Table 1: Graphene dispersion conditions

Entry	Dispersant	Conc. Disp. (%wt)	% Amp	Duration (h)	Conc. dispersed GNP (mg/mL)
1	sodium dodecylsulfate*	0.1	75	2	0.22
2	Na Maleic anhydride Styrene Copolymer*	0.1	75	2	0.04
3	butyl beta-(hydroxyethyl) ester*	0.1	75	2	0.04
4	Polyurethane prepolymer*	0.1	75	2	0.09
	~~Na-dicresol dithiophosphates~~	~~0.1~~	~~75~~	~~2~~	~~0.19~~
	~~Na-naphthol dithiophosphates~~	~~0.1~~	~~75~~	~~2~~	~~0.28~~
5	carboxyl containing interpolymer	0.1	75	2	0.27
6	derivatized polycarboxylate	0.1	75	2	0.28
7	35-90wt% Alkylene oxide Polyurethane polymer	0.1	75	2	0.30
8	dodecyl beta-(hydroxyamino) ester*	0.1	75	2	0.20
9	Imide polymer	0.1	75	2	0.29
10	Imide polymer	0.1	75	8	0.31
11	Imide polymer	0.55	75	2	0.32
12	Imide polymer	0.85	75	2	0.37
13	Imide polymer	0.25	75	2	0.42
14	Polymer of dimethyl diallyl ammonium salt*	0.1	75	2	0.12

15	Polymer of dimethyl diallyl ammonium salt and acrylamide	0.1	75	2	0.88
16	Copolymer of dimethyl diallyl ammonium salt and acrylic acid	0.1	75	2	1.16
17	Copolymer of copolymer of acrylic acid, acrylamide, and methacrylamidopropyltrimethylammonium chloride	0.1	75	2	0.65

*Comparative dispersants

[0272] It was noted that ultrasonic probe dispersion was more effective than bath sonication, and longer probe sonication times lead to slightly higher dispersion concentrations.

[0273] The effect of graphene platelet concentration was also tested according to the table below.

GNP Loading Ratio	Dispersant (%wt)	% Amp	duration (h)	Dispersed GNP (mg/mL)
0.5 g GNP/100g H2O	0.1*	75	2	0.29
1.0 g GNP/100g H2O	0.1*	75	2	0.49
1.5 g GNP/100g H2O	0.1*	75	2	1.09
1.5 g GNP/100g H2O	0.1**	75	2	1.11
2.0 g GNP/100g H2O	0.1*	75	2	0.01

*imide containing polymer

**carboxyl containing interpolymer