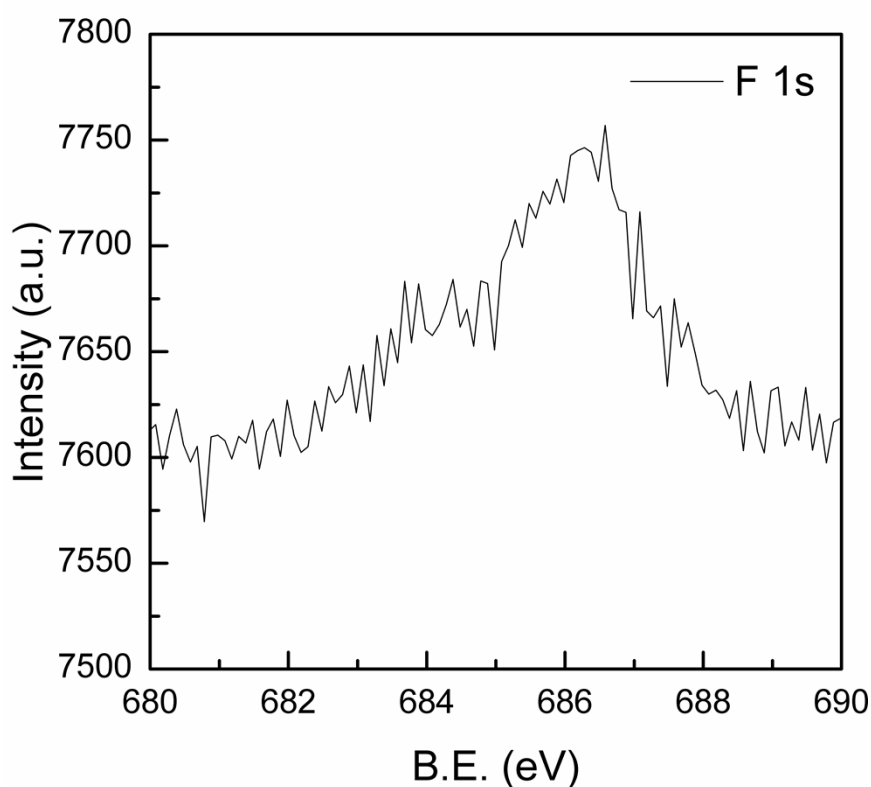


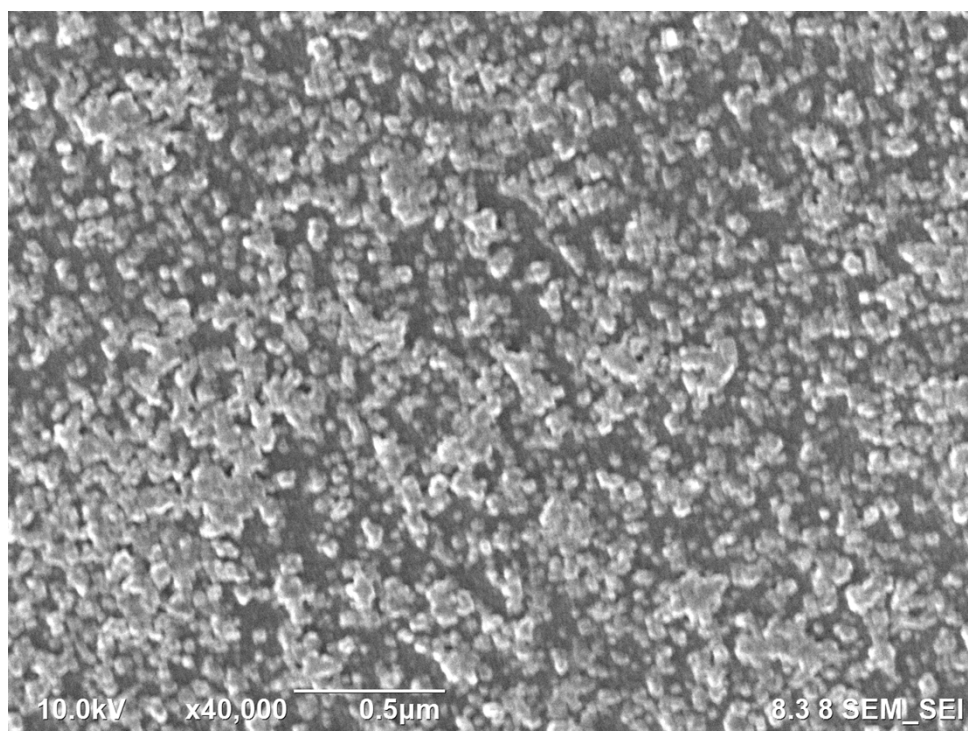
## Synthesis and fluorescence properties of nanoisland-structured $\text{SiO}_x/\text{Cu}_x\text{O}$ composite

