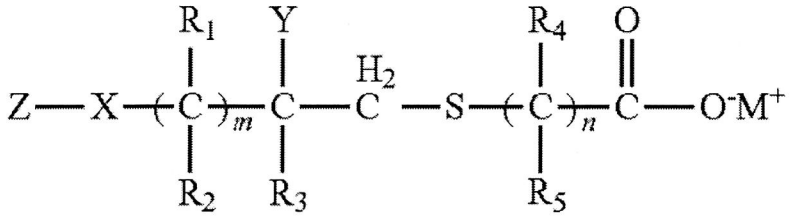
CLAIMS

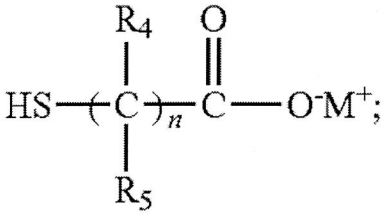
1. A purified surfactant formulation comprising
(1) a short-chain fluorosurfactant represented by Formula (I):

Formula (I)



(2) an impurity represented by Formula (II) at an amount of less than about 3% by weight of the short-chain fluorosurfactant,

Formula (II)



and
(3) an iodide additive providing iodide at an amount of about 0.5-2.5% of the short-chain fluorosurfactant,
wherein:
m is 0, 1, 2, 3, 4 or 5;
n is 1, 2, 3, or 4;
X is —O—; —S—; or a direct bond;
Y is hydrogen, —OH or fluoro;
Z is $—CH_3$, $—CH_2F$, $—CHF_2$ or $—CF_3$;

M^+ is Li^+, Na^+, K^+, H^+ or NH_4^+; and

R_1, R_2, R_3, R_4 and R_5, at each occurrence, are the same or different and independently fluoro or hydrogen.

2. The purified surfactant formulation of claim **1**, wherein the short-chain fluorosurfactant of Formula (I) has no more than 6 fluoro-bearing carbons.

3. The purified surfactant formulation of claim **1**, wherein X is a direct bond.

4. The purified surfactant formulation of claim **1**, wherein Y is —OH.

5. The purified surfactant formulation of claim **1**, wherein Z is $—CF_3$.

6. The purified surfactant formulation of claim **1**, wherein m is 6 and n is 2.

7. The purified surfactant formulation of claim **1**, wherein the impurity represented by Formula (II) is less than about 0.4% of the short-chain fluorosurfactant.

8. The purified surfactant formulation of claim **1**, wherein the iodide in the purified surfactant formulation is about 0.6-2.4% by weight of the short-chain fluorosurfactant.

9. A two-part kit for coating silver nanowires, comprising:

(1) a first container including a nanowire formulation including:

a) a plurality of silver nanowires;

b) a viscosity modifier;

c) an optional dispersant; and

d) a liquid carrier including water;

(2) a second container including a purified surfactant formulation of any one of claims **1-8**, wherein:

the nanowire formulation comprises silver ions at an amount of 0.005-0.02% per 1% of the silver

nanowires by weight; and

the purified surfactant formulation comprises iodide ions at an amount of about equimolar of the silver ions of the nanowire formulation.

10. The two-part kit of claim **9**, wherein a ratio of iodide ions and the silver ions is about 0.98:1-1.3:1.

11. The purified surfactant formulation of claim **2**, wherein X is a direct bond.

12. The purified surfactant formulation of claim **2**, wherein Y is —OH.

13. The purified surfactant formulation of claim **2**, wherein Z is —CF3.

14. The purified surfactant formulation of claim **2**, wherein m is 6 and n is 2.

15. The purified surfactant formulation of claim **2**, wherein the impurity represented by Formula (II) is less than about 0.4% of the short-chain fluorosurfactant.

16. The purified surfactant formulation of claim **2**, wherein the iodide in the purified surfactant formulation is about 0.6-2.4% by weight of the short-chain fluorosurfactant.

17. The purified surfactant formulation of claim **3**, wherein Y is —OH.

18. The purified surfactant formulation of claim **3**, wherein Z is —CF_3.

19. The purified surfactant formulation of claim **1**, wherein m is 6 and n is 2.

20. The purified surfactant formulation of claim **1**, wherein:

the short-chain fluorosurfactant of Formula (I) has no more than 6 fluoro-bearing carbons;

X is a direct bond;

Y is —OH;

Z is $-CF_3$;

m is 6 and n is 2;

the impurity represented by Formula (II) is less than about 0.4% of the short-chain fluorosurfactant; and

the iodide in the purified surfactant formulation is about 0.6-2.4% by weight of the short-chain fluorosurfactant.