

is greater than the difference between (ii) and (iii) the density of any species of carbon nanotubes in the aqueous mixture;

forming an array of layers in a vessel including a first layer comprising at least a portion of the aqueous mixture, a second layer disposed above the first layer, the second layer comprising at least a portion of the liquid and having a density less than that of the first layer, and a third layer disposed below the first layer, the third layer having a density greater than that of the first layer;

centrifuging the vessel and first, second, and third layers for a time period sufficient for a plurality of fractions to form within the second layer, wherein each fraction includes carbon nanotubes having an average length different than that of other fractions in the vessel.

16. The method of claim **15**, wherein at least one of the first layer, the second layer, and the third layer comprises surfactant.

17. The method of claim **15**, wherein the liquid in the second layer comprises 5,5'-[(2-hydroxy-1-3 propanediyl)-bis(acetylamino)]bis [N,N'-bis(2,3dihydroxypropyl-2,4,6-triiodo-1,3-benzenecarboxamide)].

18. The method of claim **15**, wherein the third layer comprises 5,5'-[(2-hydroxy-1-3 propanediyl)-bis(acetylamino)] bis [N,N'-bis(2,3dihydroxypropyl-2,4,6-triiodo-1,3-benzenecarboxamide)].

19. The method of claim **15**, wherein the first layer comprises 5,5'-[(2-hydroxy-1-3 propanediyl)-bis(acetylamino)] bis [N,N'-bis(2,3dihydroxypropyl-2,4,6-triiodo-1,3-benzenecarboxamide)].

20. The method of claim **15**, wherein the average length of carbon nanotubes in a fraction proximate to a location of the first layer is less than the average length of carbon nanotubes in a fraction farther from the location of the first layer.

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