Xu Lu, Yohei Ishida, Mai Thanh Nguyen and Tetsu Yonezawa  
Division of Materials Science and Engineering, Faculty of Engineering,  
Hokkaido University, Sapporo, Hokkaido, 060-8628 Japan

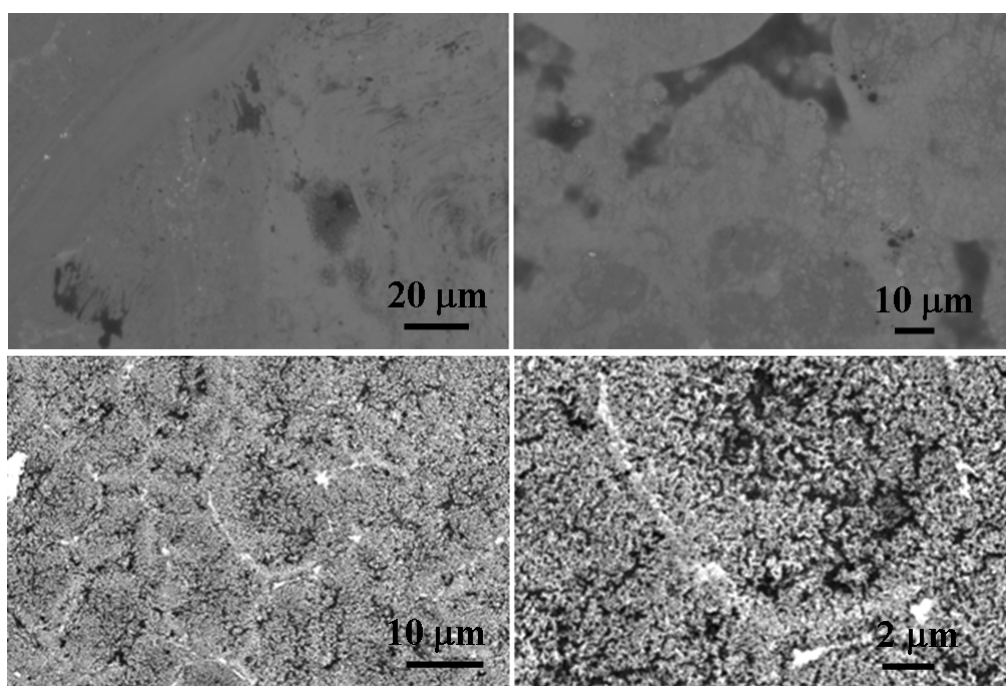
E-mail of the corresponding author: tetsu@eng.hokudai.ac.jp



**Figure S1.** XPS narrow scan spectrum of F 1s of freshly prepared nanoisland  $\text{SiO}_x/\text{Cu}_x\text{O}$  composite.



**Figure S2.** SEM image of the surface of the 3-min Cu deposited Si wafer. The bright part is the deposited Cu and the dark part is the crack structure among isolated Cu blocks.



**Figure S3.** SEM images of various samples prepared by different Cu coating conditions. Upper left: 15-min Cu coated sample; Upper right: 10-min Cu coated sample; Bottom left: 5-min Cu coated sample; Bottom right: enlarged SEM image of 5-min Cu coated sample (the preparation conditions are the same as those for preparation of nanoisland  $\text{SiO}_x/\text{Cu}_x\text{O}$  composite).

**a**

Element	Weight (%)	Atomic (%)
O	11.0	29.0
Si	14.4	21.6
Cu	74.6	49.4

**b**

Element	Weight (%)	Atomic (%)
O	11.4	29.2
Si	16.4	24.1
Cu	72.2	46.7

**Table S1.** EDS quantitative analysis of different regions of the prepared nanoisland  $\text{SiO}_x/\text{Cu}_x\text{O}$  composite: (a) EDS quantitative analysis of the protuberance region; (b) EDS quantitative analysis of the connection region between two protuberances.